



# All India Coordinated Research Project on Micro- and Secondary Nutrients and Pollutant Elements in Soils and Plants (AICRP-MSPE)

## ICAR- INDIAN INSTITUTE OF SOIL SCIENCE, BHOPAL



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### GENESIS

- In order to delineate the micronutrient deficient areas and to alleviate the nutrition stresses, the ICAR initiated the "All India Coordinated Scheme of Micronutrient in Soils" in 1967 with its National Headquarter at the PAU, Hissar (subsequently shifted to PAU, Ludhiana in 1970). The scheme was started with six Coordinating centres located at Lucknow, Hissar, Jabalpur, Pusa, Anand and Coimbatore. Later Ludhiana and Hyderabad centres were also created in 1975.
- To ensure correct diagnosis of deficiency in crops, proper delineation of micronutrient deficient areas and develop suitable amelioration practices in soils and plants, the scheme was renamed later as "All India Coordinated Research Project of Micronutrient in Soils and Plants".
- Realizing the adverse effect of emerging S deficiencies on crop yields and increasing incidences of heavy metal pollution in agricultural soils, water and plants, the mandate of project was subsequently enlarged and it was renamed as "All India Coordinated Research Project of Micro- and Secondary Nutrients and Pollutant Elements in Soils and Plants" during 1988.
- Successively, the deficiencies of micro- and secondary nutrients surfaced in many parts of the country, additional centres were also included. Three centres viz. Bhubaneswar, Akola, and Pantnagar were established in 1996. Later on during 2009, five more centres were added to the project viz. Palampur, Kanpur, Jorhat, Mohanpur and Ranchi to address the growing deficiency of these nutrients, especially in Acid soils.
- In order to further enlarge the outreach of AICRP- MSPE, 5 new centres (New Delhi, UAS (Bengaluru), NIANP (Bengaluru), Imphal and Thrissur) were initiated in the year 2015.

### OBJECTIVES

1. To delineate and/or reassess and mapping of micro- and secondary nutrients deficient and toxic areas using GPS/GIS, and developing amelioration techniques for their correction.
2. Micronutrients indexing for forecasting emerging micro- and secondary-nutrients deficiencies and toxicities in crops and soils in different soil, crops and management systems.
3. Revisiting the critical limits of micro and secondary nutrients and establishing phytotoxic limits of heavy metals in different soils and crops including vegetables.
4. To develop suitable techniques for increasing fertilizer-use-efficiency along with inclusion of nano-fertilizers, organic manures, sewage sludge for ameliorating the MSN deficiencies in crops and soils.
5. To monitor health hazards from heavy metal or trace element pollutant in soils, plants and animals.
6. To develop agronomic biofortification approaches for micronutrients enrichment and to identify mechanism and processes of micronutrients enrichment and their role in reproductive physiology.
7. To study micronutrients in soil-plant-animal and/ or human continuum
8. Dissemination of micronutrients technologies through frontline demonstration and suitable publication for enhancing the micronutrients use and its impact on soil, animal and human health and crop productivity.

### TECHNICAL PROGRAMM

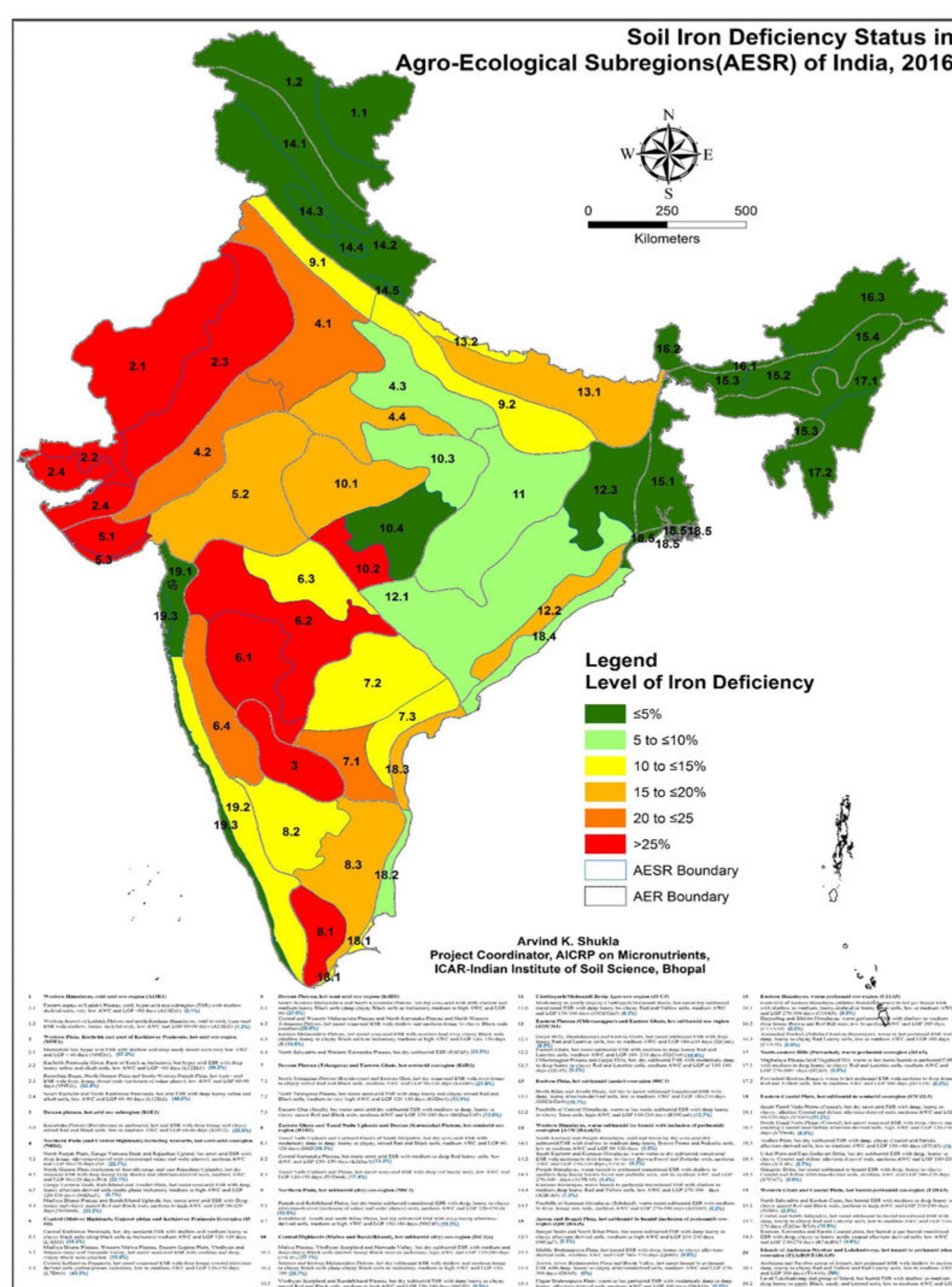
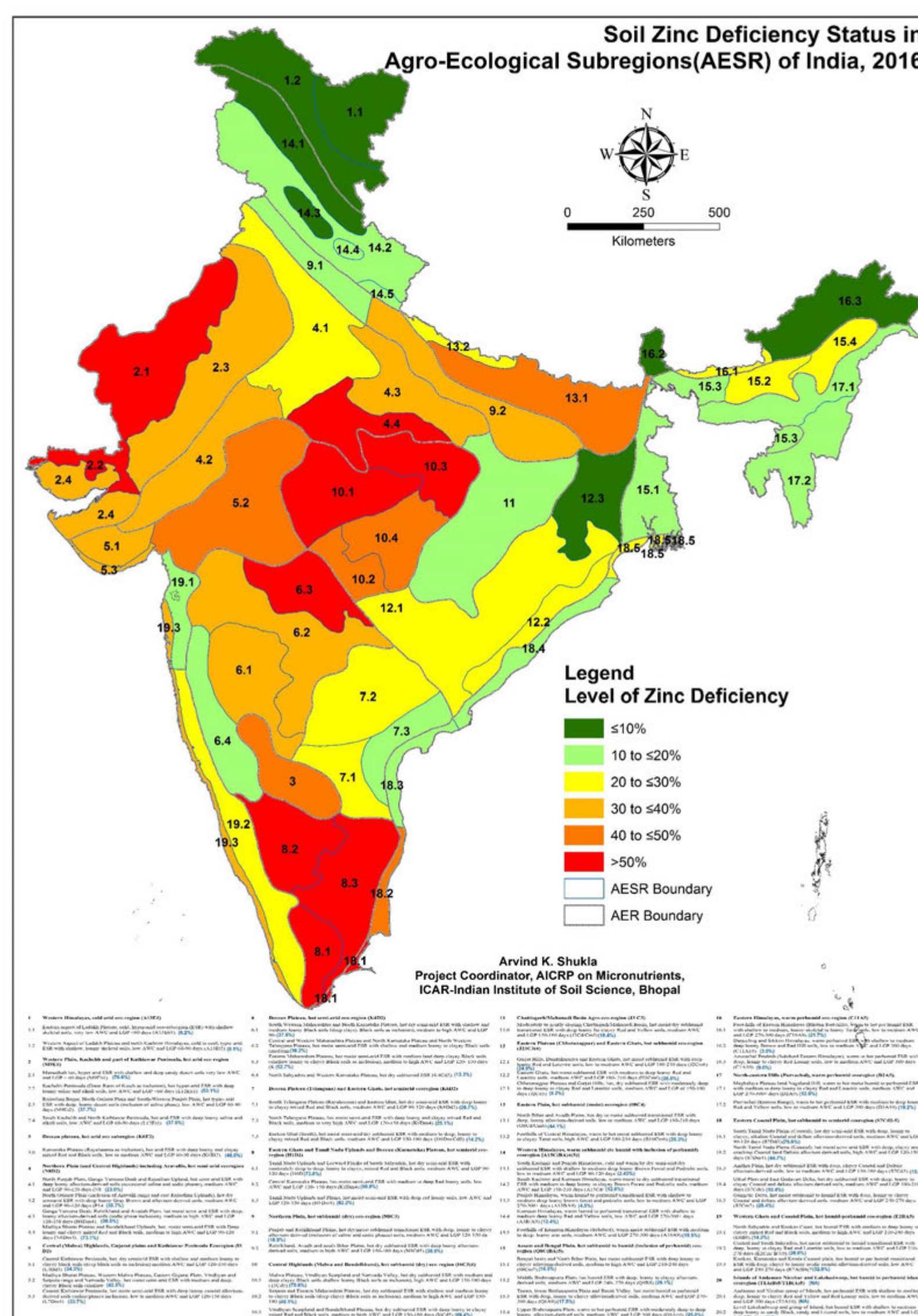
1. Delineation and reassessment of micro- and secondary nutrients deficient areas and updating soil fertility maps
2. Nutrient indexing in areas of intensive agriculture under different cropping systems and management practices
3. Refinement of critical values of micro and secondary nutrients in soils and plants and standardization of soil test methods
4. Amelioration of micro and secondary nutrients deficiency in crops
5. Screening of crop genotypes for micronutrient efficiency
6. Study on secondary and micronutrient in soil-plant-animal-human continuum
7. Monitoring of heavy metal toxicity in relation to soil-plant-animal-human continuum
8. Basic studies
9. Frontline demonstrations (FLDs) on effective technologies

### COOPERATING CENTRES

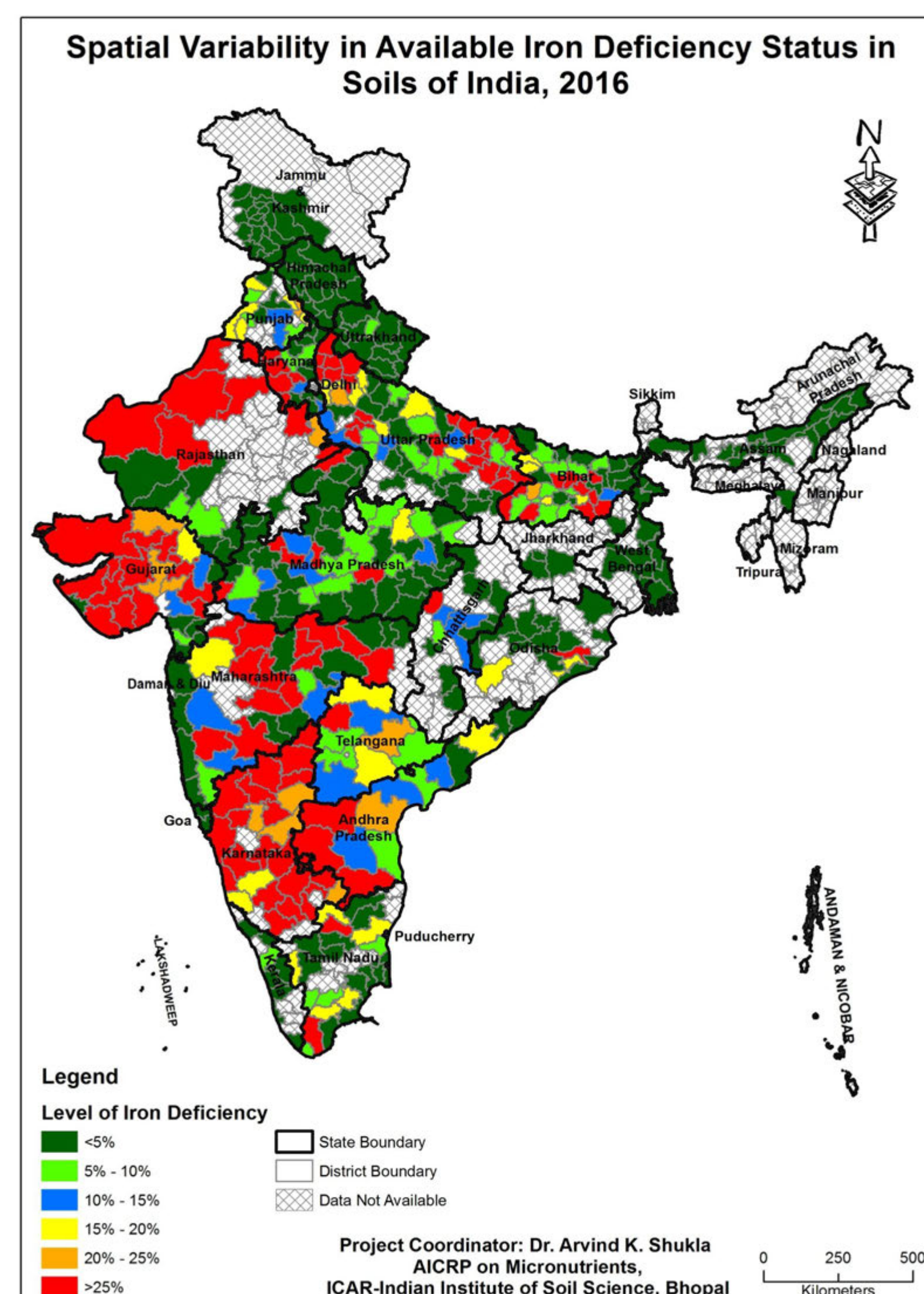
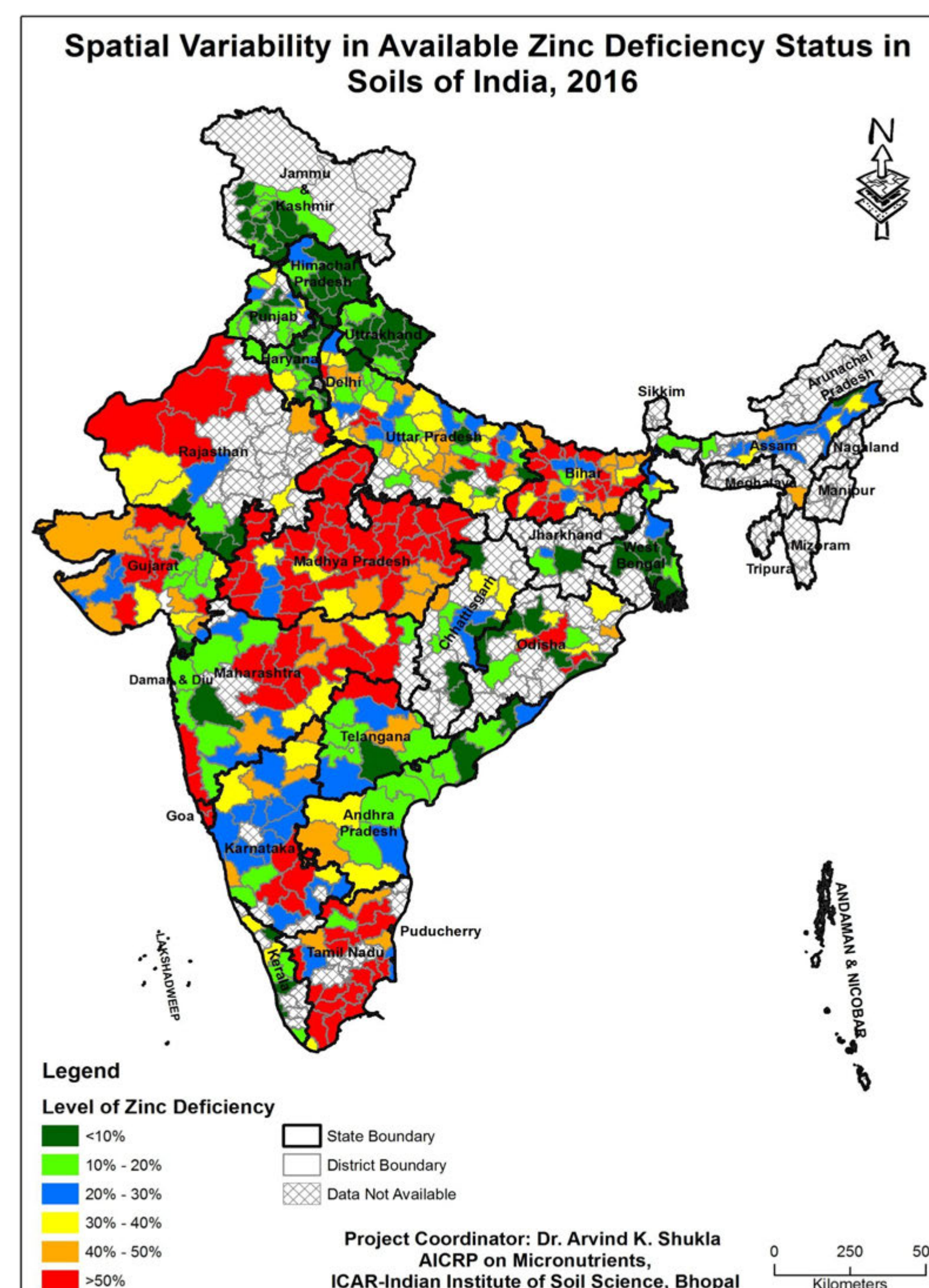
1. CCS Haryana Agricultural University Hissar, Haryana – 125 004	01.04.1967
2. Rajendra Agricultural University Pusa, Bihar – 848 125	01.12.1967
3. Tamil Nadu Agricultural University Coimbatore, Tamil Nadu – 641 003	14.08.1967
4. Anand Agricultural University Anand, Gujarat – 388110	01.04.1967
5. Lucknow University Lucknow, Uttar Pradesh – 226007	01.04.1967
6. Jawaharlal Nehru Krishi Vishwa Vidyalaya Jabalpur, Madhya Pradesh – 482 004	01.04.1967
7. Punjab Agricultural University Ludhiana, Punjab – 141 027	10.10.1970
8. Acharya N. G. Ranga Agricultural University, Hyderabad, Telangana – 500 030	01.08.1975
9. GBP University of Agriculture & Technology Pantnagar, Uttarakhand – 263 145	10.04.1996
10. Dr. Panjabrao Deshmukh Krishi Vidyapeeth Akola, Maharashtra – 444 104	10.04.1996
11. Orissa University of Agriculture Technology Bhubaneswar, Odisha – 751 003	10.04.1996
12. CSKHP Krishi Vishwavidyalaya Palampur, Himachal Pradesh – 176 062	01.04.2009
13. CSA University of Agriculture & Technology Kanpur, Uttar Pradesh – 208 001	01.04.2009
14. Assam Agricultural University Jorhat, Assam – 785 013	01.04.2009
15. Birsra Agricultural University Ranchi, Jharkhand – 834006	01.04.2009
16. Bidhan Chandra Krishi Vishwa Vidyalaya, Mohanpur, West Bengal – 741 252	01.04.2009
17. ICAR-Indian Agricultural Research Institute, Pusa, New Delhi – 110012	01.04.2015
18. ICAR-National Institute of Animal Nutrition & Physiology, Bengaluru, Karnataka – 560030	01.04.2015
19. Central Agricultural University Imphal, Manipur – 795004	01.04.2015
20. University of Agricultural Sciences Bengaluru, Karnataka – 560 065	01.04.2015
21. Kerala Agricultural University Thrissur, Kerala – 680656	01.04.2015

### DELINEATION PROGRAMME

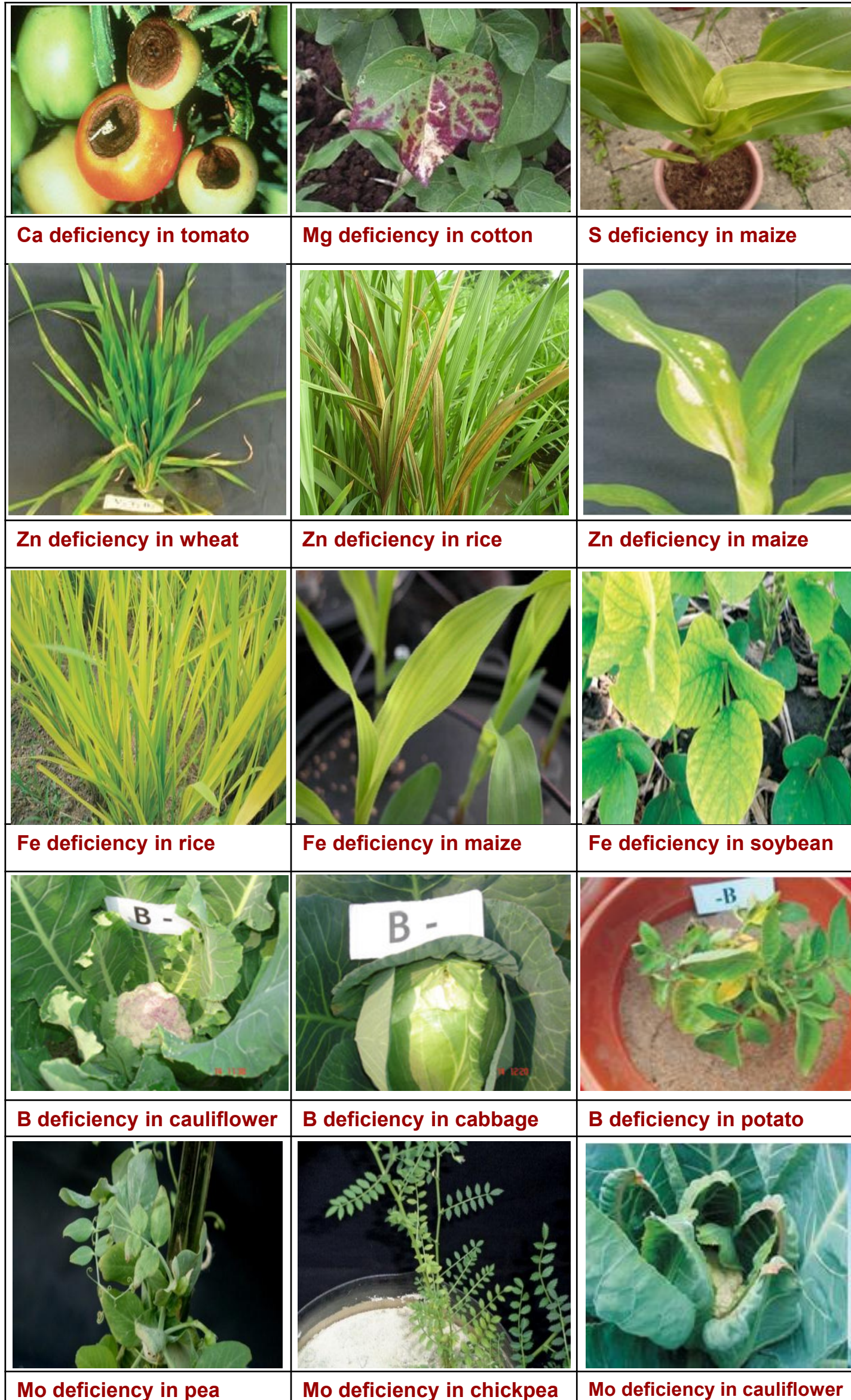
#### AESR-wise maps of India



#### District-wise maps of India



### CATALOGUE OF DEFICIENCY



### SOIL-PLANT-ANIMAL-HUMAN CONTINUUM



### TRANSFER OF TECHNOLOGY



### CAPACITY BUILDING



### AWARDS AND RECOGNITIONS



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