


**Public-Private Partnerships:  
Promoting Zinc Fertilization  
in China and India**

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Zinc Nutrient Initiative



## Zinc Deficiency... a Global Issue



<b>2 BILLION</b> People worldwide who don't get enough zinc	<b>1.5 MILLION</b> Children who die each year from diarrhea
<b>800,000</b> People at risk of dying each year from zinc deficiency	<b>450,000</b> Children at risk of dying every year due to zinc deficiency

 **Zn Deficiency in Soils:**

Is the most common micronutrient deficiency

Occurs in 50% of the world's agricultural soils - FAO


Directly correlates to zinc deficiency in humans – especially in developing nations that rely on cereal crops

Will prevent plants from reaching their full potential *even if* their macronutrient needs are met.

Can be corrected with a simple, sustainable solution

Moderate Zn deficiency

Widespread Zn deficiency

 **Zinc Deficiency in Soil Links Directly to Zinc Deficiency in Humans**

Alloway, 2007

Zinc deficiency in soils

Black et al., 2008

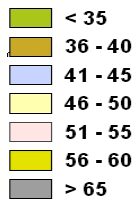
Zinc deficiency in humans



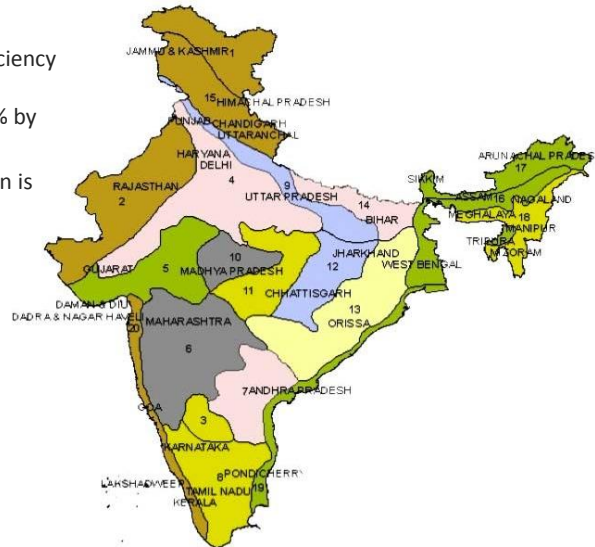
## Zinc Deficiency in Soil: India

- The average level of Zn deficiency in Indian soils is 50% and is projected to increase to 63% by 2025.
- 20% of the Indian population is deficient in zinc

% Zn deficiency in soil

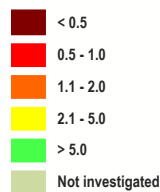


M.V. Singh, IISS, Bhopal, 2000

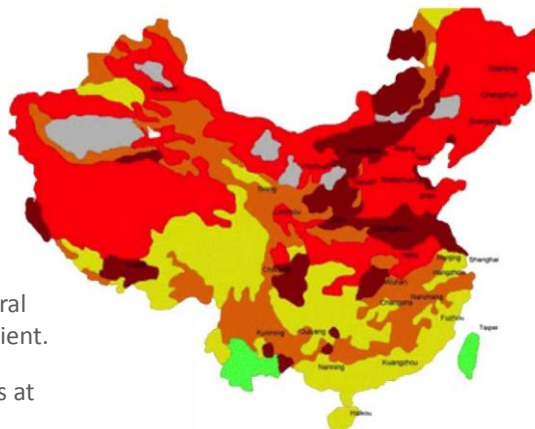


## Zinc Deficiency in Soil: China

DTPA, plant available Zn in soil



- Almost half of the agricultural soils in China are zinc-deficient.
- 14% of China's population is at risk of zinc deficiency



Yang XE, Chen WR, Feng Y. 2007. Improving human micronutrient nutrition through biofortification in the soil-plant system: China as a case study. *Environ Geochem Health*.29(5):413-428.



## Zinc Applications to crops in India and China



Zinc improved rice grain yield up to 30 % in some locations of the Orissa State, India

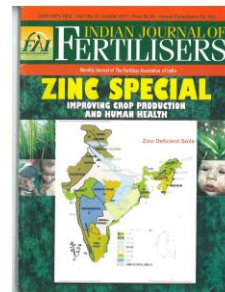


Zinc applications improved rice grain yield by 20% in 2 locations of Sichuan, China



## India Case-Study

- Program activities:
  - Partnerships developed with key-stakeholders:
    - Ministry of Agriculture
    - Fertilizer Assoc. of India
    - Fertilizer companies
  - National/regional workshops
  - Training sessions
  - Communications





## India Case-Study

- Zinc subsidy included in India's NBSS in 2011
- 31 new zinc fertilizer blends in India
- 34% increase in Zn-fertilizer use in India
- 30,000 ZnSO<sub>4</sub> plant constructed



## China Case-Study

- IZA and Ministry of Agriculture launched joint multi-year zinc fertilizer project:
  - Numerous crop trials, demonstration plots, farmer days
  - National/regional workshops
  - Training sessions





# China Case-Study

- Ministry of Agriculture included zinc in national fertilizer recommendation for 1<sup>st</sup> time ever in 2012
- MoA's 2013 national recommendations again includes zinc fertilizer
- National recommendations distributed to 400,000 extension workers



# ZNI Affiliate Members

The image displays a collection of logos for ZNI affiliate members. The logos are arranged in several rows. Key members include Bayer CropScience, Kingenta (金正大国际), OCP, OMEX, chakradhar CHEMICALS PVT. LTD., Forbon, agrichem, IFFCO, and many others. Some logos include Chinese characters alongside the English text.



# Public-Private Partnerships

