

Tokyo – 12 November 2009



Feeding the world in 2050



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Overview



- **The challenge**
- **The strategy**
- **The way forward**





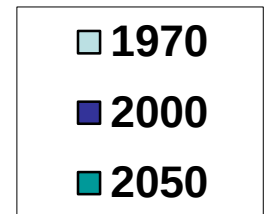
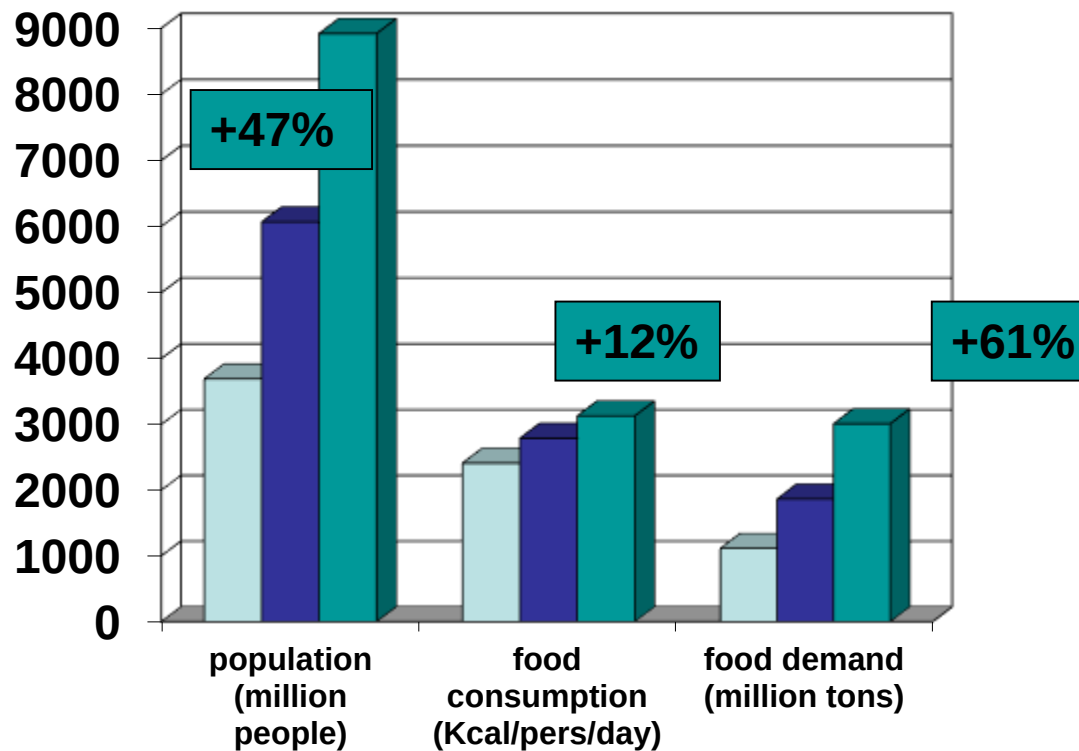
The Challenge



Hungry Planet: What the World Eats by Peter Menzel 2005



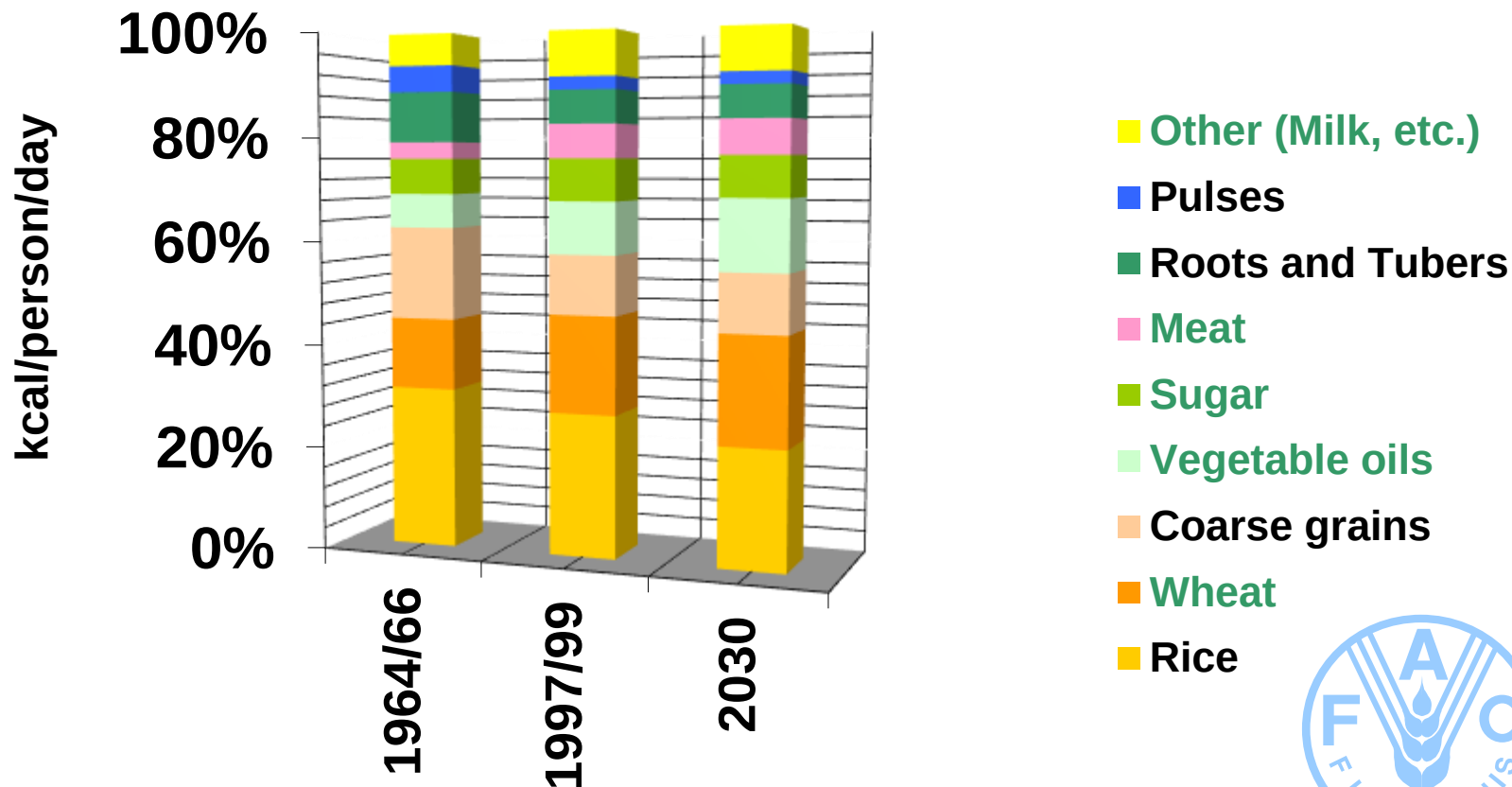
Food demand is growing as result of population growth & per capita consumption...



... and a shift towards a more nutritious and balanced diet

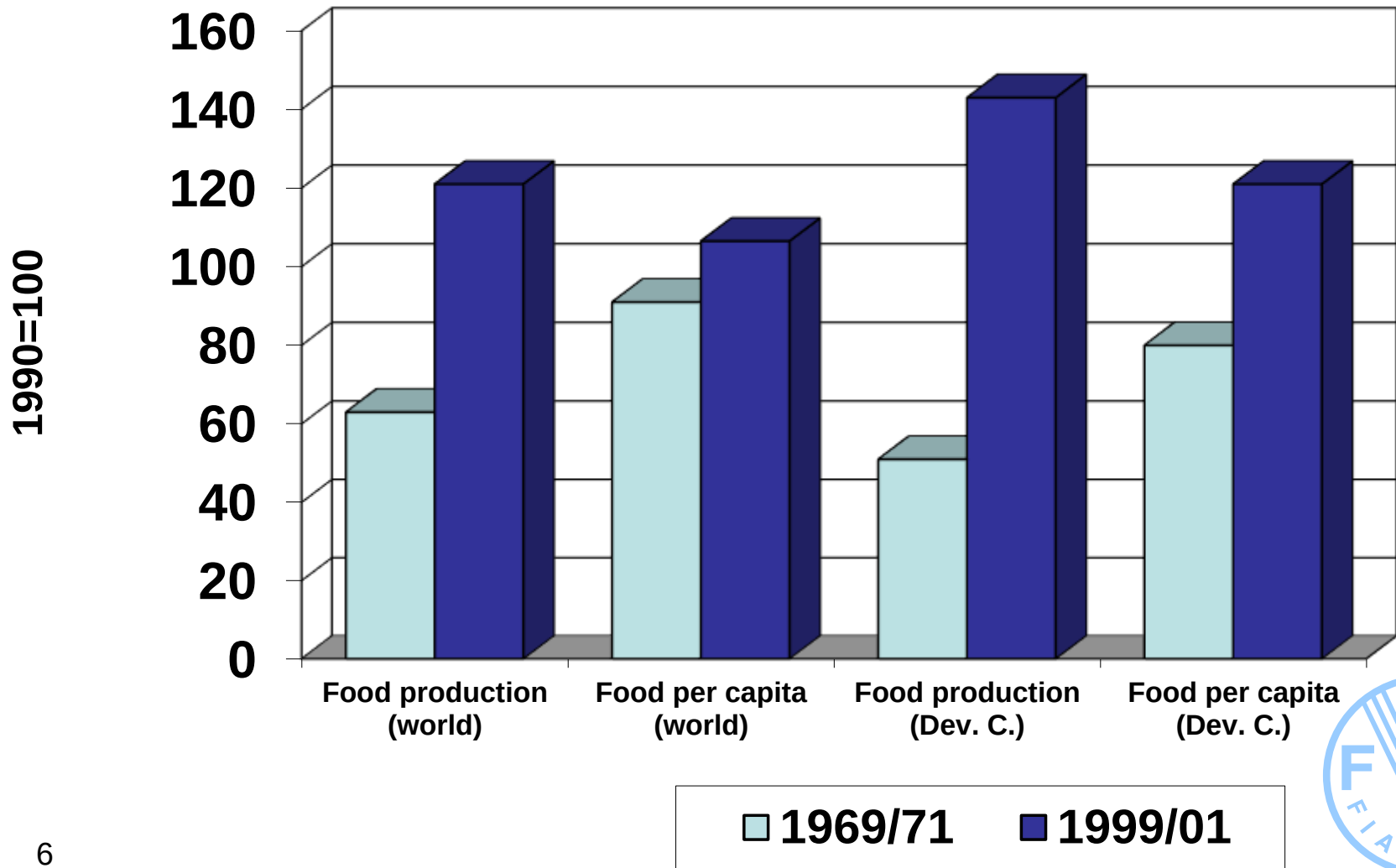


Food consumption per person and day
in developing countries





Food production increased faster than population over 30 years



Development of agricultural production



- The Green Revolution allowed to feed 6.4 billion people,
- improved the livelihoods of several million farmers
- saved land
- increased per capita food availability > 18% from mid '90s.



But:

- 1,020 million still undernourished
- 1,2 billion absolute poor
- Vast areas excluded
- Natural resources base eroded





The Challenges We Face

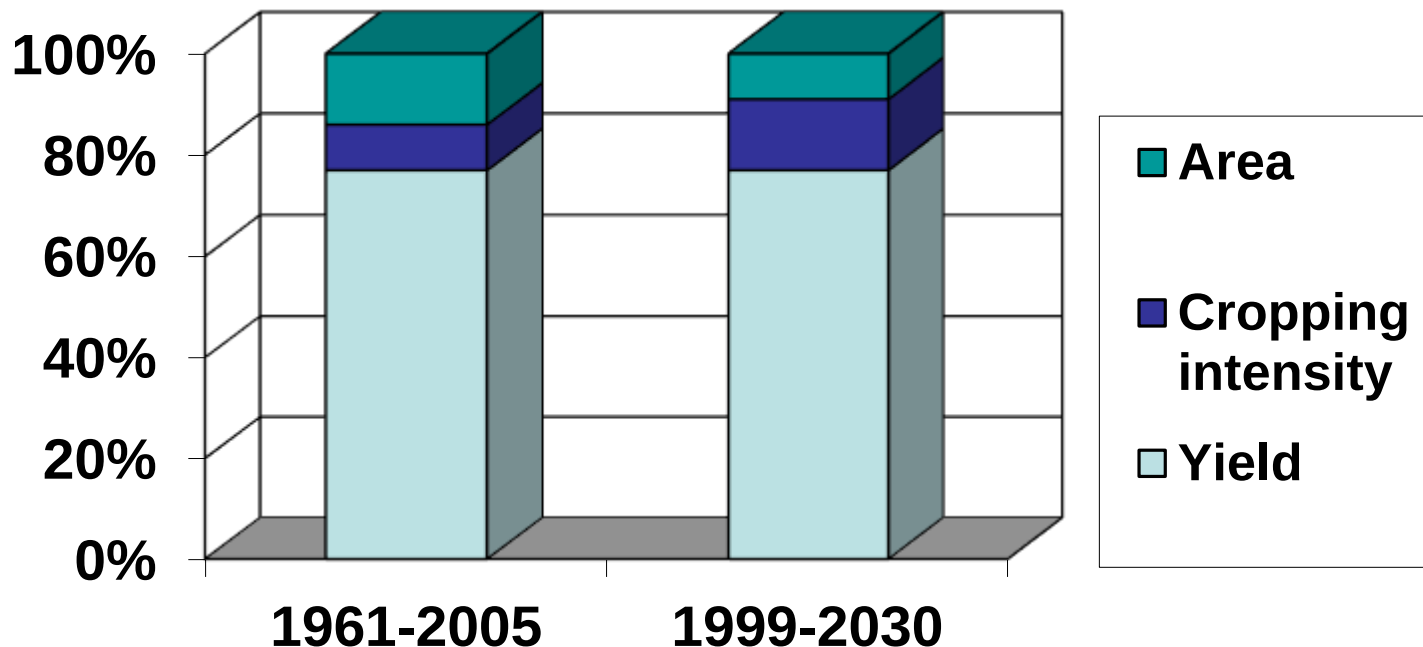
- To feed 9+ billion people in 2050, global food production must increase by 70% -- 80% to come from yield increases and 20% from area expansion
- Developing countries must almost double production – with little possibility of land expansion in many countries
- Yield increase rate for cereals declining: 3.2% in 1960 to 1% in 2050
- Land area (per cap.) declining: from 4.3 ha in 1961 to 1.5 ha in 2050
- Climate change likely to add greater and unpredictable stresses
- Increased demand for better variety, quality and safety of agricultural products



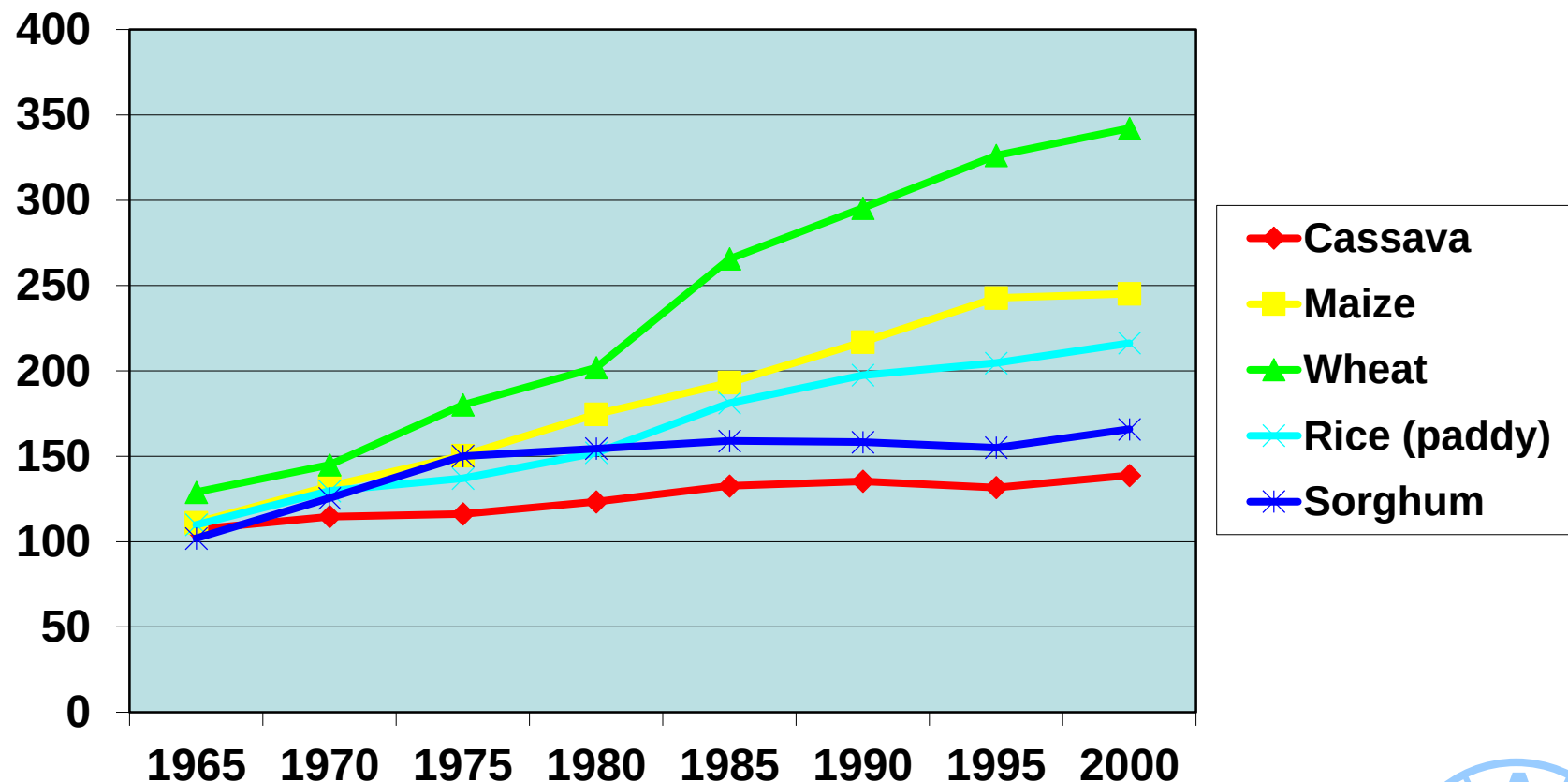
The growing food demand will be met mainly by increased yields



Sources of growth in crop production (%)



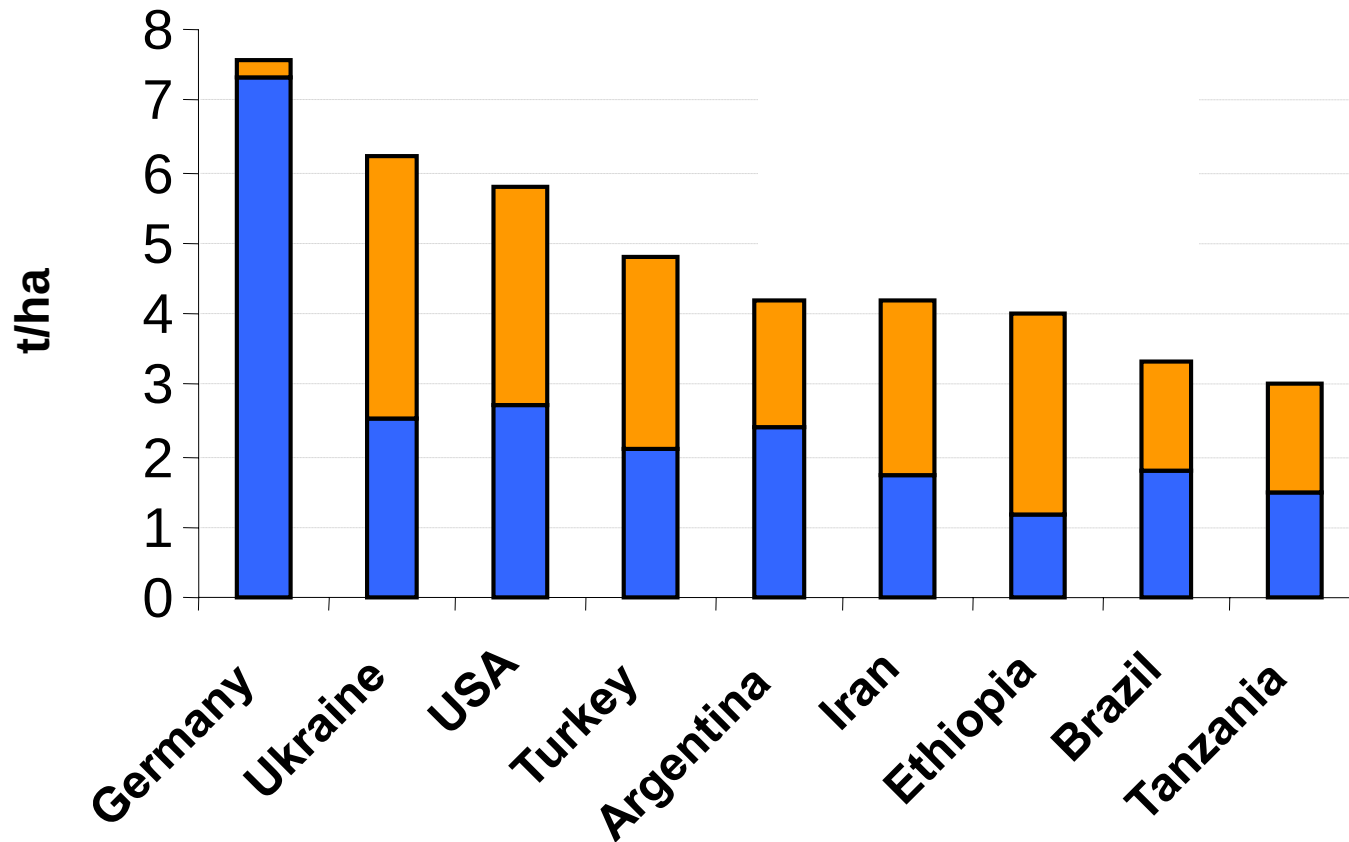
Yield increase of selected crops in developing countries (% over previous period)



Exploitable yield gaps: actual versus obtainable yields



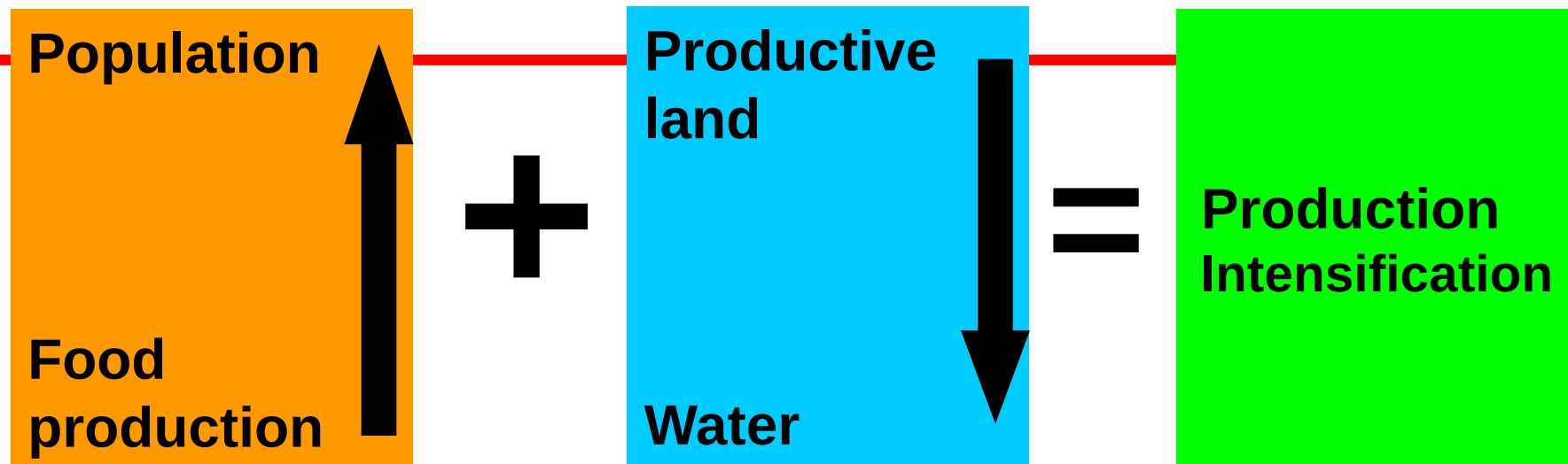
Wheat (high input, suitable land, rain-fed)



source: FAO (2002)



Agricultural Chemicals in context



- Stressed crops are more susceptible to pests & diseases
- High chemical use = more expenditure and less income for farmers
- Poorly managed soils = erosion and land degradation
- Excessive chemical use = water & land contamination
- Chemicals in the environment impact ecological services (pollinators, predators)
- Economic constraints limit advice to farmers



The Strategy



Sustainable Intensification of Crop Production



- **Increase crop productivity and quality for improved food security and livelihoods**
- **Focus on smallholders and real farmers**
- **Technologies and policies for climate change adaptation and mitigation**
- **Improved resource-use efficiency**
- **Conservation and enhancement of natural resources and ecosystem services**



Organic horticulture in Eritrea – but no market



FAO is:

- **Supporting urban & periurban horticulture**
- **Promoting farmer training in agroecological systems**
- **Helping to develop markets**



National and Regional Policies & Strategies for Intensification



- **Ecosystem management approach to intensification**
- **Information provision and capacity building**
- **Improved varieties, conservation agriculture and IPM**
- **Horticulture for improved nutrition and income**
- **Development and implementation of national and regional food security programs**
- **Development/ identification of efficient tools and indicators to measure ecosystem services**





Ecosystem services



- Bees pollinate 30% of our food
- Bees & other pollinators are disappearing
- FAO working to protect pollinators



Reduced risks from transboundary pests and diseases

- **Development and implementation of international Standards for Phytosanitary Measures - IPPC**
- **Provision of forecasts and other information on locusts to more countries - EMPRES**
- **Provision of information and services for control of major non-locust transboundary plant pests & diseases**
- **Controlling pests with more eco-friendly measures (e.g., Sterile Insect Technique, Biopesticides)**
- **Assisting countries with capacity building and in contingency planning**



FAO coordinates

- Monitoring locust breeding
- Control efforts
- Biopesticides for locust control
- Managing pesticide stocks & quality

Locusts 





Reduced risks from pesticides

- Promote life cycle management of pesticides
- Enhance national capacity to implement Code of Conduct on the Distribution and Use of Pesticides
- Provide JMPR, JMPS and JMPPM functions with WHO
- Quantification and elimination of obsolete pesticides
- Promote use of Integrated Pest Management
- Encourage Members to adopt and implement Rotterdam Convention





Obsolete pesticides



FAO helps countries to:

- **Identify quantities and risks from obsolete pesticides;**
- **Remove and safely destroy pesticides**
- **Clean contaminated sites**
- **Build capacity to improve pesticides life-cycle management**



Plant Genetic Resources & seed systems

- Support IT-PGRFA and encourage Members to join it
- Assist countries develop national PGRFA strategies, policies, and information sharing mechanism for implementation of Global Plan of Action for PGRFA and seed systems
- Enhance national capacity in conservation and use of PGRFA, including through national and harmonized seed systems
- Capacity building for implementation of community level management of PGRFA and seed systems





Seeds

FAO helps countries to:

- **Research and develop new crop varieties (High yield, resistance (drought, disease))**
- **Improve seed policies and legislation**
- **Regional harmonization of seed rules and regulations**



The Way Forward



Helping countries to intensify production



- Mobilize resources: **Will donor countries increase ODA to Agriculture?**
- Country focused
- Identify stakeholders
- Inclusive needs assessment
- Ensure sustainability through farmer focused ecologically based methods





The Way Forward

- **FAO Plant Production and Protection Division is developing this strategy now**
- **Contact mark.davis@fao.org**

