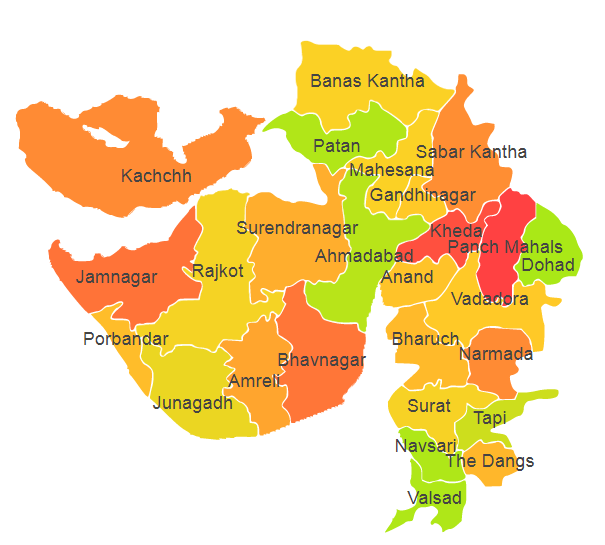
**Gujarat**

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Gujarat comprises of five Agro Ecological Regions (AER) 2,4,5,6 and 19.

**Agro-Eco Region 2:** AER 2 in Gujarat comprises of Banaskantha, Kachchh, Jamnagar, Patan, Porbandar, Rajkot and Surendranagar districts of Western Plain. Kachchh and part of Kathia war Peninsula under Agro Ecological Sub Regions (AESR) 2.2, 2.3 and 2.4.

**Agro-Eco Region 4:** AER 4 in Gujarat comprises of Ahmadabad, Gandhinagar, Khera, Mahesana, Sabar Kantha and Surendranagar districts of Northern Plain and Central Highlands including Aravallis under Agro Ecological Sub Regions (AESR) 4.2.

**Agro-Eco Region 5:** AER 5 in Gujrat comprises of Anand, Bharuch, Bhavnagar, Dahod, Junagarh, Khera, Narmada, Panchhmahal, Rajkot, Surat, Tapi and Vadodra districts of Gujarat Plains & Kathiawar Peninsula under Agro Ecological Sub Regions (AESR) 5.1,5.2 and 5.3.

**Agro-Eco Region 6:** AER 6 in Gujrat comprises of Dangs district of Deccan Plateau under Agro Ecological Sub Regions (AESR) 6.2.

**Agro-Eco Region 19:** AER 9 in Gujrat comprises of Dangs, Navsari and Valsad districts of Western Ghats & Coastal Plain under Agro Ecological Sub Regions (AESR) 19.1.

**Major NRM issues :**

**AESR 2.2 :** The region hot hyper-arid ESR with deep loamy saline and alkali soils, low AWC and LGP <60 days in a year.

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| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Kachchh | Exclusively Saline Soils, Saline soils under open forest | Soil deficient in N & Fe | Saline, GW Contaminated with F, NO3, As & Fe | Moderately prone to flood, drought & cyclone |

**AESR 2.3 :** The region hot moist subhumid to humid transitional ESR with deep, loamy to clayey Red and Lateritic soils, low to medium AWC and LGP 210-270 days in a year.

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| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Banas kantha | Exclusively water erosion, Exclusively saline soils & Exclusively sodic soils | Low in OC, Soil deficient in P & N | GW Saline, Contaminated with F, NO3 & Fe | Moderately prone to flood & drought |
| Patan | Exclusively saline soils & Exclusively sodic soils | Soil deficient in N, Zn, B & S | GW Saline, Contaminated with F, NO3 &As | Extreme Drought |

**AESR 2.4 :** The region hot moist subhumid to humid transitional ESR with deep, loamy to clayey Red and Lateritic soils, low to medium AWC and LGP 210-270 days in a year.

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| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Jamnagar | Exclusively saline soils | Soil deficient in N,S & K | GW Saline, Contaminated with F & NO3 | Moderately prone to flood, drought & cyclone |
| Kachchh | Exclusively Saline Soils, Saline soils under open forest | Soil deficient in N, Fe & S | GW Saline, Contaminated with F, NO3, As & Fe | Moderately prone to flood, drought & cyclone |
| Rajkot | Exclusively Saline Soils | Soil deficient in N & B | GW Saline, Contaminated with F, NO3 & As | Highly prone to flood, drought & cyclone |
| Surendranagar | Exclusively water erosion, Exclusively saline soils & Exclusively sodic soils | Soil deficient in N, Zn, Fe, B & S | GW Saline, Contaminated with F, NO3 & As | Highly prone to drought & flood |
| Porbandar | Exclusively water erosion | Low in OC, Soil deficient in N, Zn, Fe, B & S | GW Saline, Contaminated with F & NO3 | - |

**AESR 4.2 :** The region hot dry semiarid ESR with deep loamy Gray Brown and alluvium-derived soils, 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*** |
| Ahmadabad | Exclusively saline soils & Exclusively sodic soils | Low in OC, Soil deficient in N & B | GW Saline, Contaminated with F, NO3 & Fe | Highly prone to drought & flood |
| Gandhinagar | Exclusively water erosion | Low in OC, Soil deficient in N, Zn, Fe, B & S | GW Contaminated with F& As | - |
| Khera | Exclusively water erosion | Low in OC, Soil deficient in N, Zn & S | GW Saline,Contaminated with F & NO3 | - |
| Mahesana | Exclusively sodic soils | Low in OC, Soil deficient in N & B | GW Saline, Contaminated with F, NO3, As & Fe | Moderately prone to flood & drought |
| Sabar Kantha | **-** | Low in OC, Soil deficient in N, Zn, B & S | GW Saline, Contaminated with F & NO3 | - |
| Surendranagar | Exclusively water erosion, Exclusively saline soils & Exclusively sodic soils | Low in OC, Soil deficient in N, Zn, Fe, B & S | GW Saline, Contaminated with F, NO3 & As | Highly prone to drought & flood |

**AESR 5.1 :** The region dry semiarid ESR with shallow and medium loamy to clayey black soils (deep black soils as inclusion) 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*** |
| Amreli | Exclusively water erosion | Soil deficient in N,Zn,Fe,B & S | GW Saline, Contaminated with F, NO3, As & Fe | Moderately prone vulnerability to Drought |
| Bhavnagar | Exclusively saline soils | Soil deficient in N, Zn & B | GW Saline, Contaminated with F, NO3, As & Fe | Extreme Drought |
| Junagarh | Exclusively saline soils | Soil deficient in N, Zn, Fe, B & S | GW Saline, Contaminated with F & NO3 | **-** |
| Porbandar | Exclusively water erosion | Soil deficient in N, Zn, Fe, B & S | GW Saline, Contaminated with F, NO3, As & Fe | **-** |
| Rajkot | Exclusively saline soils | Soil deficient in N & B | GW Saline, Contaminated with F & NO3 | Highly prone to flood, drought & cyclone |

**AESR 5.2:** The region hot moist subhumid to humid transitional ESR with deep, loamy to clayey Red and Lateritic soils, low to medium AWC and LGP 210-270 days in a year.

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| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Anand | Exclusively water erosion | Soil deficient in N, Zn & B | GW Saline, Contaminated with F, NO3 & As | Moderately prone to flood |
| Bharuch | Mining /Industrial waste | Soil deficient in N, Zn & B | GW Saline, Contaminated with F, NO3, As & Fe | Extreme Drought |
| Dahod | Exclusively water erosion | Soil deficient in N, Zn, B & S | GW Saline Contaminated with F, NO3 & As | **-** |
| Khera | **-** | Low in OC, Soil deficient in N, Zn & S | GW Saline, Contaminated with F & NO3 | **-** |
| Narmada | **-** | Low in OC, Soil deficient in N, Zn, Fe, B & S | GW Saline, Contaminated with NO3 & Fe | Extreme Drought |
| Panchmahal | **-** | Low in OC, Soil deficient in N, Zn, Fe, B & S | GW Contaminated with F & NO3 | **-** |
| Surat | Mining /Industrial waste | Soil deficient in N, Zn & B | GW Saline, Contaminated with F & NO3 | Severe Drought |
| Tapi | **-** | Soil deficient in N & B | - | **-** |
| Vadodara | **-** | Low in OC & Soil deficient in N | GW Saline, Contaminated with F, NO3 & As | Moderate Drought |

**AESR 5.3 :** The region hot moist semi-arid ESR with medium and deep, clayey Black soils (shallow black soils as inclusions), 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*** |
| Bhavnagar | Coastal Salinity | Soil deficient in N, Zn & B | Saline, GW Contaminated with F, NO3, As & Fe | Extreme Drought |
| Junagarh | Coastal Salinity | Soil deficient in N, Zn, Fe, B & S | Saline, GW Contaminated with F & NO3 | Moderately prone to Drought & Cyclone |

**AESR 6.2 :** The hot moist semi-arid ESR with shallow and medium loamy to clayey Black soils (medium land deep clayey Black soils as 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*** |
| Dangs | Exclusively water erosion | Soil deficient in Zn, S & B | GW Contaminated with NO3 | **-** |

**AESR 19.1 :** The region is hot humid ESR with medium to deep loamy to clayey mixed Red and Black soils, medium to high AWC and LGP 210-240 days in a year.

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| **Districts** | ***Land degradation*** | ***Soil health & fertility*** | ***Water related constraints*** | ***Environmental constraints*** |
| Dangs | Exclusively water erosion | Soil deficient in Zn, S & B | GW Contaminated with NO3 | **-** |
| Navsari | Exclusively water erosion | Soil deficient in N | Saline & GW Contaminated with F | - |
| Valsad | Exclusively water erosion | Soil deficient in N, Zn, S & B | GW Contaminated with Fe | - |

**Organization and Establishments for Technology Backstopping**

***ICAR Research Institutes:***

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| Regional Station of Central Arid Zone Research Institute, Bhuj | <http://www.cazri.res.in/index.php> |
| Regional Station of Indian Institute of Soil & Water Conservation , Vasad | <http://www.cswcrtiweb.org/index1.html?VASAD/Vasad%20Back.htm> |
| Regional Station of Central Soil Salinity Research Institute, Bharuch | <https://cssri.res.in/bharuch-rrs/> |
| KVK Portal | <https://kvk.icar.gov.in/> |

***SAUs/CAUs:***

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| Sardarkrushinagar Dantiwada Agricultural University | <http://www.sdau.edu.in/> |
| Anand Agricultural University | <http://www.aau.in/> |
| Navsari Agricultural University | <http://nau.in/> |
| Junagadh Agricultural University | <http://www.jau.in/> |
| Kamdhenu University | <http://www.ku-guj.org/> |

***List of KVKs:*** <https://icar.org.in/content/gujarat>

***List of Soil testing Laboratories****:* <https://farmer.gov.in/STLDetails.aspx?State=24>