

Public-Private Partnerships: Reaching out to Governments in China, India, and Brazil

Andrew Green
Director, Zinc Nutrient Initiative

April 24, 2013



Zinc Deficiency... a Global Issue



2 BILLION

People
worldwide who
don't get
enough zinc

**1.5
MILLION**

Children who die
each year from
diarrhea

800,000

People at risk of
dying each year
from zinc
deficiency

450,000

Children at risk
of dying every
year due to zinc
deficiency



Zn Deficiency in Soils:

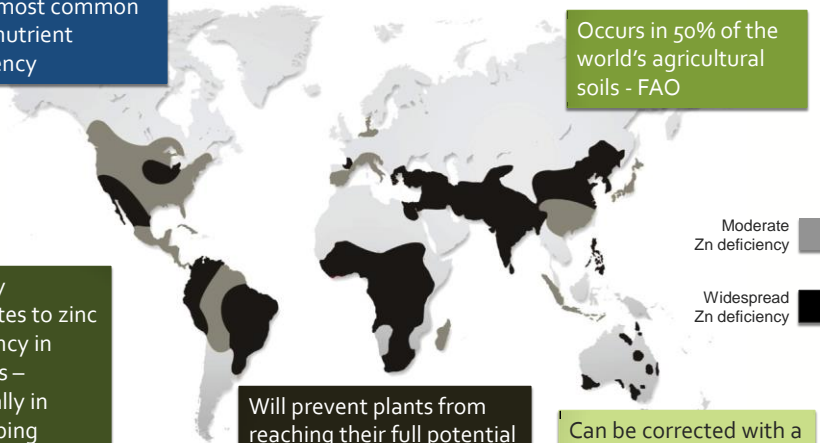
Is the most common micronutrient deficiency

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

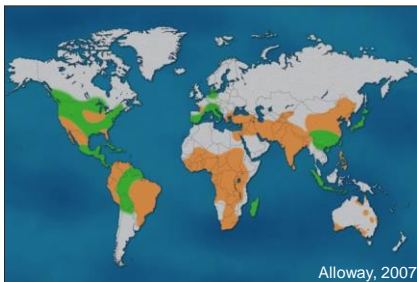
Directly correlates to zinc deficiency in humans – especially in developing nations that rely on cereal crops

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

Can be corrected with a simple, sustainable solution

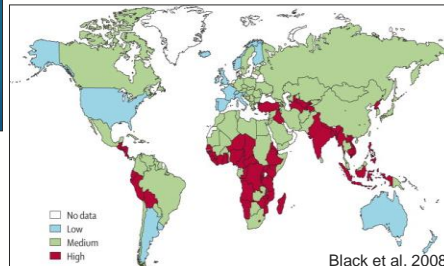


Zinc Deficiency in Soil Links Directly to Zinc Deficiency in Humans



Zinc deficiency in soils

Alloway, 2007



Zinc deficiency in humans

Black et al., 2008



Zinc Applications to crops in India and China



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

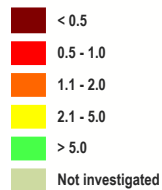


Zinc applications improved rice grain yield by 20% in 2 locations of Sichuan, China

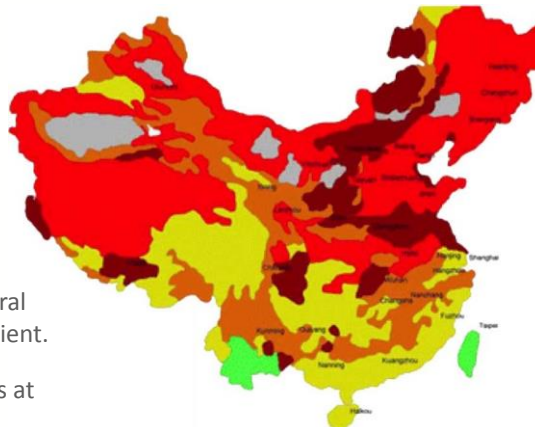


Zinc Deficiency in Soil: China

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





Partnership in China

IZA and China's Ministry of Agriculture launched joint zinc fertilizer program in 2011; extension signed through 2013



Dr. Ming Fan, Director of ZNI-China, speaks to government delegates visiting wheat Zn fertilizer demonstration sites in Gaocheng, Hebei Province, May 24, 2012.



**Ministry of Agriculture
The People's Republic of China**



Outcome of Partnership in China

- China MOA issued three national recommendation for zinc fertilizer in key crops:
 - All key staple crops – rice, wheat, maize, potatoes
 - Many key cash crops – fruits and vegetables

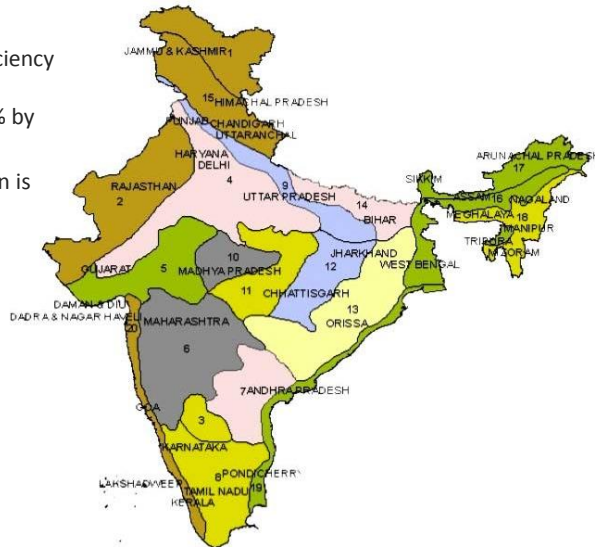
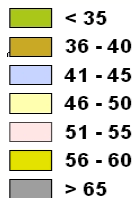




Zinc Deficiency in Soil: India

- 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



Partnership in India

- Working with Government associations such as MoA and IFFCO
- National and regional meetings held with government representatives, et al to identify key barriers, opportunities and actions



FAI-IZA Symposium March 2012
 Attended by State Government, State Agricultural University, UNICEF, ICAR & KVKs, Fertilizer Industry and NGOs.



Department of Agriculture & Cooperation
 Ministry of Agriculture
 Government of India



Outcome of Partnership in India

In 2011, India added zinc to the Nutrient Based Subsidy policy for fertilizers

India: Implementation of the Nutrient Based Subsidy (NBS) policy for Fertilizers with effect from April 2011

The Department of Fertilizers has continued the NBS for P&K fertilizers including SSP w.e.f. 1 April 2011 for 2011-12. NBS will be applicable for indigenous produced and imported D-Ammonium Phosphate (DAP), 16-46-00, Mono Ammonium Phosphate MAP (11-52-0), Triple Super Phosphate (TSP) (0-46-0),

| Sl. No. | Nutrients | NBS (Rupee per Kg of Nutrients) |
|---------|-----------|---------------------------------|
| 1 | P | 52.11 |
| 2 | K | 25.54 |
| 3 | S | 11.28 |
| 4 | S | 11.28 |

| Sl. No. | Fertilizers | NBS (Rs. per MT product) |
|---------|-------------------|--------------------------|
| 1 | DAP | 12799 |
| 2 | MAP | 12779 |
| 3 | TSP | 6168 |
| 4 | SSP | 2478 |
| 5 | 20-20-10 | 8796 |
| 6 | 20-20-10 | 8683 |
| 7 | 20-20-10 | 8796 |
| 8 | 12-36-12 | 11715 |
| 9 | 12-36-12 | 11582 |
| 10 | 12-36-12 | 11582 |
| 11 | 14-35-14 | 11488 |
| 12 | 14-35-14 | 11898 |
| 13 | 15-15-15 | 10176 |
| 14 | 15-15-15 | 10176 |
| 15 | 15-15-15 | 11742 |
| 16 | Ammonium Sulphate | 6117 |

| Sl. No. | Nutrients for fertilization as per FCO | Additional subsidy Rs per MT of fertilized/coated fertilizers |
|---------|--|---|
| 1 | Zn | 400 |
| 2 | Zn+Zn | 800 |

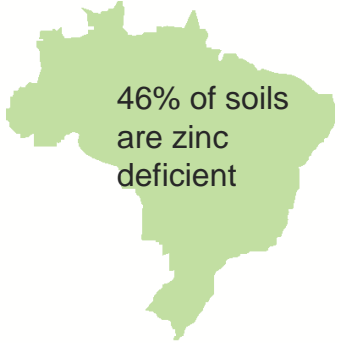


IZA-FAI Award 2012 "For Promoting the Use of Zinc in Indian Agriculture" Presented by Srikant Kumar Jena, the Minister of State for Chemicals and Fertilizers



Zinc Deficiency in Soil: Brazil

- 46% of soils in Brazil are at low levels of zinc availability
- 30 to 40% of the population in Brazil is at risk of zinc deficiency. In poorer regions, 50% of the population is at risk.





Partnership in Brazil

- Working with EMBRAPA/Ministry of Agriculture
 - Developing soil zinc deficiency map
 - Memorandum of Understanding in process
 - Participating in ongoing forum to identify key barriers, opportunities and actions



Public-Private Partnerships

