Trends in Agribusiness and Food Systems
Global Challenges, Local Solutions

IAMA Forum 2009

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Budapest, June 2009

Topics

Food supply challenges

From past to current..... with expected outlook : **turbulent times**

Where to focus on

Use of natural renewable and non-renewable resources

A practitioners' approach:
The Nestlé Roadmap on Sourcing Agricultural Materials

Practices, Processes and Human Resources

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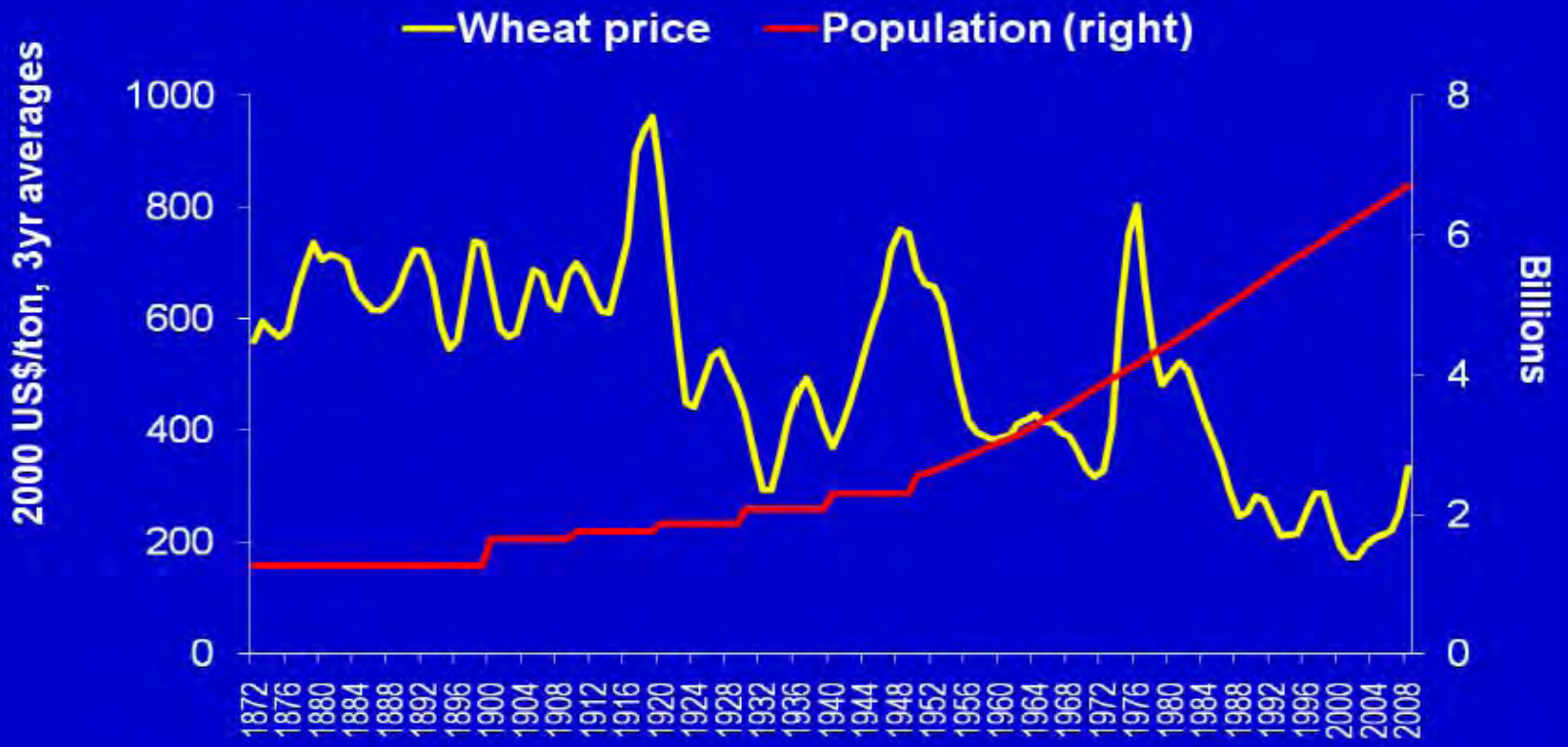
Are we living in unusual times?

1872-2008 prices and population



Sources: J. von Braun, based on data from NBER Macrohistory database, BLS CPI database, Godo 2001, OECD 2005, and FAO 2008; Population data from U.S. Census Bureau Int'l database and UN1999.

Joachim von Braun, IFPRI, May 2009

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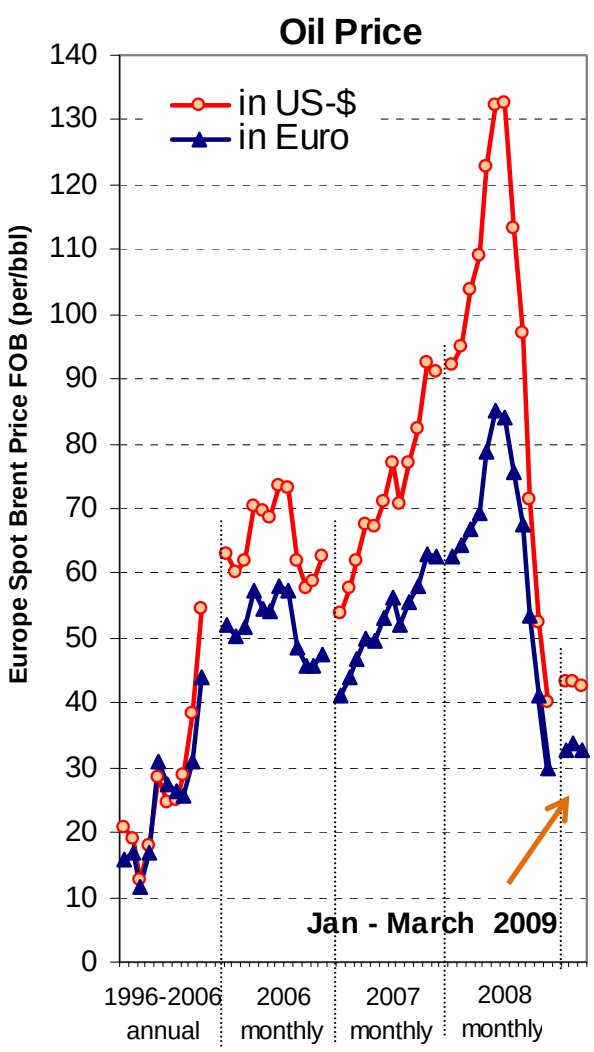
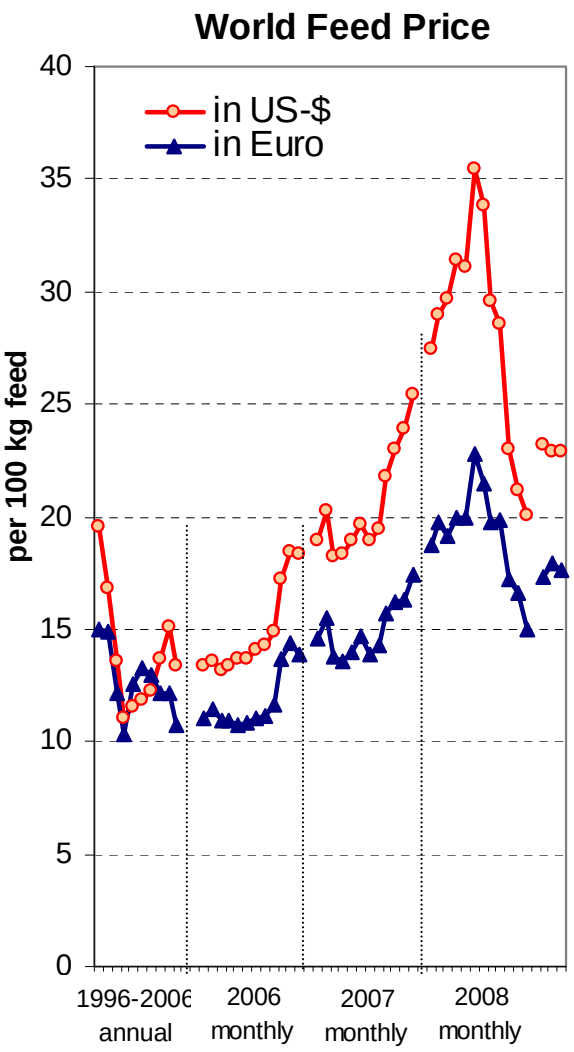
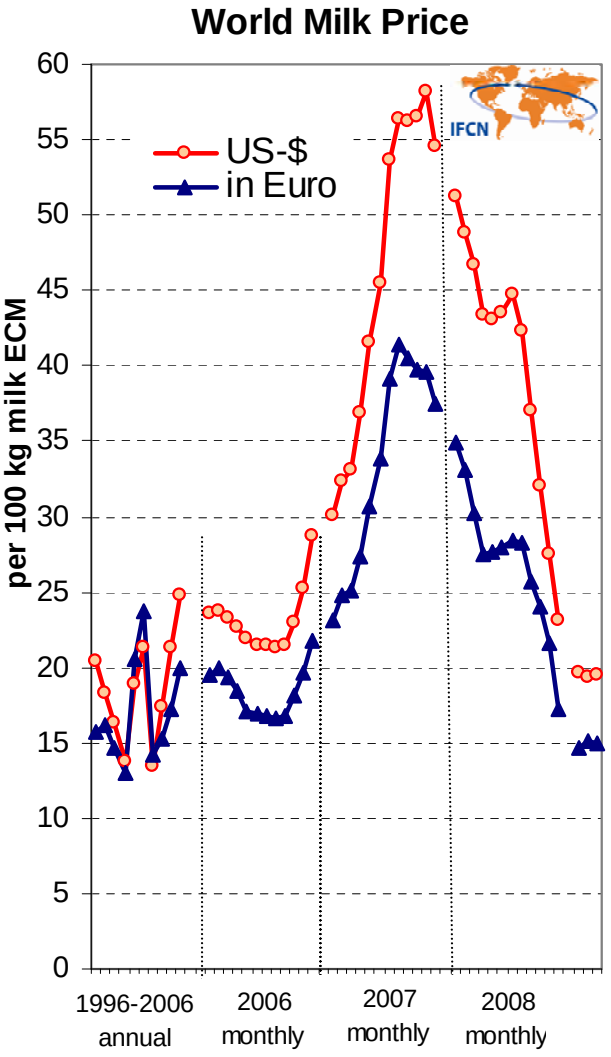
Turbulent times: Commodity - Food - **Price Volatility**







Source: IFCN

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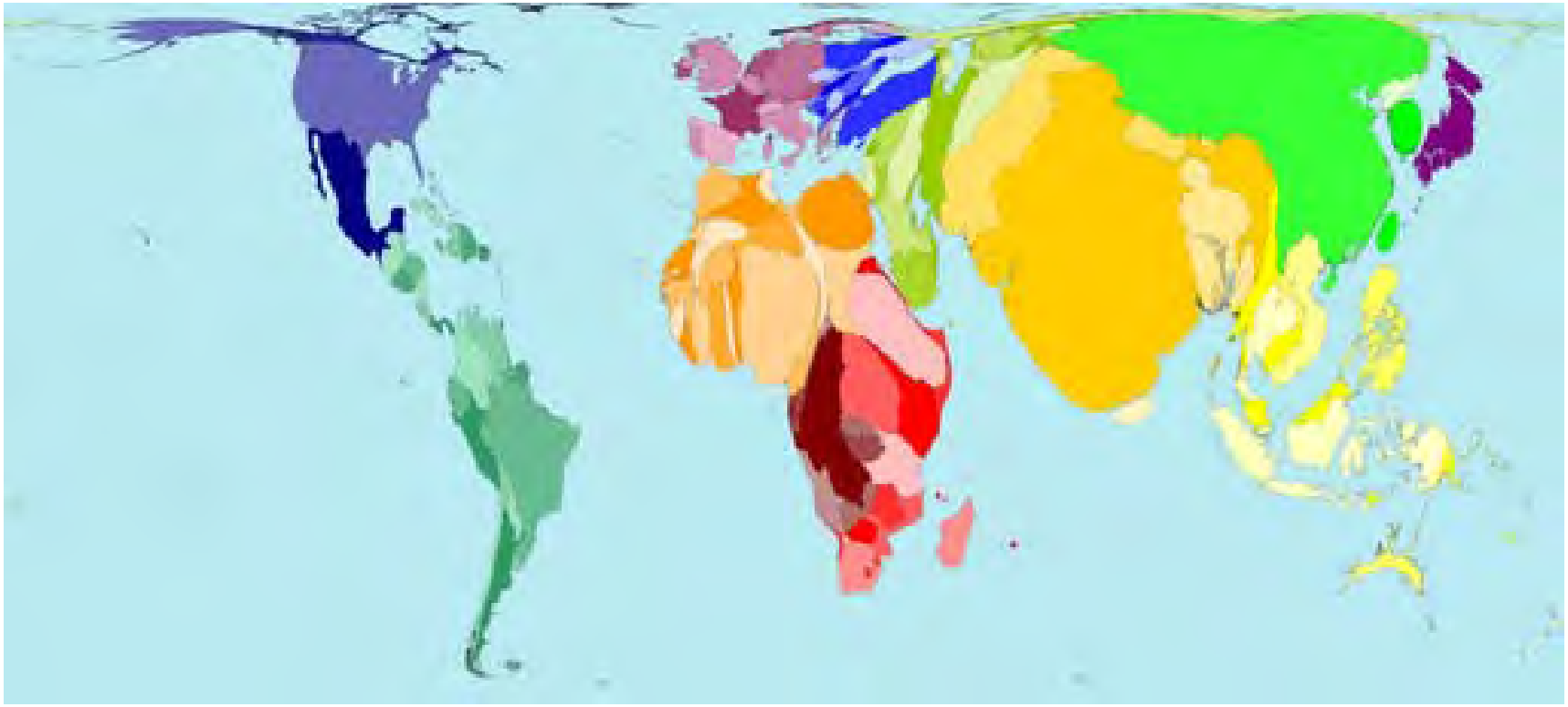
Outlook: World Population 2050E



Source: Worldmapper

By **2050** it is estimated that the earth's human population will be **9.07 billion. 62% of the people will live in Africa, Southern Asia and Eastern Asia -** numerically this is the same as if all the world's current population lived just in these regions**.**
All numbers shown here are estimates - estimates are never perfect.

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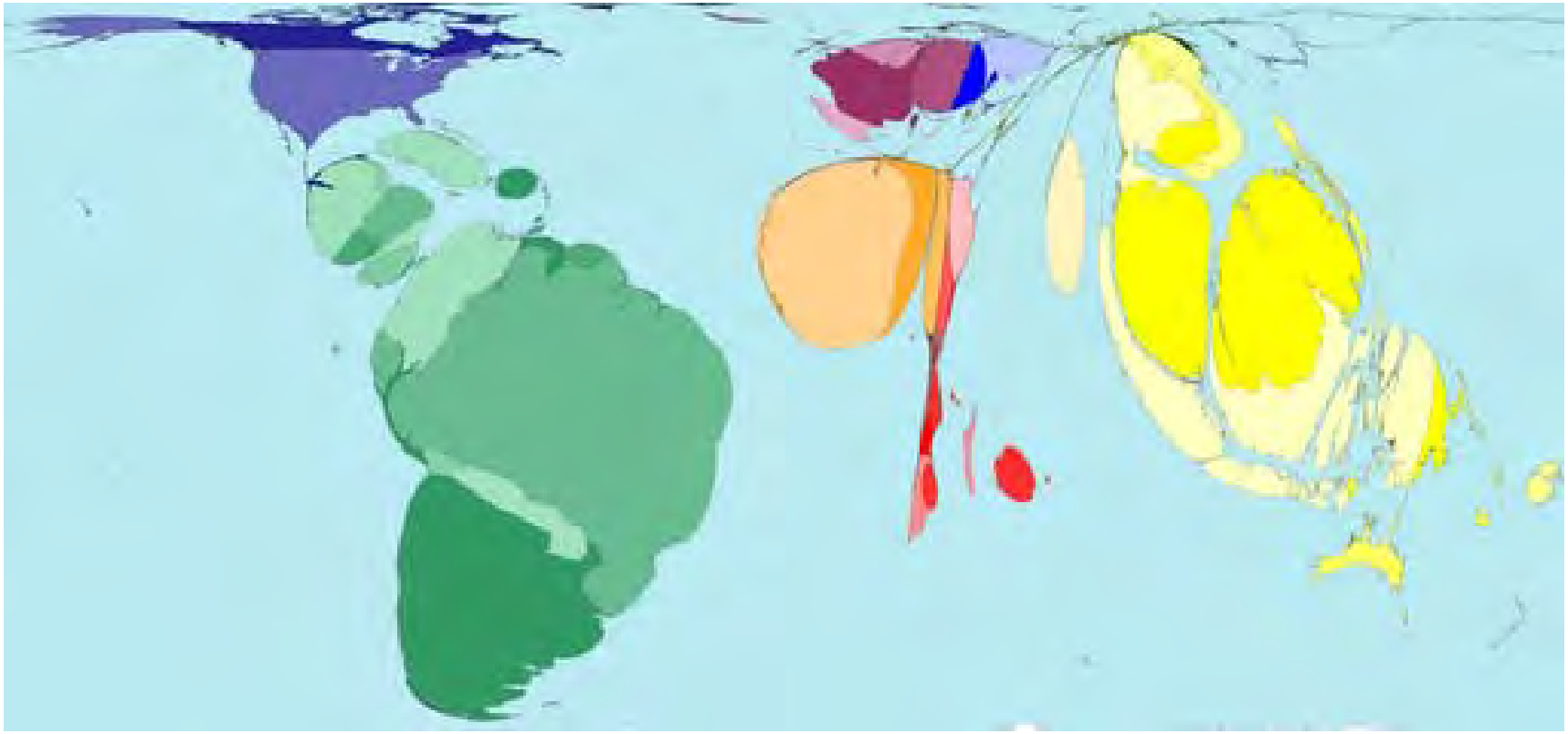
Food / Groceries Exports (2007)



Source: Worldmapper

Groceries include sugar, honey, cocoa, chocolate, tea, mate, coffee (a tea-like drink) and spices. Almost **half of this category,** when measured in US$, **is oils from vegetables and meats.** Net exports including commodities tend to come from more southern latitudes (2007).

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Groceries Imports (2007)

Source: Worldmapper

62% of all territories have net grocery imports, which means that the remaining 38% meet their demands (2007).
Net exports tend to come from more southern latitudes: Asia Pacific and South America. There are however anomalies such as the United States, Canada and France. Further, Southern Africa has neither large net imports, nor large net exports.The highest value of net grocery imports is to Japan. Imports to Japan are one and a half times the value of those to the second largest importer, China. Further,the population of China is ten times larger than Japan. So, **per person** living there, **Japan imports (net) sixteen times more groceries than China**.

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Constraints: Land / Water / Energy

How can we double calories output by 2050, where...

- There is at most **10% more arable land** available that isn't presently forested or subject to erosion or desertification - and degradation of many soils continues,
- **Water** for agriculture in some parts of the world is already today **scarce,**
- Most **production systems** are dependend on **heavy fossil-energy based** inputs e.g. fertilizers, chemicals, transport, cooling, packaging, etc.

  ....????

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Expected Demand triggers Change in Production Methods and Production Systems (1/2)

Productivity and efficiency **increase** at farm level using natural resources sustainably means to produce with **no waste, no pollution** and **no destruction,** staying competitive, meeting global food needs and offset impacts of climat change and climat policy.

Most critical topics for volume and quality growth are:

Water, energy, technology (i.e. genetic potential, fertilizer,etc.), **knowledge** and **know-how** (farming practices and management)

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To focus on...

LAND

WATER

ENERGY

CLIMATE

PEOPLE

...to ensure supply we have to smarter use natural ressources,

- Not wasting
- Not polluting
- Not destroying

...and a good start is by erradicating the worst and promoting the best of

Agricultural Practices

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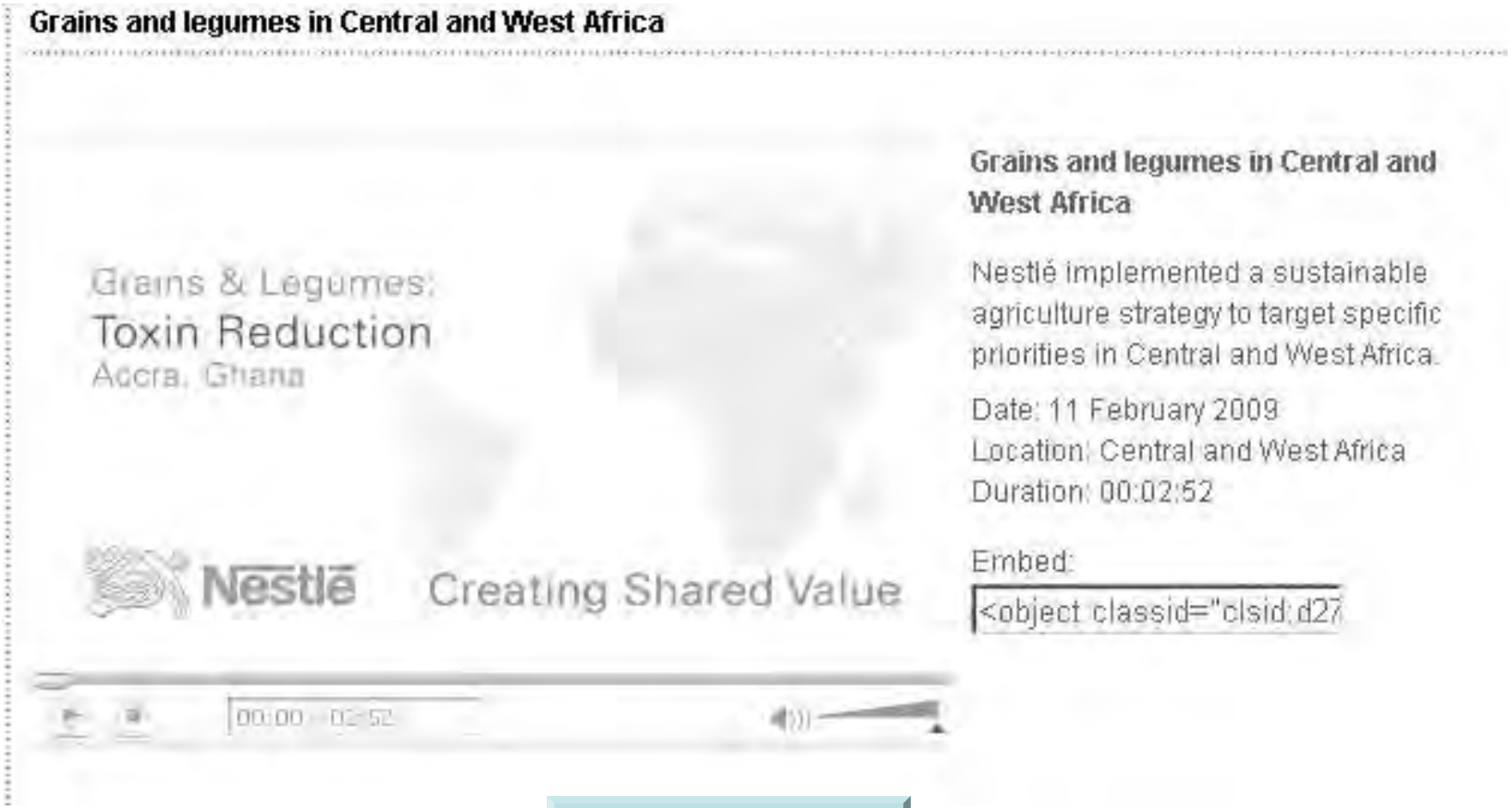
Watch achievements of technical assistance to farmers: Ghana



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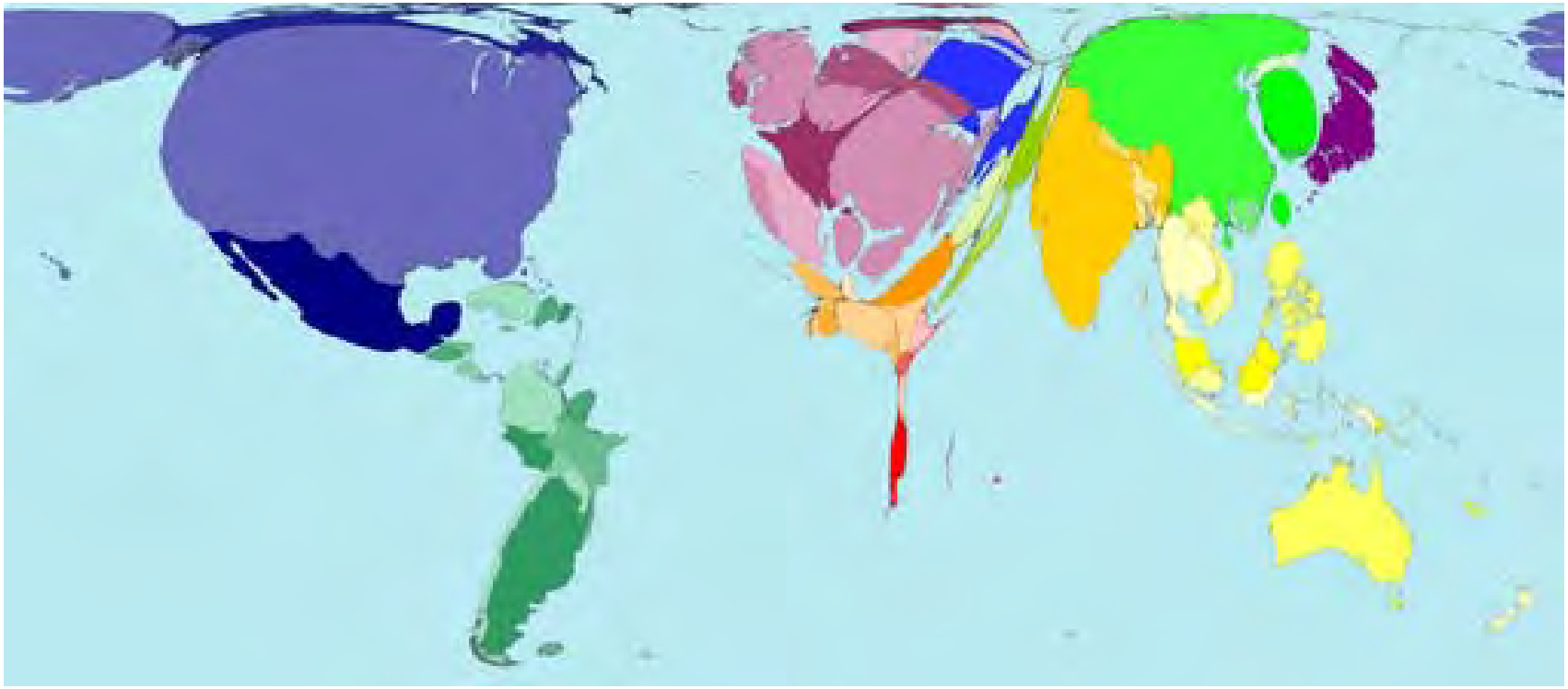
Primary Education Spending



Source: Worldmapper

In 2005 US$784 billion were spent on primary education around the world, when adjusted for purchasing power.
The territory where the **largest amount was spent** is the **United States; the spending was 28%** of all spending in the world.
In contrast, in Nigeria only 0.28% of all world spending was spent on primary education.

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Expected Demand triggers Change in Production Methods and Production Systems (2/2)

Re-vitalizing extension services (**Primary Education**) to disseminate better production practices and engaging in technology transfer to farmers have biggest impact on both:

- productivity, volume and quality growth &
- substantial income securing!

...Creating Shared Value – getting ensured supply...

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Benefits of Adequate Roads and Extension Services

Why do road and extension services matter so much?

- Roads provide a **critical link to local market** towns, where most economic activity takes place (Dercon and Hoddinott, 2005)
- Half of households purchasing crop inputs do so in local market town
- Most artisanal products (especially those produced by women) tend to be **sold locally**

Improvements in road quality...

Increase of purchasing crop inputs by **30%,** and
Increase of women selling artisanal products by **39%**
Probability to link into interregional-international supply chains by **84%**

Source: IFPRI

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Return on Extension Services

A ERHS survey asked farmers (from selected African countries) to describe the most important activities of extension agents (2006).

Answers

- Being a **source of knowledge** about use of modern inputs (production methods),
Ranked highest by 72% of farmers
- Being the source of **knowhow** about **better cultivation practices**
Ranked highest by 46% of farmers

Many case studies on Improvements due to extension services are available and prove correlation of visits by extension agents and farms' productivity increase,
e.g. **cocoa productivity rose almost three-fold** between 1994 and 2004 on selected project..

- **Rates of return (ROR) to extension worldwide are between 13-500% (more than research (R&D) !!!!)**

Source: IFPRI

Extension is a cost-effective tool

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Watch achievements of technical assistance: Pakistan

Lady Livestock Workers, Pakistan

Lady Livestock Workers, Rural Development

A Nestlé sponsored project helps women in rural Pakistan to become livestock workers. The programme teaches the women about getting the best milk yields possible from their cattle.

Date: 25 August 2008
Location: Farooqa, Pakistan
Duration: 00:03:17

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The Nestlé Roadmap of Sourcing Agricultural Materials

SAIN projects are **creating value** in the areas of:

- Farm income generation
- Crop and yield improvements
- Animal health issues
- Logistic support / Transport
- Water management & irrigation
- Farm management guidance
- Technical training
- Etc.

➔ **Rural Development** and **Water**

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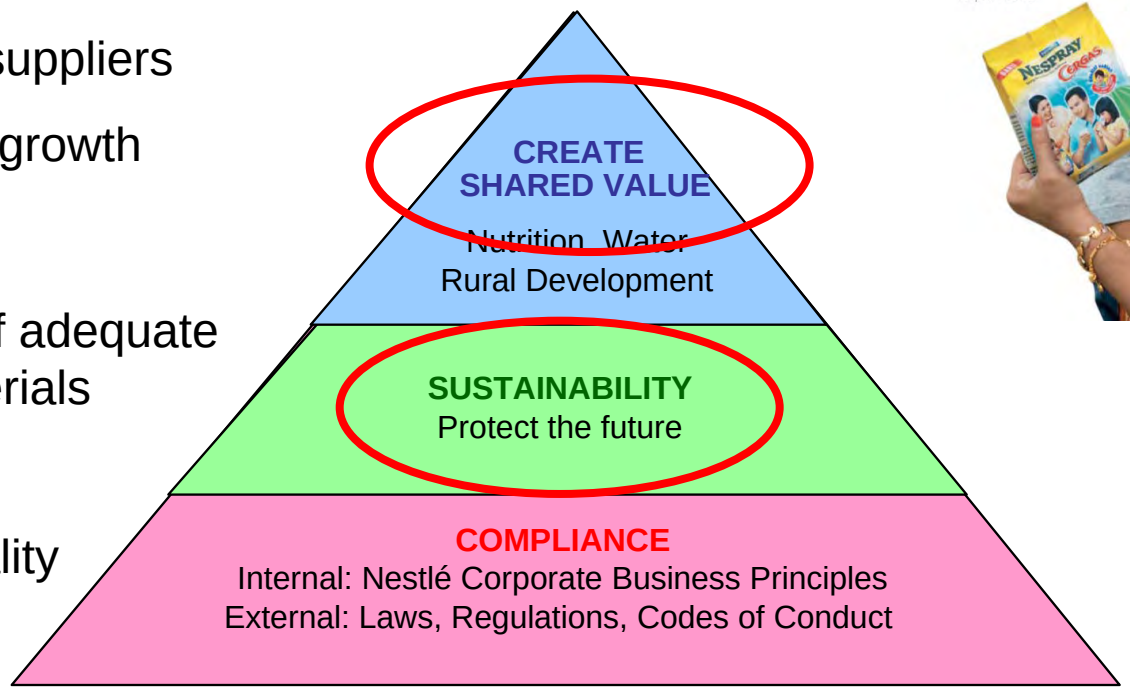
Wrapping up

Develop farmers & suppliers

building capacity for growth

Secure availability of adequate agricultural raw materials

Ensure safety & quality of raw materials



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Conclusions

- Matching expected food demand requires **carefull use** of natural resources to start at **farm level**

- Efficient and effective resource use implies knowledge and knowhow:
  Training farmers, securing minimum skills and competences to combine technology with better practices is a must

- **Open food trade system** to supply consumers compulsory

- **Back to basics** in rural development inevitable to achieve food security, nature stewardship and social peace

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Creating Shared Value and Sustainability are the most important concepts in sourcing agricultural materials at Nestlé.

The future & the knowledge are here.
It's just not widely distributed and applied yet.

Thank you for your attention!

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