**Uttar Pradesh**

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

**Agro-Eco Region4:** AER 4 in Uttar Pradesh comprises of Agra, Aligarh, Baghpat, Bulandsahar, Firozabad, Gautambudhnagar ,Ghaziabad, JyotibaphuleNagar, Mahamayanagar, Mainpuri, Mathura, Meerut, Muzafarnagar, Kanshiramnagar, Etah, Moradabad, Allahabad, Auraiya, Badaun, Etawah, Farrukhabad, Fatehpur, Hardoi, Jalaun, Jaunpur, Kannauj, Kanpur, KanpurDehat, Kaushambi, Pratapgarh, Santravidasnagar, Shahjahanpur, Unnao, Varanasi, Amethi, Raibareli, Lucknow, Banda, Chitrakoot, Mahoba , Hamirpur, Jhansi and Lalitpur districts of Eastern Ghats under Agro Ecological Sub Regions (AESR) 4.1,4.3& 4.4.

**Agro-Eco Region9:** AER9 in Uttar Pradesh comprises of Jyotibaphule Nagar, Muzafarnagar, Bijnor, Moradabad, Sharanpur, Hardoi, Jaunpur, Shahjahanpur, Varanasi, Amethi, Ambedkarnagar, Azamgarh, Ballia, Barabanki, Bareilly, Chandauli, Faizabad, Gazipur, Kheri, Lucknow, Mau, Pilhibhit, Rampur, Sultanpurand Sitapur 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:** AER13 in Uttar Pradesh comprises of Bahraich, Balrampur, Basti, Deoria, Gonda, Gorakhpur, Kushinagar, Maharajganj, Santkabirnagar, Shrawasti, Siddharthnagar, Kheri and Ambedkar nagar districts of Eastern Plateau (Chhattisgarh)under Agro Ecological Sub Regions(AESR) 13.1 & 13.2.

**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 daysin a year.

**Major NRM issues :**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Agra | Exclusively water erosion | Low in OC, Soil deficient in N & P | Saline, GW Contaminated with F & NO3 |  |
| Aligarh | Exclusively water erosion &Waterlogged | Low in OC, Soil deficient in N & P | Saline, GW Contaminated with F & NO3 |  |
| Baghpat | **-** | Low in OC, Soil deficient in N & P | GW Contaminated with NO3 | **-** |
| Bulandsahar | **-** | Low in OC, Soil deficient in N & P | GW Contaminated with F & NO3 |  |
| Etah | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with F & NO3 |  |
| Firozabad | Exclusively water erosion | Low in OC, Soil deficient in N & P | Saline, GW Contaminated with F & NO3 |  |
| Gautambudhnagar | **-** | Low in OC, Soil deficient in N & P | - |  |
| Ghaziabad | **-** | Low in OC, Soil deficient in N & P | GW Contaminated with F, NO3 & heavy metals |  |
| JyotibaphuleNagar | **-** | **-** | GW Contaminated with NO3 |  |
| Kanshiramnagar | **-** | **-** | Saline, GW Contaminated with F & NO3 |  |
| Mahamayanagar | Exclusively water erosion | Low in OC, Soil deficient in N & P | - |  |
| Mainpuri | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with F |  |
| Mathura | Exclusively water erosion &Waterlogged | Low in OC, Soil deficient in N & P | Saline, GW Contaminated with F, NO3 & heavy metals |  |
| Meerut | **-** | Low in OC, Soil deficient in N & P | GW Contaminated with NO3 & As |  |
| Moradabad | **-** | 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 | GW Contaminated with NO3 & heavy metals |  |

**AESR 4.3:**The region is hot semi-arid ESR with deep loamy alluvium-derived soils (occasional saline and sodic phases), medium AWC and LGP 90-120 daysin a year.

**Major NRM issues :**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Allahabad | Exclusively water erosion & Waterlogged | Low in OC, Soil deficient in N & P | GW Contaminated with F & NO3 |  |
| Amethi | **-** | Low in OC, Soil deficient in N & P | - |  |
| Auraiya | **-** | Low in OC, Soil deficient in N & P | GW Contaminated with F & NO3 |  |
| Badaun | **-** | Low in OC, Soil deficient in N & P | - |  |
| Etawah | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with F & Fe |  |
| Farrukhabad | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with F |  |
| Fatehpur | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with F, NO3 & Fe |  |
| Hardoi | Waterlogged | Low in OC, Soil deficient in N & P | GW Contaminated with F, NO3 & Fe |  |
| Jalaun | **-** | Low in OC, Soil deficient in N & P | - |  |
| Jaunpur | Exclusively water erosion & Waterlogged | Low in OC, Soil deficient in N & P | GW Contaminated with F, NO3 & heavy metals |  |
| Kannauj | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with F & NO3 |  |
| Kanpur | **-** | Low in OC, Soil deficient in N & P | Saline, GW Contaminated with F, NO3, Fe & heavy metals |  |
| Kanpur Dehat | **-** | Low in OC, Soil deficient in N & P | 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 |  |
| Lucknow | **-** | Low in OC, Soil deficient in N & P | - |  |
| Pratapgarh | Exclusively water erosion & Waterlogged | Low in OC, Soil deficient in N & P | GW Contaminated with F |  |
| RaiBareli | Exclusively water erosion | Low in OC, Soil deficient in N & P | Saline, GW Contaminated with F, NO3 & heavy metals |  |
| Santravidasnagar | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with NO3 & As |  |
| Shahjahanpur | Exclusively water erosion & Waterlogged | Low in OC, Soil deficient in N , P & K | GW Contaminated with F, NO3 & As |  |
| Unnao | **-** | Low in OC, Soil deficient in N & P | GW Contaminated with F, NO3, As, Fe & heavy metals |  |
| Varanasi | Exclusively water erosion & Waterlogged | Low in OC, Soil deficient in N & P | GW Contaminated with F, NO3 & heavy metals |  |

**ESR 4.4:** 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 daysin a year.

**Major NRM issues :**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Banda | Exclusively water erosion & Waterlogged | Low in OC, Soil deficient in N & P | GW Contaminated with F & NO3 |  |
| Chitrakoot | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with NO3 |  |
| Hamirpur | **-** | Low in OC, Soil deficient in N & P | Saline, GW Contaminated with F & NO3 |  |
| Jhansi | Exclusively water erosion | Low in OC, Soil deficient in N & P | Saline, GW Contaminated with NO3 & As |  |
| Lalitpur | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with F,NO3 & Fe |  |
| Mahoba | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with F & NO3 |  |

**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 daysin a year.

**Major NRM issues :**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Bijnor | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with NO3 & As |  |
| Jyotibaphule Nagar | **-** |  | GW Contaminated with NO3 & As |  |
| Moradabad | **-** | 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 & 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 daysin a year.

**Major NRM issues :**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Ambedkar nagar | Exclusively water erosion &Waterlogged | 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 &Waterlogged | Low in OC, Soil deficient in N & P | GW Contaminated with NO3, As & Fe |  |
| Ballia | Exclusively water erosion &Waterlogged | Low in OC, Soil deficient in N & P | GW Contaminated with NO3, As & Fe |  |
| Barabanki | Waterlogged | Low in OC, Soil deficient in N , P & K | GW Contaminated with NO3 |  |
| Bareilly | **-** | Low in OC, Soil deficient in N & P | GW Contaminated with F, NO3  & As |  |
| Chandauli | Exclusively water erosion | 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 |  |  |
| Gazipur | Exclusively water erosion &Waterlogged | Low in OC, Soil deficient in N & P |  |  |
| Hardoi | Waterlogged | Low in OC, Soil deficient in N & P | GW Contaminated with F, NO3 & Fe |  |
| Jaunpur | Exclusively water erosion &Waterlogged | Low in OC, Soil deficient in N & P | GW Contaminated with F, NO3 & heavy metals |  |
| Kheri | Exclusively water erosion | Low in OC, Soil deficient in N & P | - |  |
| Lucknow | **-** | Low in OC, Soil deficient in N & P | GW Contaminated with NO3 |  |
| Mau | Exclusively water erosion &Waterlogged | Low in OC, Soil deficient in N & P | GW Contaminated with NO3 & Fe |  |
| Pilhibhit | Exclusively water erosion | Low in OC, Soil deficient in N , P & K | GW Contaminated with As |  |
| Rampur | **-** | Low in OC, Soil deficient in N & P | - |  |
| Shahjahanpur | Exclusively water erosion &Waterlogged | Low in OC, Soil deficient in N & P | GW Contaminated with F, NO3 & As |  |
| Sitapur | Waterlogged | Low in OC, Soil deficient in N & P | GW Contaminated with F & NO3 |  |
| Sultanpur | Exclusively water erosion &Waterlogged | Low in OC, Soil deficient in N & P | GW Contaminated with F & NO3 |  |
| Varanasi | Exclusively water erosion &Waterlogged | 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 daysin a year.

**Major NRM issues :**

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

**AESR 13.1:**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.

**Major NRM issues :**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Ambedkarnagar | Exclusively water erosion &Waterlogged | Low in OC, Soil deficient in N & P | GW Contaminated with NO3 |  |
| Bahraich | Exclusively water erosion &Waterlogged | Low in OC, Soil deficient in N , P & K | GW Contaminated with As |  |
| Balrampur | Waterlogged | Low in OC, Soil deficient in N & P | GW Contaminated with NO3, As & Fe |  |
| Basti | Exclusively water erosion &Waterlogged | 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 |  |
| Kushinagar | Exclusively water erosion | Low in OC, Soil deficient in N & P | GW Contaminated with As |  |
| 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 daysin a year.

**Major NRM issues :**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Bahraich | Exclusively water erosion &Waterlogged | Low in OC, Soil deficient in N ,P& K | GW Contaminated with As |  |
| Balrampur | Waterlogged | 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 |  |

**Uttarakhand**

Uttarakhand comprises of two Agro Ecological Regions (AER) 9 & 14.

**Agro-Eco Region9:** AER 9 in Uttarakhand comprises of Haridwar and Udham Singh Nagar districts of Eastern Ghats under Agro Ecological Sub Regions(AESR) 9.1 & 9.2.

**Agro-Eco Region 14:** AER 14 in Uttarakhand comprises of Almora, Bageshwar, Chamoli, Champawat, Dehradun, Pithoragarh, Rudraprayag, Tehri Garwal, Uttarkashi, Nanital and Purbi Garhwal districts of Western Himalayas under Agro Ecological Sub Regions(AESR) 14.2, 14.4 & 14.5.

**AESR 9.1:** The region is hot semi-arid ESR with deep loamy alluvium-derived soils (occasional saline and sodic phases), medium AWC and LGP 90-120 daysin a year.

**Major NRM issues :**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Haridwar | Exclusively water erosion | Soil deficient in N | GW Contaminated with NO3 & Fe |  |

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

**Major NRM issues :**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Udham Singh Nagar | Exclusively water erosion &Waterlogged | Low in OC & Soil deficient in N | GW Contaminated with NO3 & Fe |  |

**AESR 14.2:** The region is warm moist to dry subhumid transitional ESR with medium to deep loamy to clayey Brown Forest and Podzolic soils, medium AWC and LGP 150-210 daysin a year.

**Major NRM issues :**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Almora | **-** | Soil deficient in N & P | GW Contaminated with NO3 |  |
| Bageshwar | **-** | **-** | - |  |
| Chamoli | Waterlogged | Soil deficient in N | - |  |
| Champawat | **-** | Soil deficient in N | - |  |
| Dehradun | Exclusively water erosion | **-** | GW Contaminated with NO3 & Fe |  |
| Pithoragarh | **-** | Soil deficient in N | - |  |
| Rudraprayag | **-** | Soil deficient in N | - |  |
| Tehri Garwal | **-** | Soil deficient in N | - |  |
| Uttarkashi | **-** | Soil deficient in N | - |  |

**AESR 14.4:** The region is humid to perhumid transitional ESR with shallow to medium deep loamy Red and Yellow soils, low AWC and LGP 270-300+ days in a year.

**Major NRM issues :**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Dehradun | Exclusively water erosion | **-** | GW Contaminated with NO3 & Fe |  |
| Uttarkashi | **-** | Soil deficient in N | GW Contaminated with Fe |  |

**AESR 14.5:**The region is warm moist subhumid ESR with medium to deep, loamy arai soils, medium AWC and LGP 270-300 days in a year.

**Major NRM issues :**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Almora | **-** | Soil deficient in N & P |  |  |
| Purbi Garhwal | - | Soil deficient in N |  |  |
| Nanital | Waterlogged | Soil deficient in N & P |  |  |