



**International
Fertilizer Industry
Association**

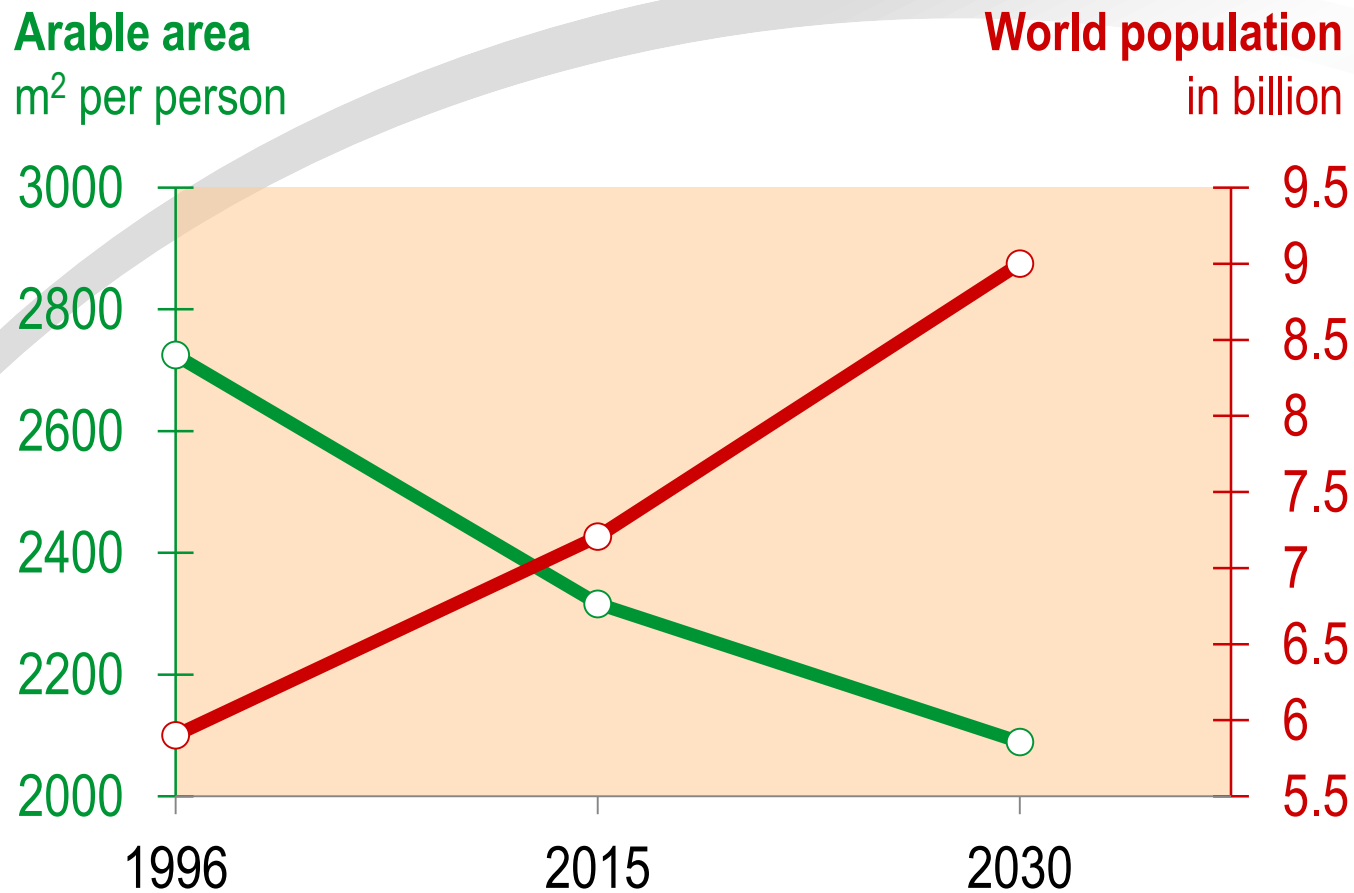
Fertilizer Industry's Views: Enhancing Agricultural Productivity Sustainably

Luc M. Maene, Director General, IFA

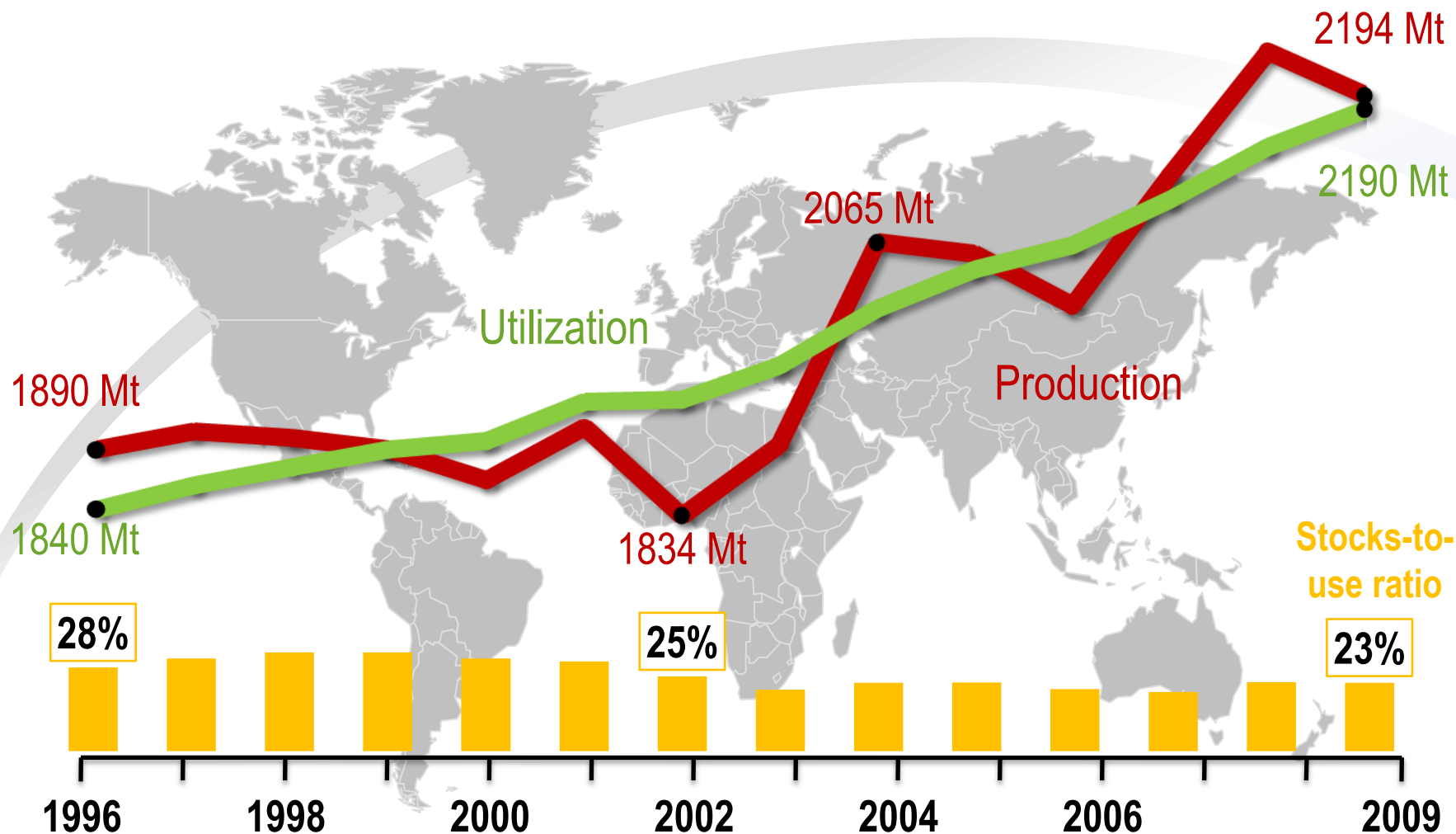


2010 Fluid Fertilizer Foundation Forum, Scottsdale, AZ, USA, 14-16 February 2010

The challenge... to increase productivity from a limited area

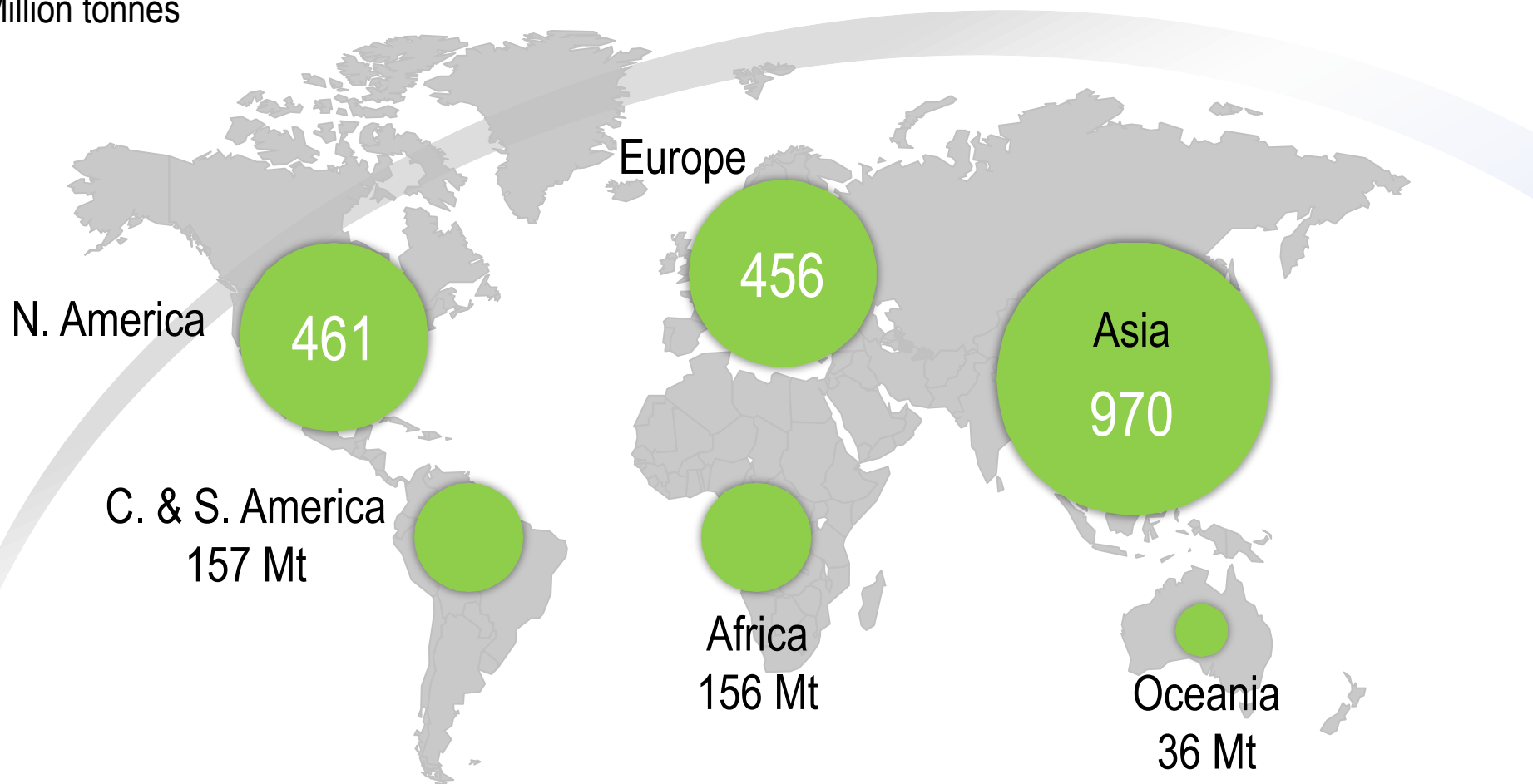


World cereal production and utilization

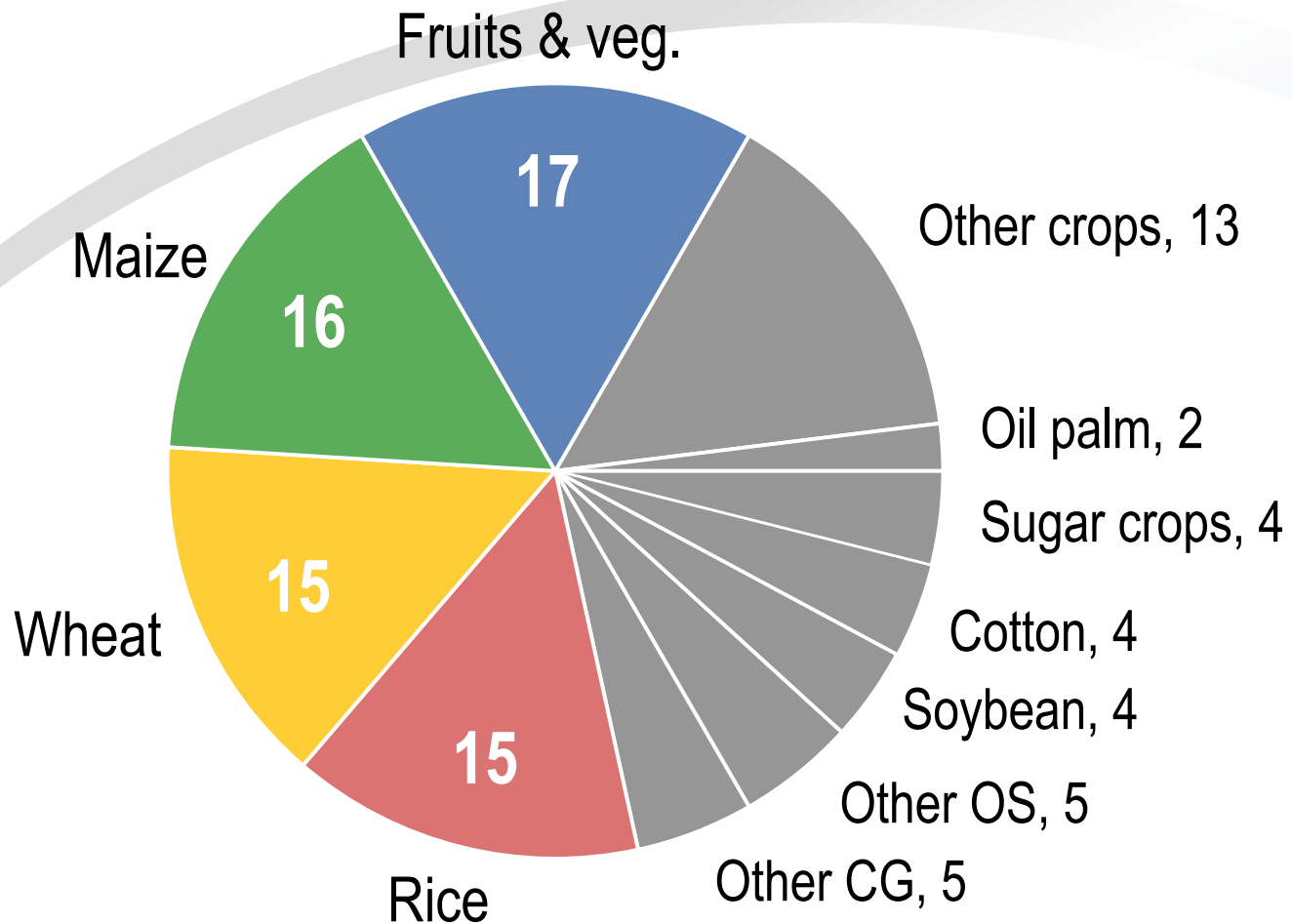


World cereal production by region, 2009

Million tonnes



Total fertilizer use by crop at the global level in 2006/07 (%)



Global fertilizer consumption

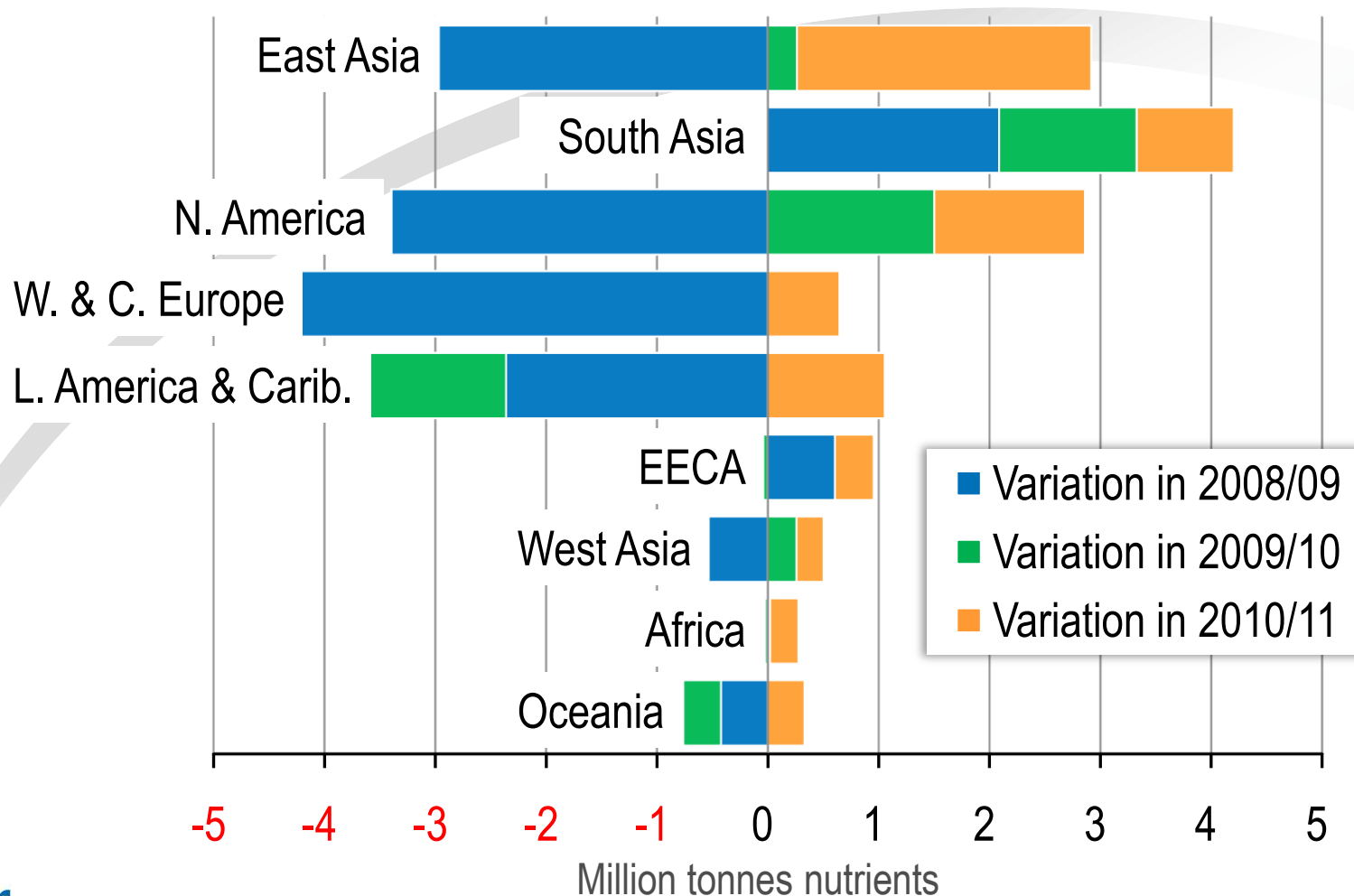
Short-term forecasts

Million tonnes nutrients

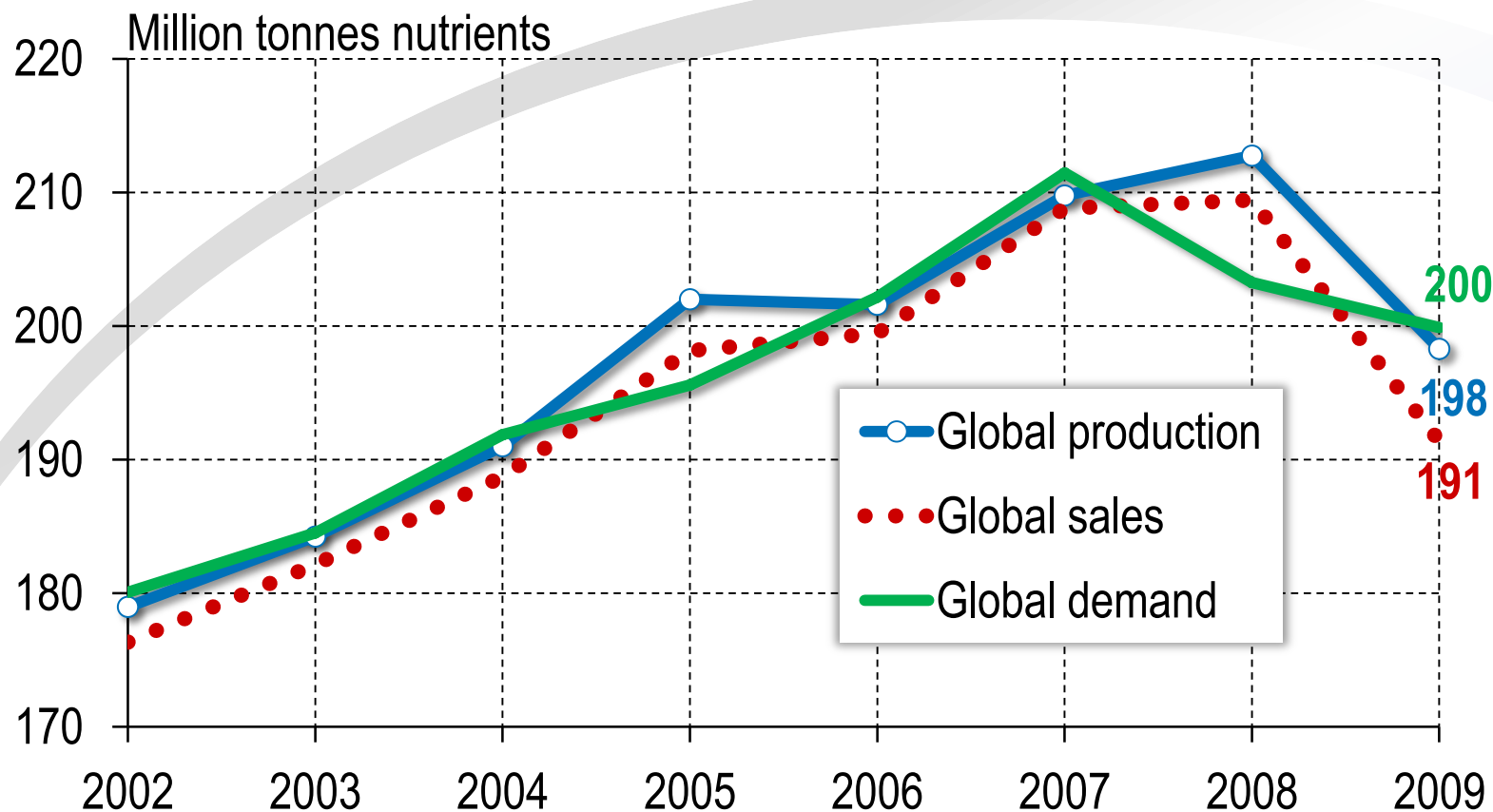
| | 2007/08 | 2008/09 (e) | Change | 2009/10 (f) | Change | 2010/11 (f) | Change |
|-------------------------------|---------|----------------|--------|----------------|--------|----------------|--------|
| N | 100.6 | 99.0 | -1.5% | 100.6 | +1.6% | 103.3 | +2.6% |
| P ₂ O ₅ | 38.3 | 34.3 | -10.5% | 35.4 | +3.0% | 37.6 | +6.2% |
| K ₂ O | 28.7 | 23.1 | -19.8% | 22.0 | -4.5% | 25.0 | +13.5% |
| Total | 167.7 | 156.4 | -6.7% | 158.0 | +1.0% | 165.8 | +4.9% |



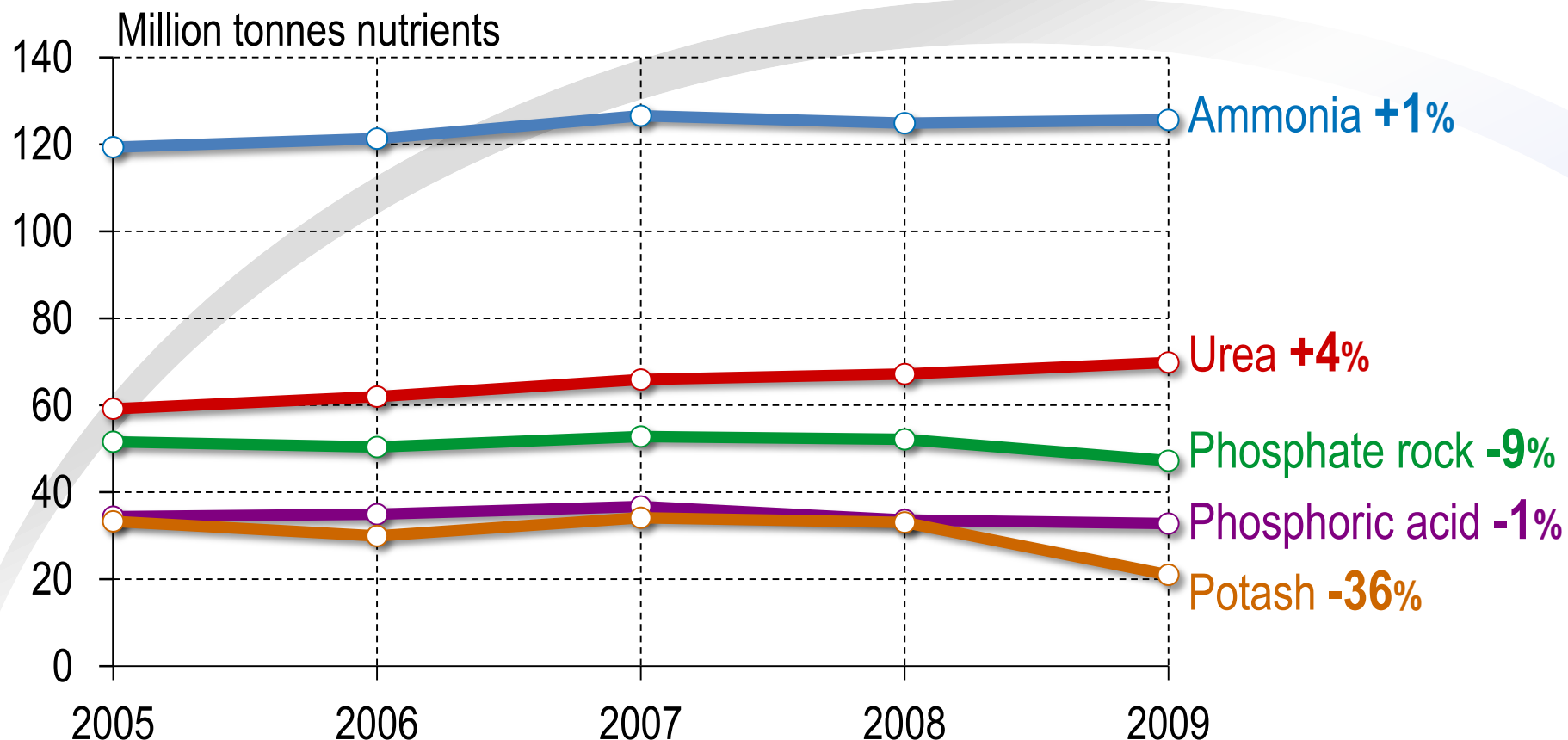
Fertilizer demand by region



Global nutrients supply/demand trends

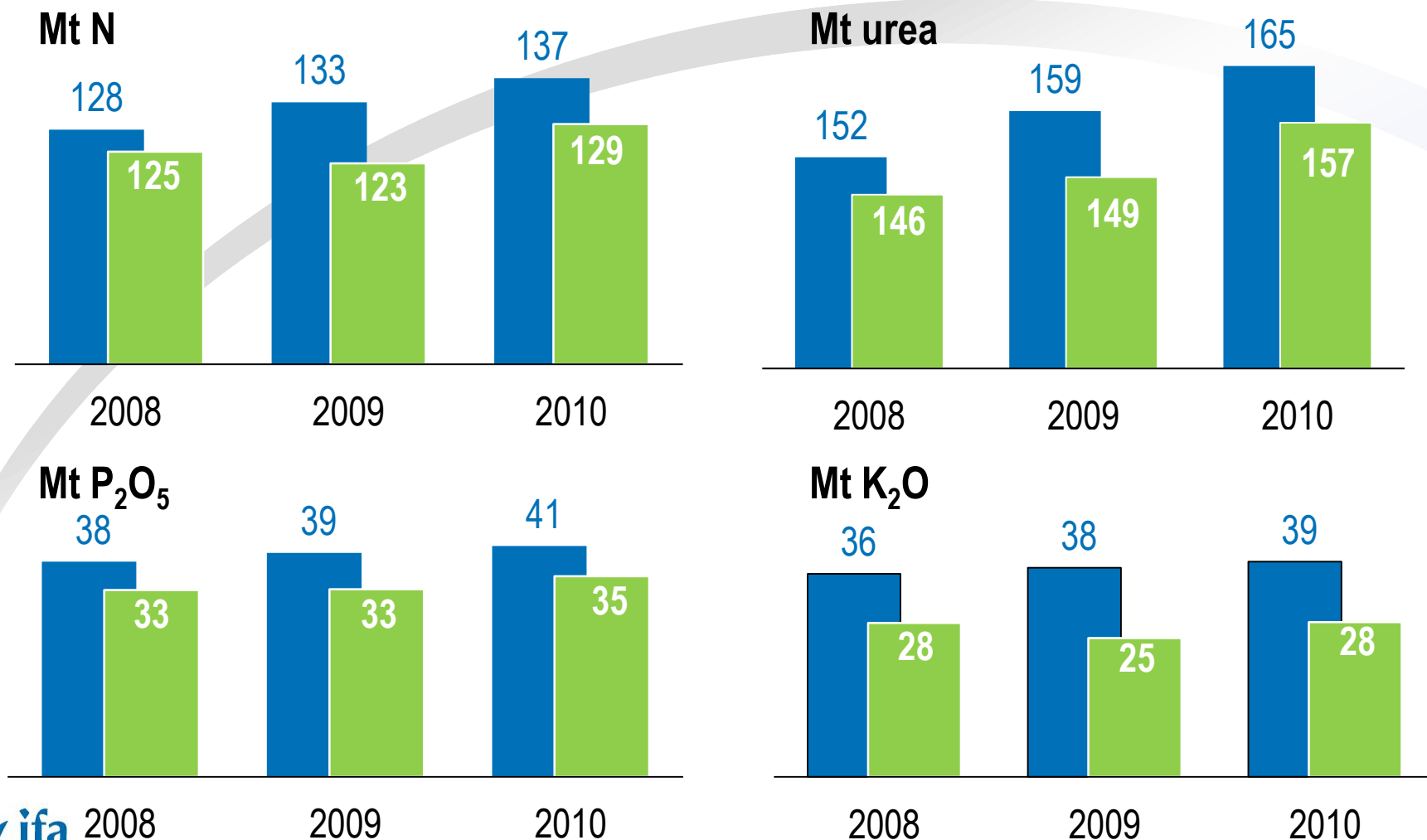


Global production trends, 2005-2009



Global nutrient supply/demand balances

■ Supply ■ Demand



Prospects for 2010

- A recovery in demand and stronger sales prospects
- Current S/D balances: potentially, high surpluses prevailing in 2009 and through 2010
- Limited new capacity outside China and on-going structural changes
- Rising volatility of agri-commodity and energy prices
- Improving market conditions in 2010
- Increases in production and operating rates
- Higher domestic sales and exports
 - A rebound in import demand in Latin America, North America, and South-East Asia
 - Sustained imports in South Asia
 - Potential improvement in Europe and Oceania
 - Uncertainties as regards China



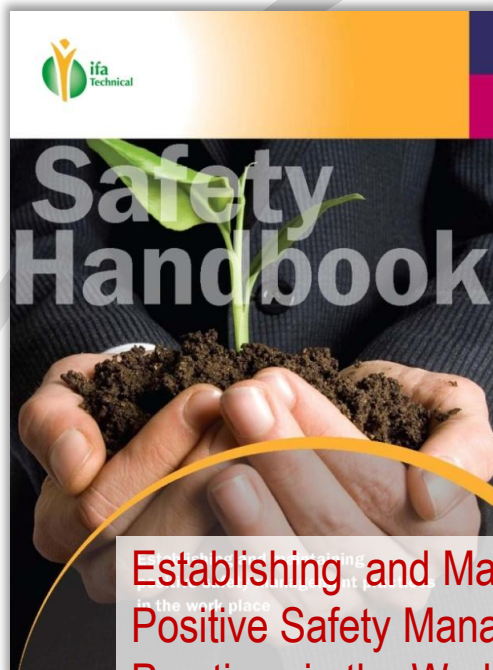


IFA's initiatives...
in enhancing agricultural
productivity sustainably

Product Stewardship...

...improving the efficiency of production, storage, transport and use of plant nutrients sustainably.

“Responsible care across the value chain”



Establishing and Maintaining
Positive Safety Management
Practices in the Work Place

- ➔ A shared business perspective across the value chain
- ➔ Begins with product design and ends with application in the field
- ➔ Requires effective communication among supply chain partners
- ➔ IFA's programme : the producers will be driving the process



Technical innovation



- New breakthroughs
- Best available techniques
- Best management practices
- Fertilizer sampling and analysis
 - Laboratory Quality Assurance Guidelines
 - Recommended Best Practices for the Analysis of Potassium Content in KCl Fertilizers
 - Recommended Best Practices for the Sampling of Dry Bulk Fertilizer Shipments

Improving the efficiency of fertilizer use

Site-Specific Nutrient Management (SSNM)

HOW do we determine

right rate, right place and right time ?

1. Establish a yield target – the crop's total needs



nutrient supply

2. Effectively use existing nutrients

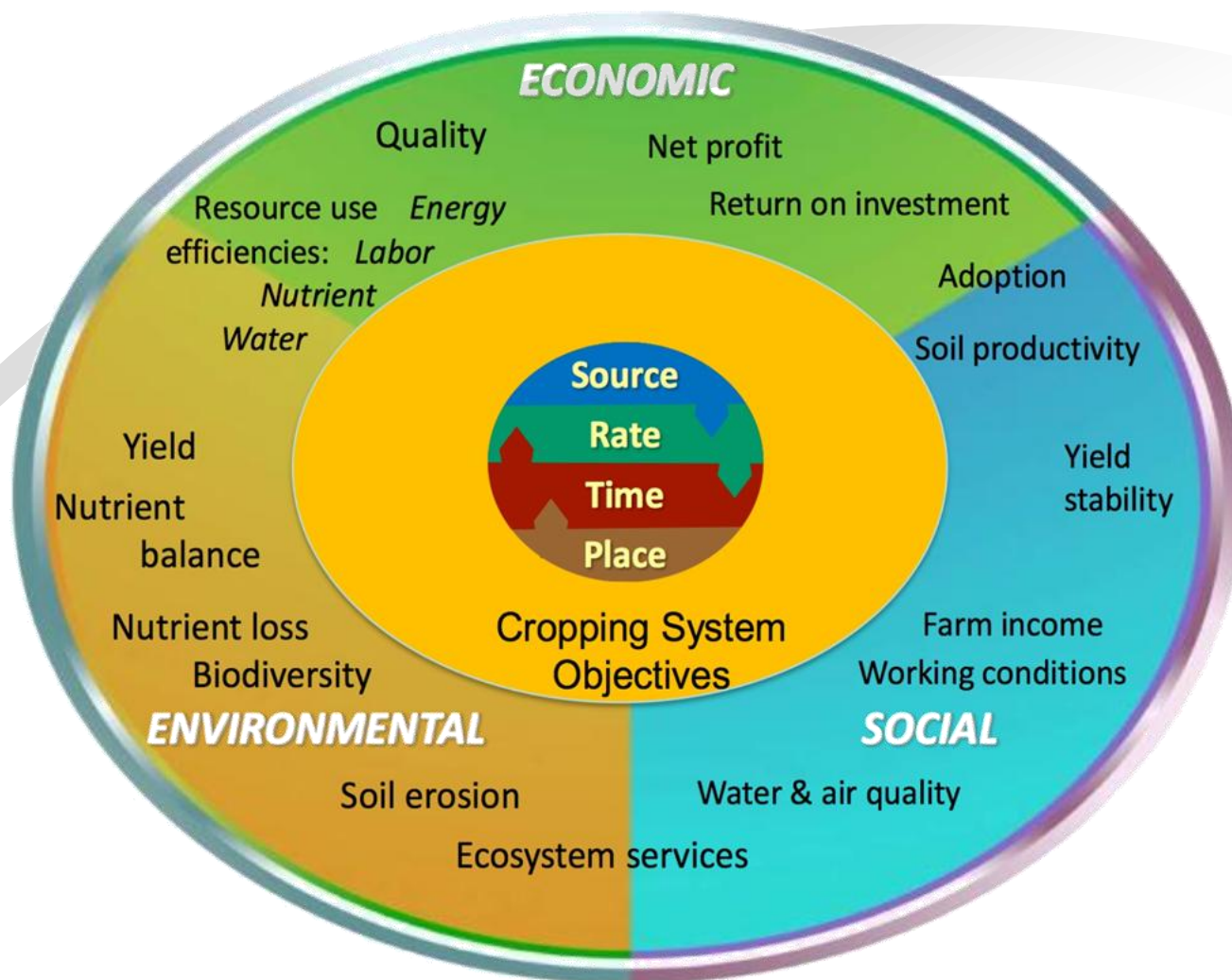
3. Fill deficit between total needs and indigenous supply

- Balanced fertilization
- Site-specific fertilizer application
- Fertigation
- Microbial inoculation
- Products with built-in enhanced efficiency:
slow- and controlled-release fertilizers, urease and nitrification inhibitors



Fertilizer Best Management Practices (FBMPs)

Global Framework



Water Management Initiative

... to develop and promote strategies and best management practices for water and fertilizer/nutrient use efficiency that will improve soil fertility, increase agricultural productivity, and ultimately, improve human nutrition and health.

ON AVERAGE

- 1,000 litres of water are needed to produce a kg of maize
- 1,500 litres to produce a kg of wheat
- 2,500 litres for a kg of rice
- 4,000 litres for a kg of poultry
- 15,000 litres for a kg of beef
- 3,000 litres per person to produce our daily food intake



AFRICA FORUM

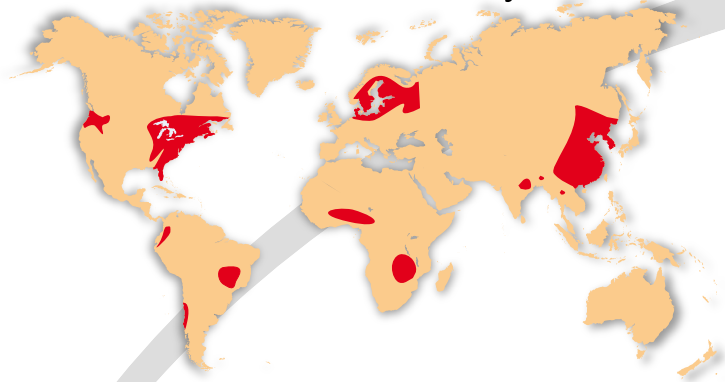
*«Striving for an African continent free
from hunger and malnutrition...
thanks to fertile soils and adequate
agricultural production.»*



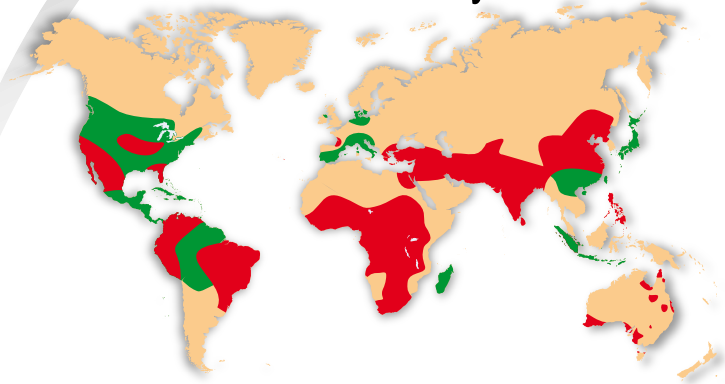
Fertilizer use and human health

... crops are vehicles for nutrients ...

Boron deficiency



Zn deficiency



Solutions to micronutrient deficiencies

→ **Supplementation**

Human health

→ **Food fortification**

Human health

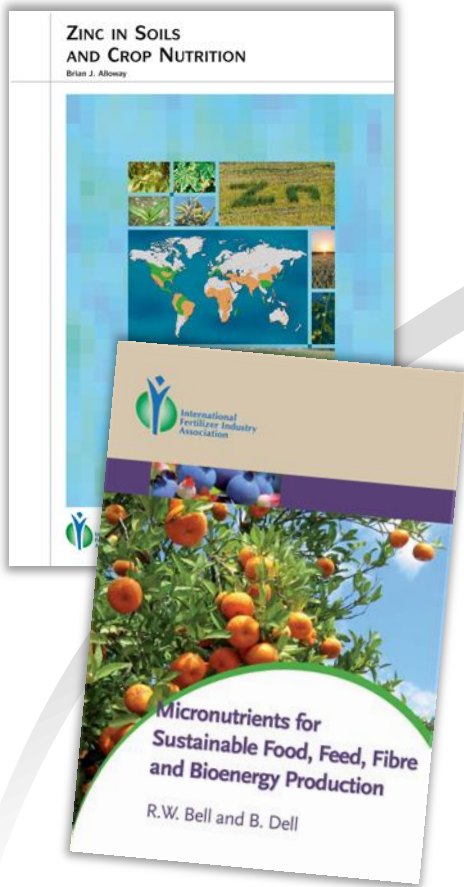
→ **Agricultural strategies**

Crop nutrition and human health

- Breeding (genetics)
- Application of micronutrient enriched fertilizers (agronomic biofortification)



IFA's initiatives on the issue of fertilizer use and human health



- ➔ “Zinc in Soils and Crop Nutrition” by B.J. Alloway
- ➔ “Micronutrients for Sustainable Food, Feed, Fibre and Bioenergy Production” by R.W. Bell and B. Dell
- ➔ Discussion paper on the “Nutrition Security Challenge through Micronutrient Applications”
- ➔ IFA – IPNI publication on “Fertilizer Use and Human Health” (2011)

www.fertilizer.org



Fertilizer Industry's Views: Enhancing Agricultural Productivity Sustainably

Effective last-mile delivery

The industry's strategy to enhance technology and knowledge transfer and adoption by farmers.....

