Feeding the world and reducing food insecurity after the crisis: Challenges for agricultural development policies

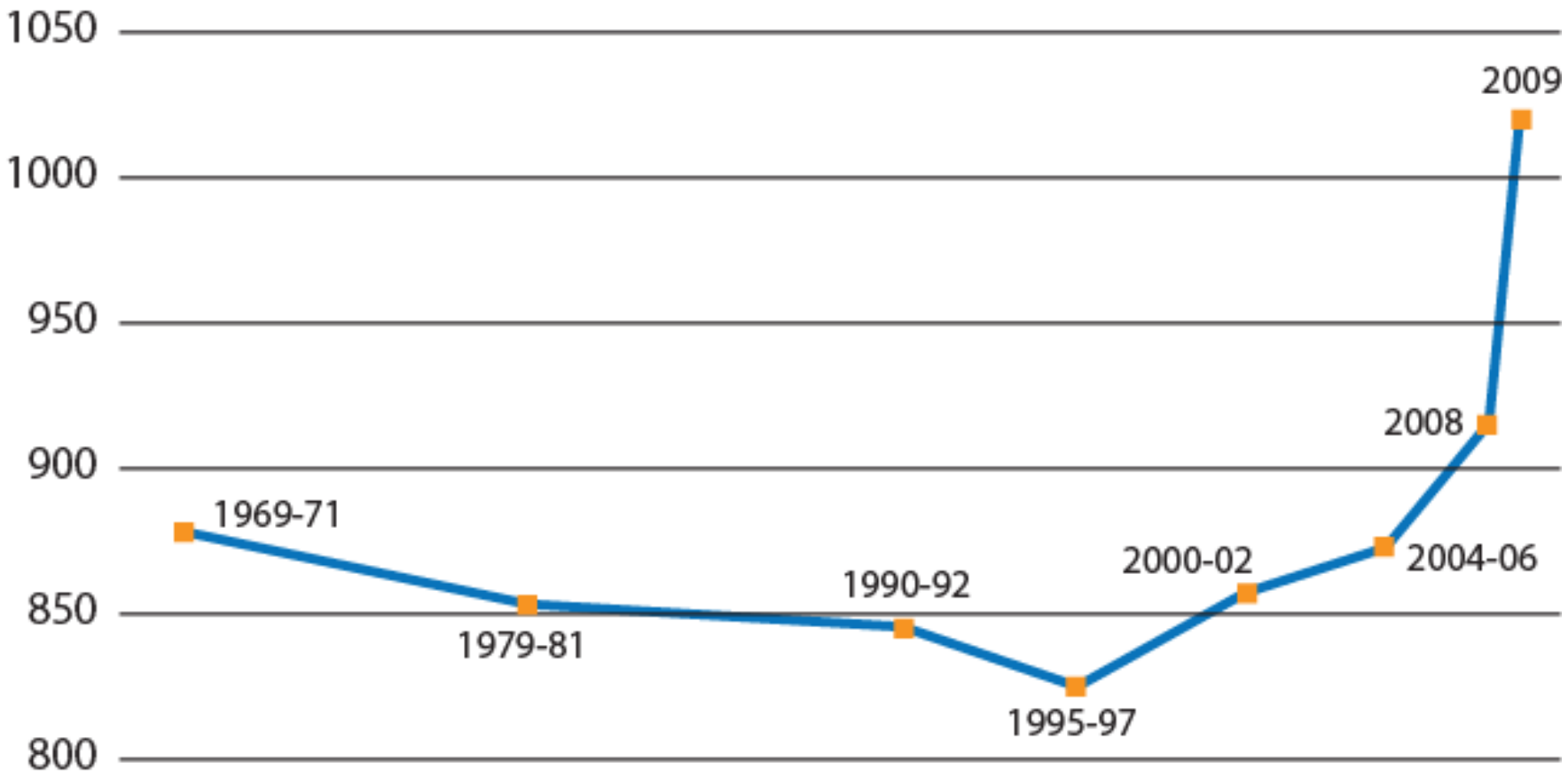
Alexander Sarris
Director, Trade and Markets Division
Food and Agriculture Organization of the United Nations

Presentation at the IDGM Launch Conference, Paris
November 6, 2009

Plan of Presentation

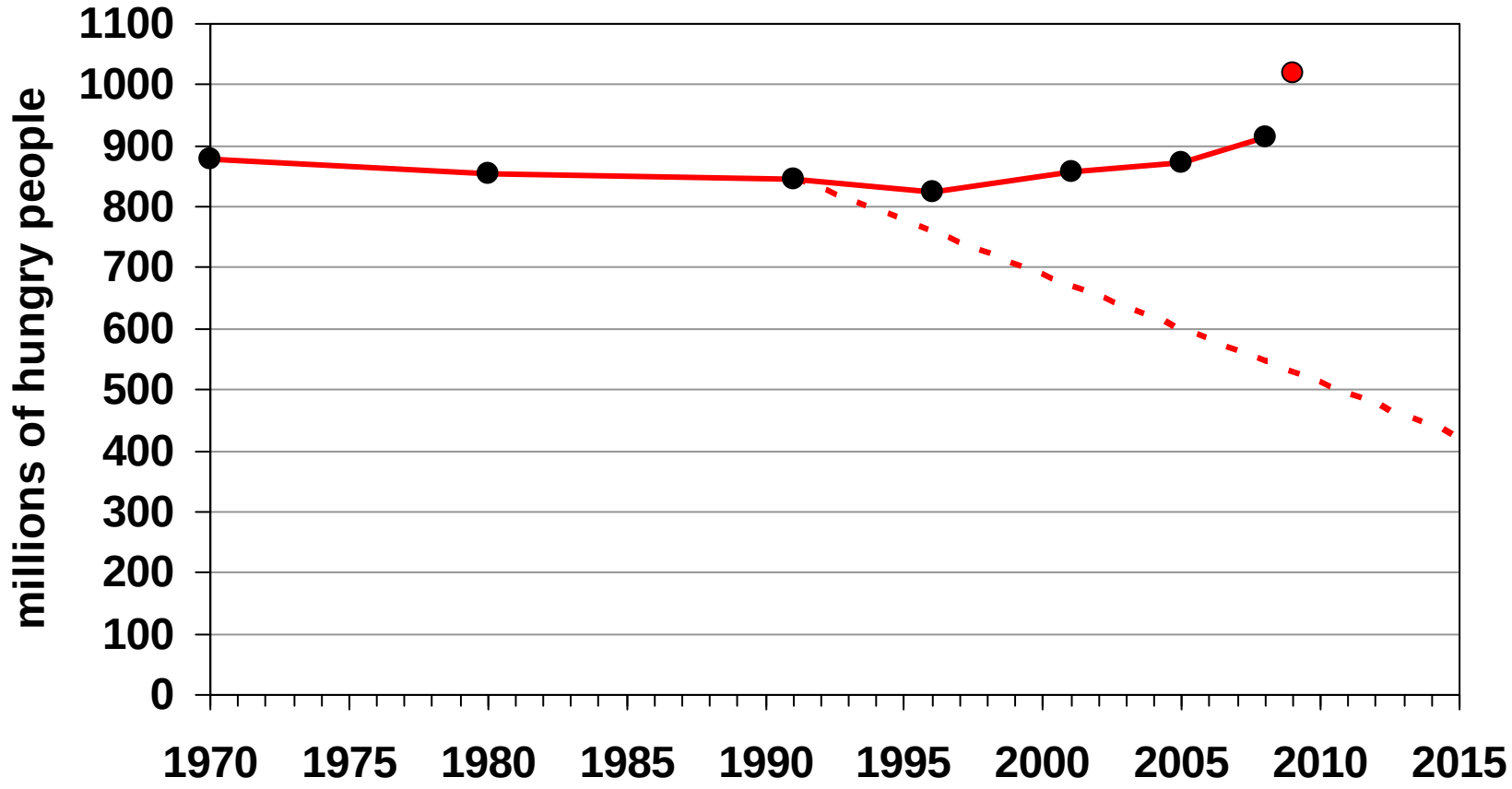
- Hunger in the face of crisis
- Agricultural development, poverty and the crisis
- Challenges to feeding the world in the future
- Climate change and food security
- New factors that will affect global agricultural markets in the medium and long term
- Challenges for agricultural policies
- Policies to assure food imports in times of crises

Recent estimates of trends in world hunger indicate reversal of gains of last three decades



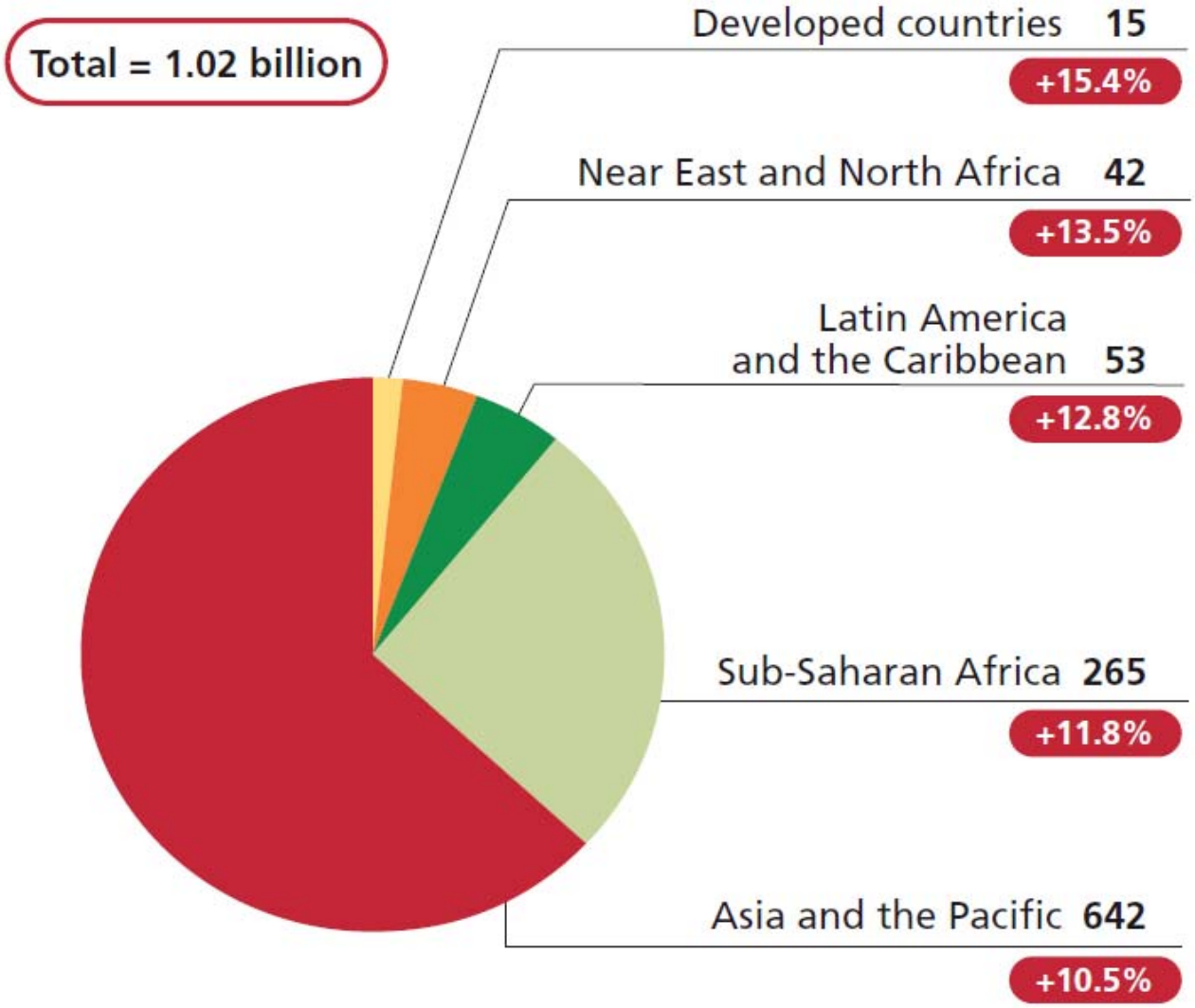
Source: The State of Food Insecurity in the World, FAO (2009)

1.02 billion hungry people in 2009 and MDG goals unlikely to be met (dotted line is MDG target)



Source: FAO 2009

Where do the hungry live?



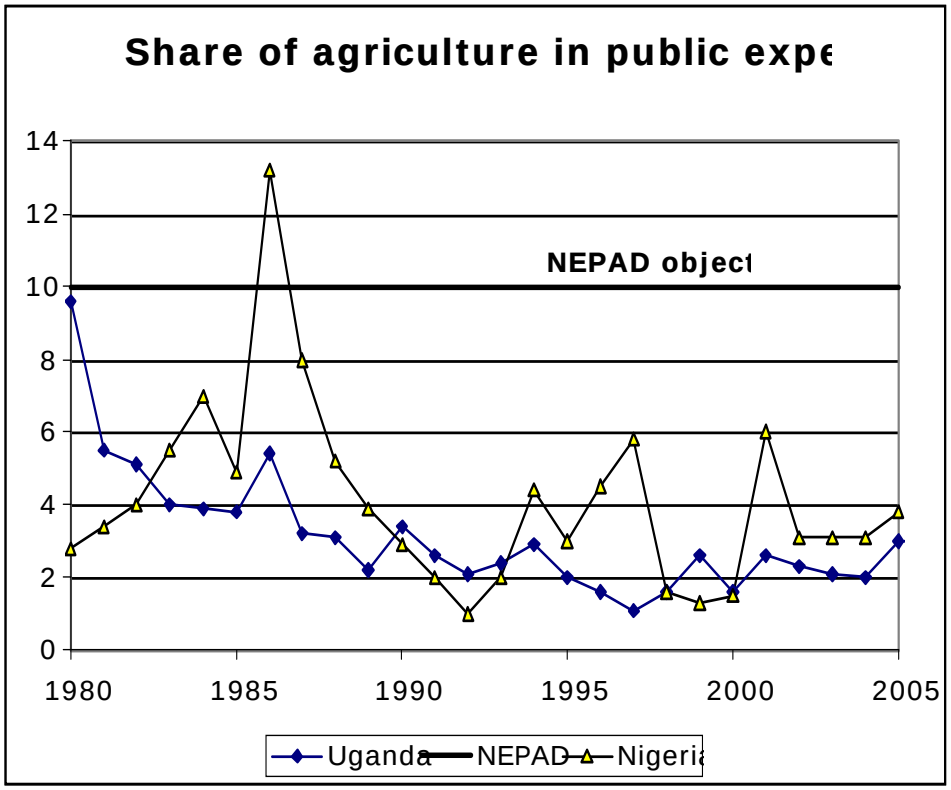
Global economic crisis hits developing countries

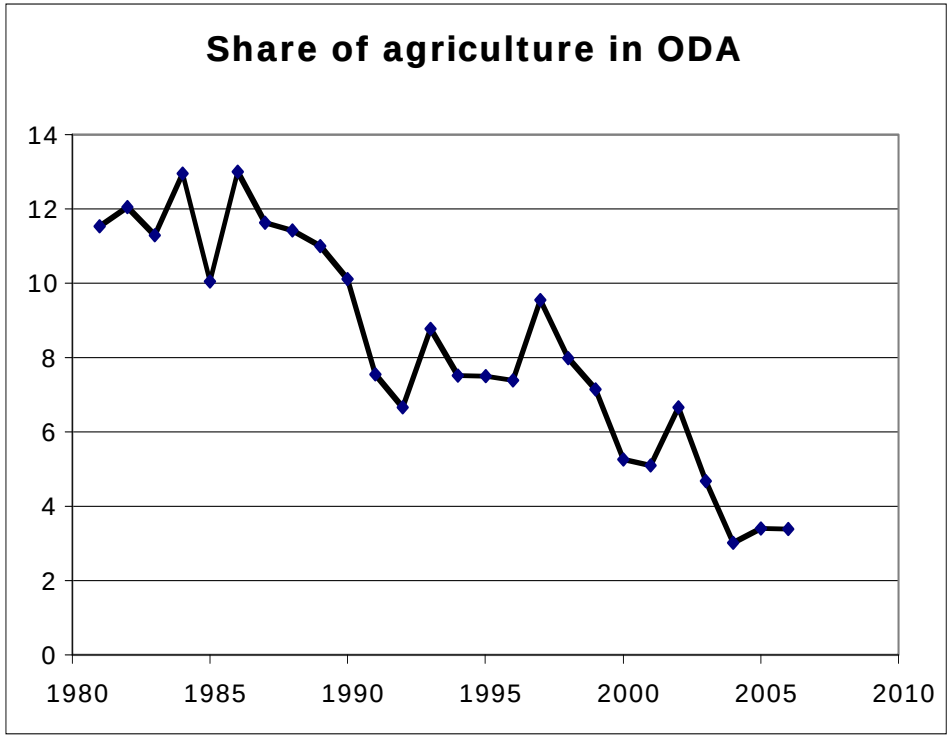
- Higher unemployment
- Lower financial transfers from migrants
- Reduced development aid
- Less foreign direct investment
- Reduced export opportunities
- Few policy options due to global nature of crisis: e.g. no currency devaluation or external borrowing

The longer term perspective on agriculture and rural poverty. Neglect of agriculture in development over the past two decades

- Under Washington consensus developing countries (DCs) adjusted the macro-fundamentals but neglected **sectoral** policies
- Industrialized through **open economy** strategies not through agricultural growth
- Descaled the **role of the state** in agriculture despite pervasive market failures
- Tried to reduce **rural poverty** through transfers instead of rising autonomous incomes
- Investment in agriculture **discouraged** by low international commodity prices (OECD farm policies) and adverse environmental effects

Consequence: Decline of the shares of agriculture in public expenditures in DCs and in overseas development assistance

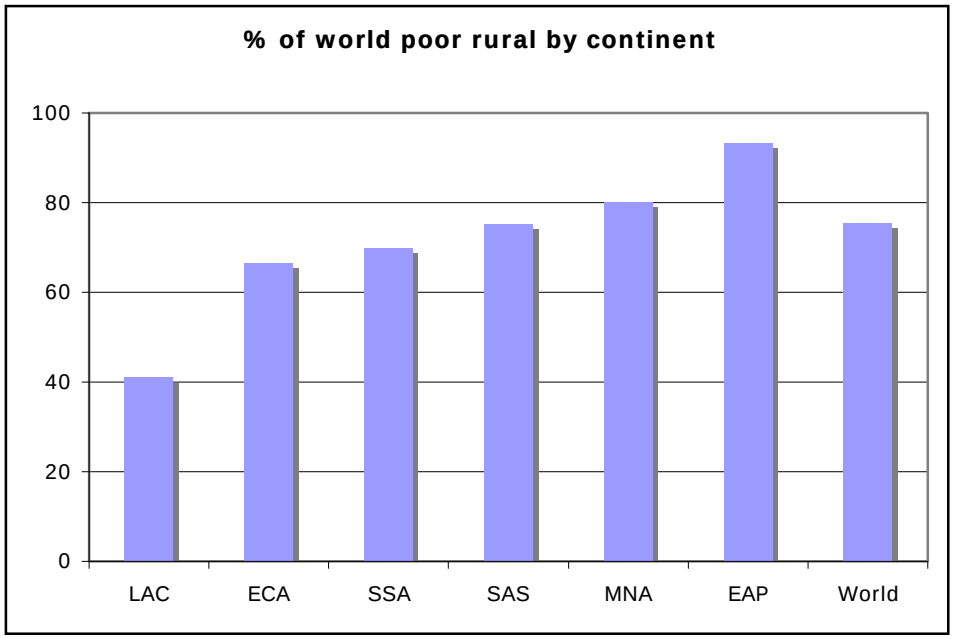


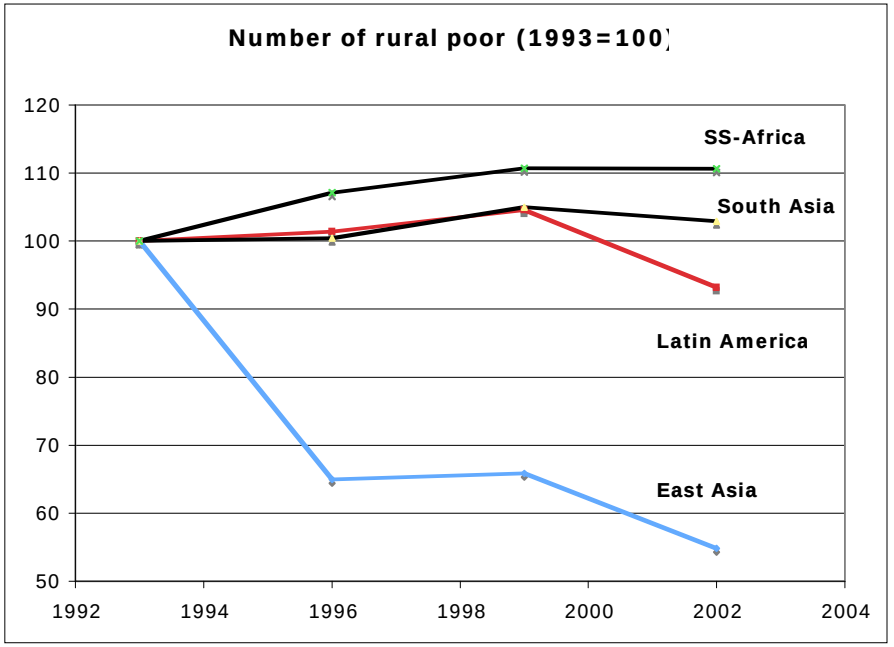


Following 20 years of neglect, five crises put agriculture back on the development agenda

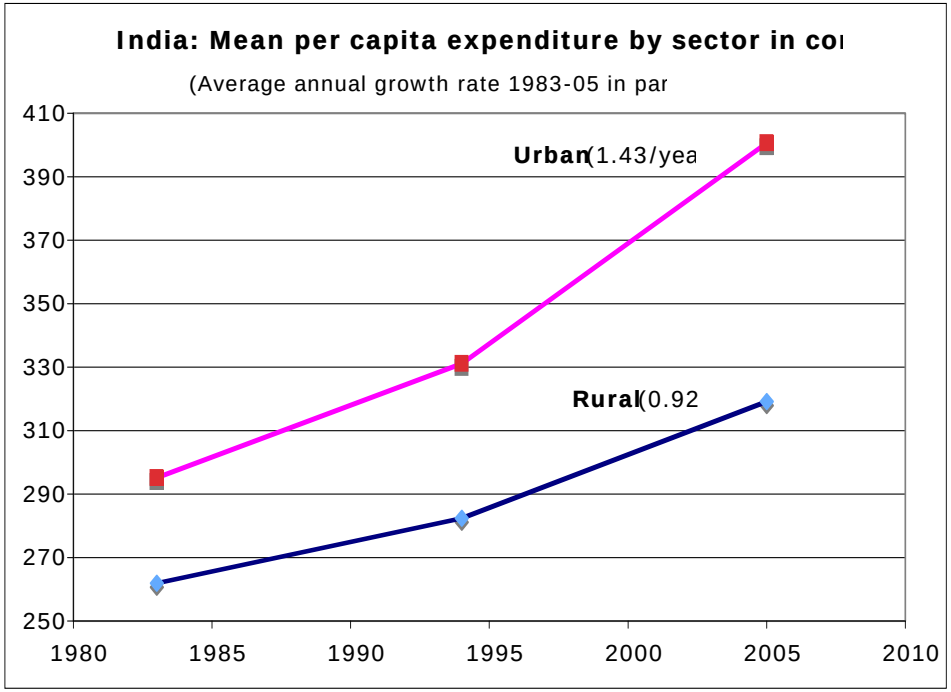
1) **The global food and financial crises**: Rising food insecurity and hunger
2) **Stagnation of productivity growth in Sub-Saharan Africa** agriculture
3) **World poverty** still overwhelmingly rural
4) Increasing rural-urban **income disparities**
5) Rising **resource scarcity** in the face of growing demand and **climate change** impacts

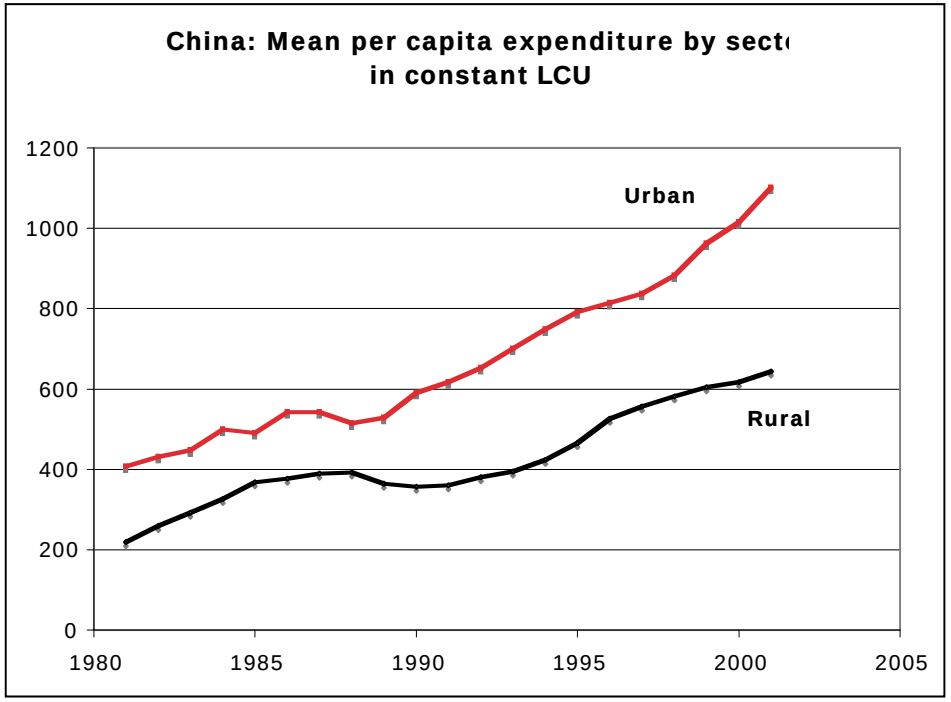
World poverty still overwhelmingly rural: 75% of world poor are still rural, and rural poverty has risen in SS-Africa and South Asia



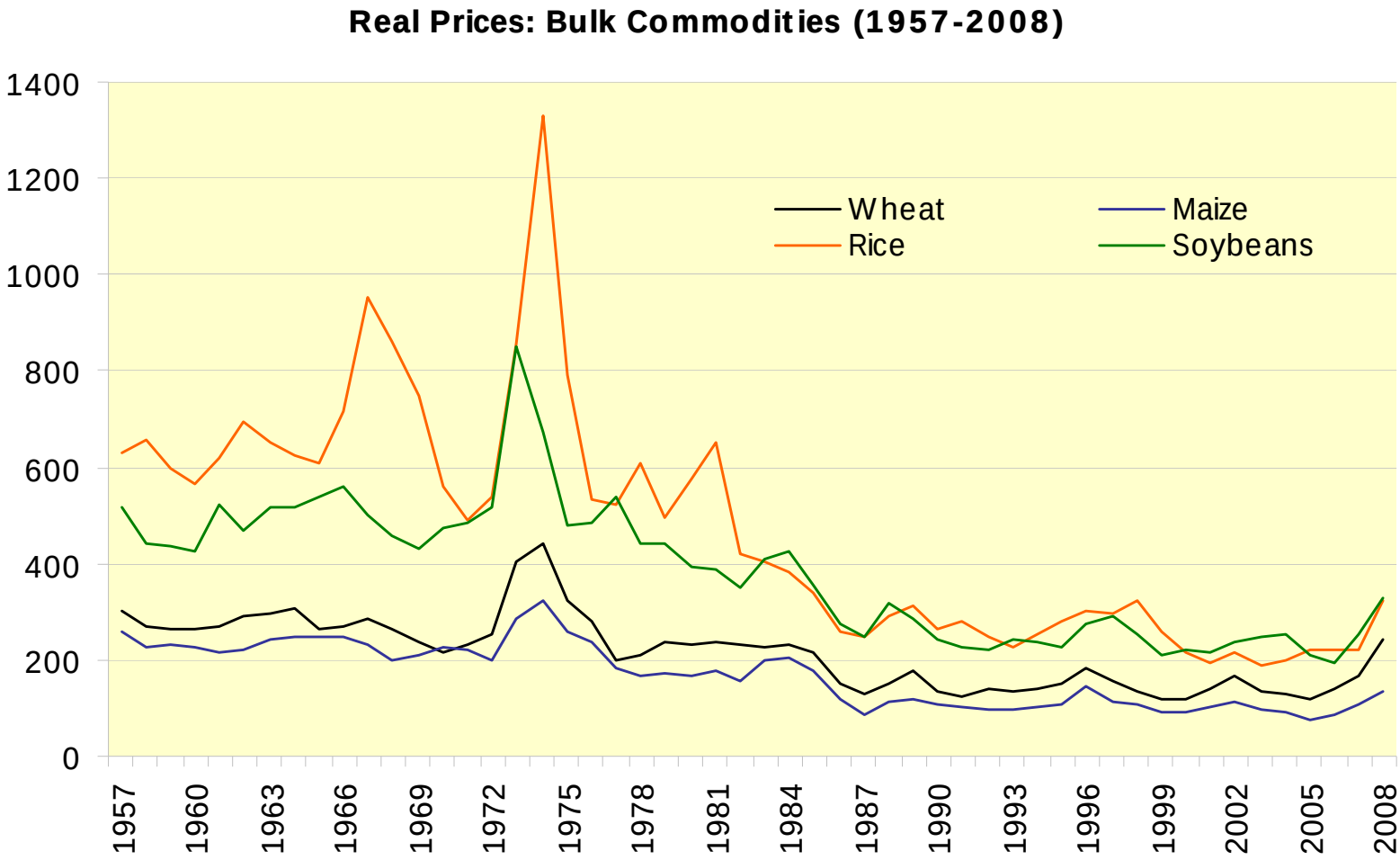


Rural-urban disparities are increasing, especially in China and India

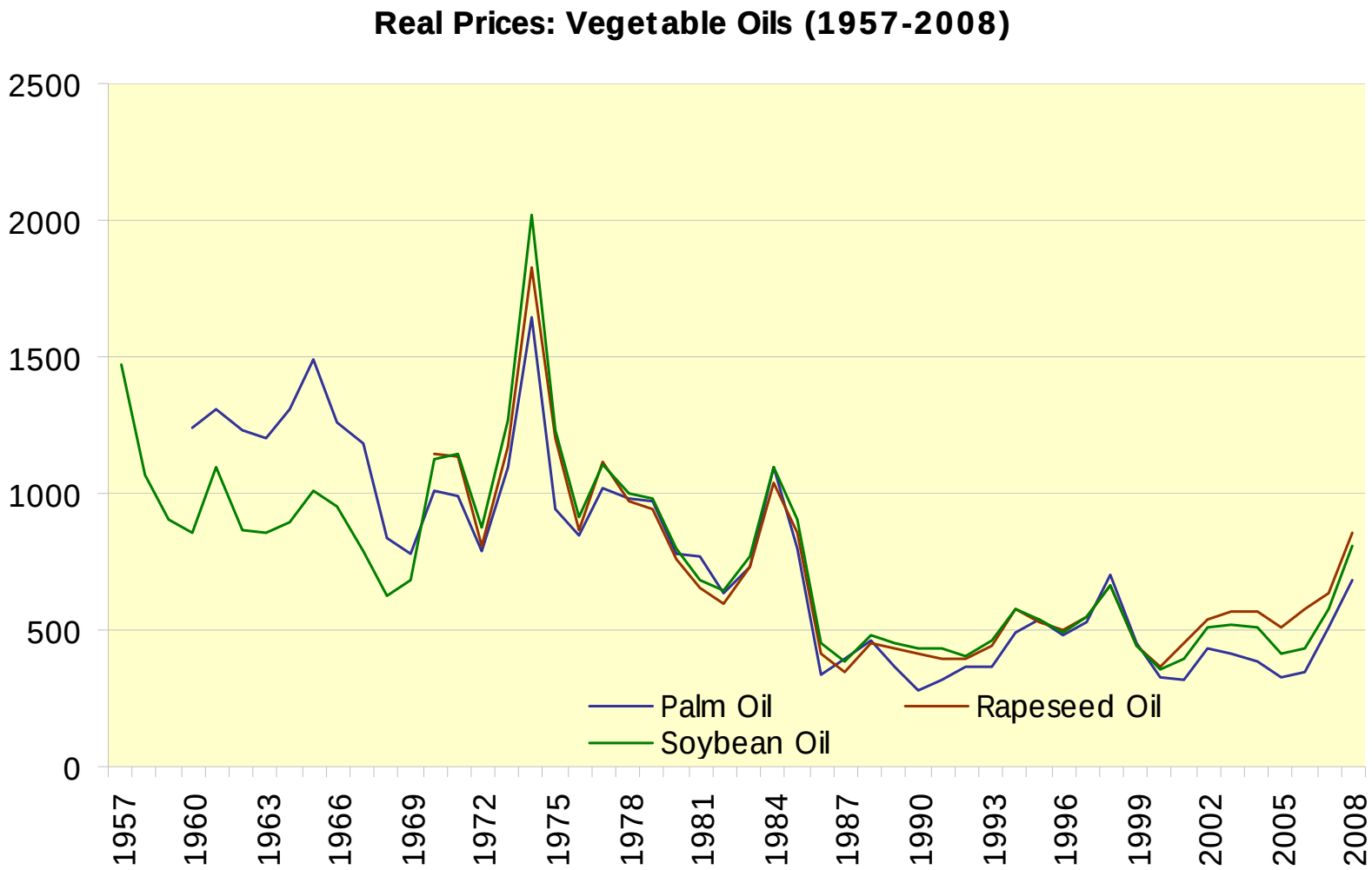




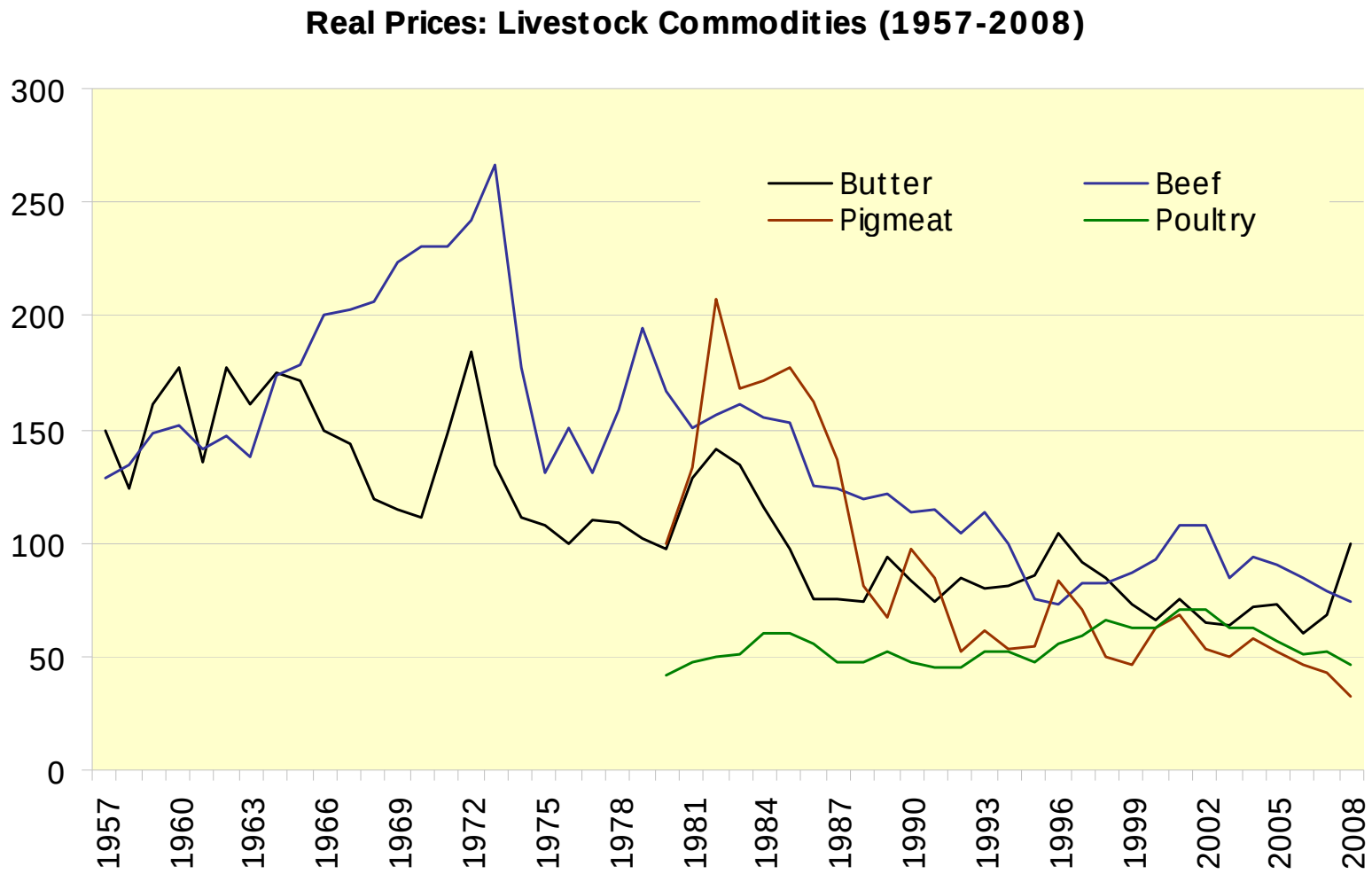
Is there an end of cheap food?
Real prices of bulk food commodities have tended to decrease but since mid 1980s tendency seems to have stopped



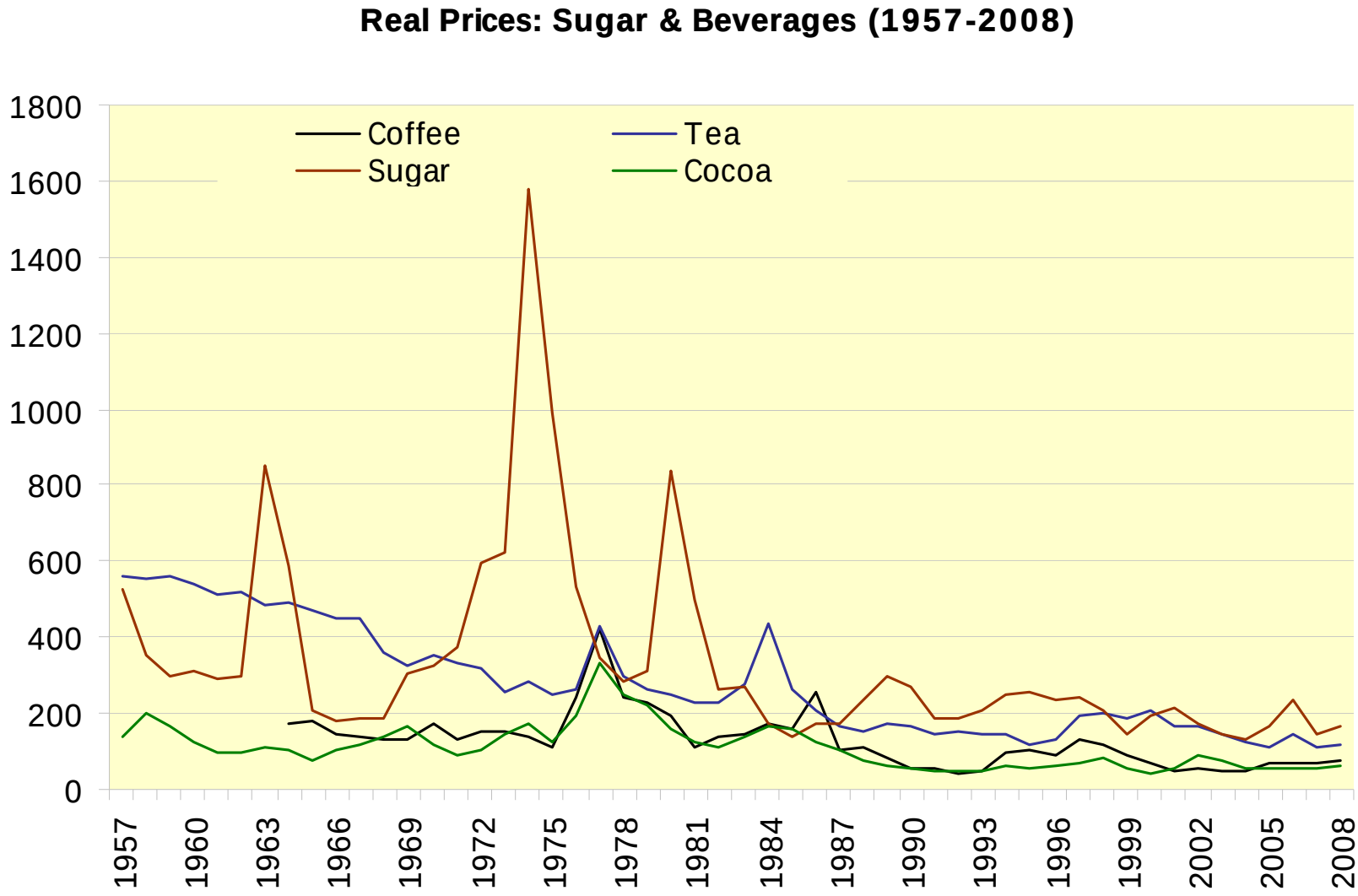
Real prices of vegetable oils have tended to decrease but since mid 1980s tendency seems to have stopped



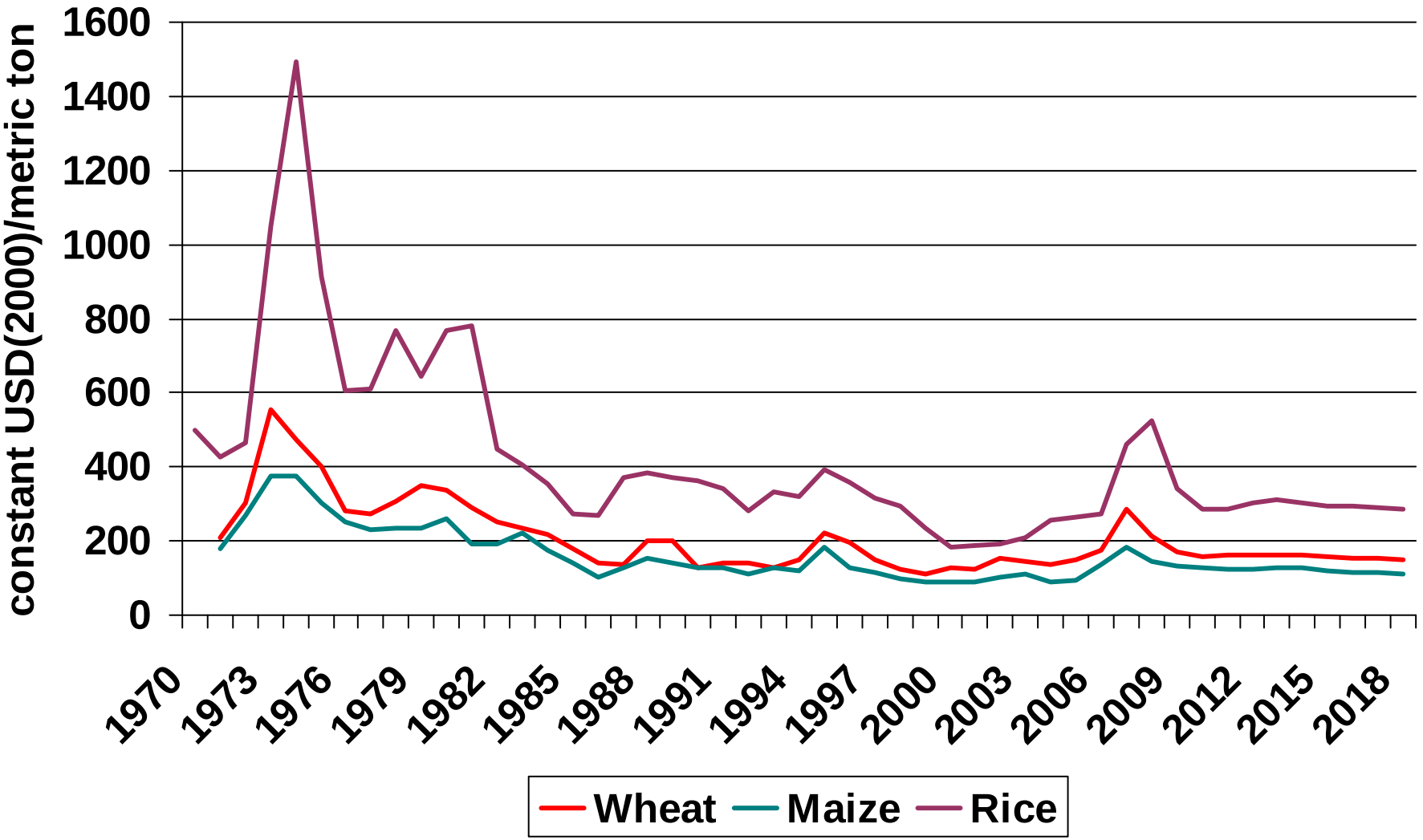
Real prices of livestock commodities have tended to decrease albeit at slowing pace since mid 1980s



Real prices of sugar and beverages have tended to decrease but since mid 1980s tendency seems to have stopped



Medium term projections. Real cereal prices: Leveling of prices appears to continue



Declining terms of trade for agricultural commodities has been due to faster rates of total factor productivity growth for agricultural than non-agricultural products

- Rate of growth of TFP has been faster in agriculture than in non-agriculture
- The rate of growth of TFP in agriculture seems to be higher than that of manufacturing.
- “Globalization” of agricultural research, has contributed to faster TFP growth in agriculture,
- Incidence of productivity advances largely on consumers (through lower prices) and little to producers.
- Has productivity growth slowed down?
- Has productivity growth lagged in DCs?

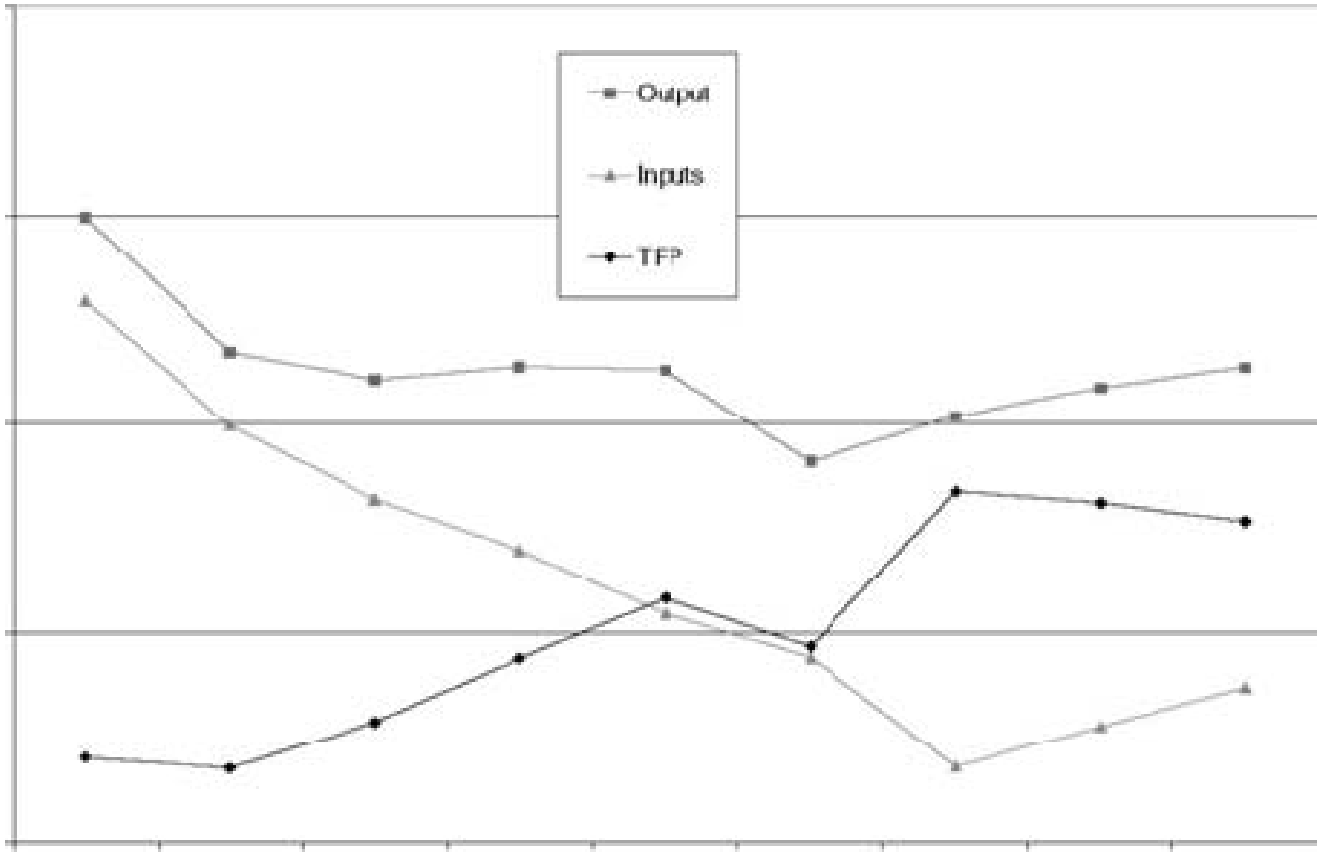
Annual TFP growth in agriculture does not appear to have slowed down for the world. Hence most likely reason for real price leveling must be lower inputs and faster demand growth

	1970–1979	1980–1989	1990–1999	2000–2006
Developing countries	0.55	1.67	2.31	2.08
Developed countries	1.62	1.48	2.25	1.76
USSR & Eastern Europe	-0.46	0.27	1.59	2.10
World	0.60	0.94	1.60	1.55

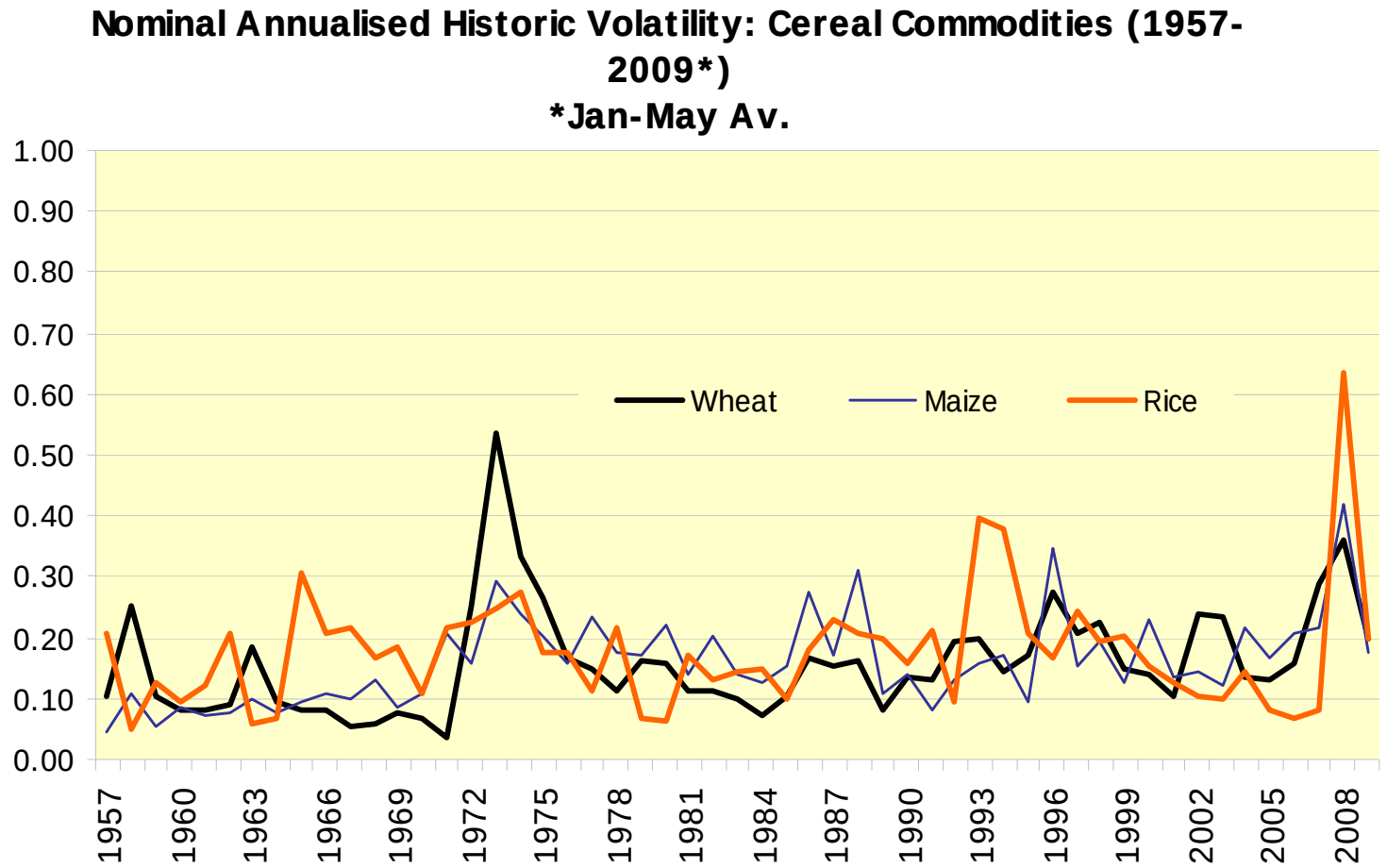
Source: Fuglie, 2008

Agricultural productivity developments for the world
Source: Fuglie (2008)

Average annual growth rate by period (%)	Output index	Input index	TFP index	Output per worker	Output per hectare	Grain yield (t/ha)
1970–1989	2.24	1.36	0.87	1.25	1.96	2.29
1990–2006	2.06	0.50	1.56	1.51	1.95	1.35



Grain price volatility does not seem to have increased over time for cereals



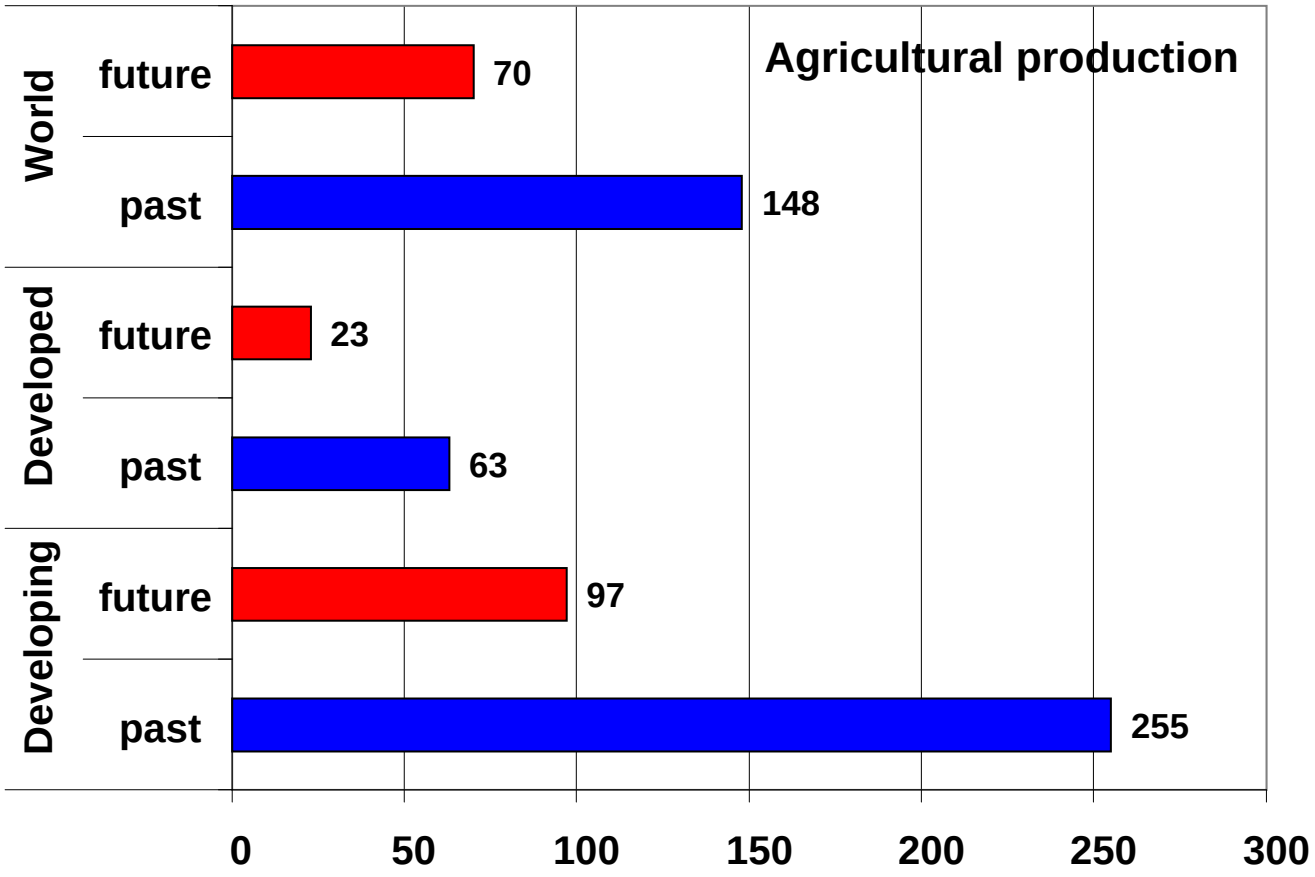
Main factors that will affect medium term agricultural commodity prices and price volatility (new factors in blue)

- Developments in total incomes and consumption
- Stocks and stock replenishment rates
- Shocks to production
- Petroleum prices
- Biofuel policies and technology prospects
- Developments in exchange rates
- Developments in financial markets and speculative fund positions
- New investments in agricultural production
- **Overall: New factors are likely to dominate. Considerable uncertainty and likely volatility**
- Implications for agri-food trade. International markets may become less reliable sources of food, but may offer new opportunities for growth exports of developing countries

The resource outlook to 2050

How much agricultural output needs to be increased by 2050 to feed the world?

Absolute increments in percent

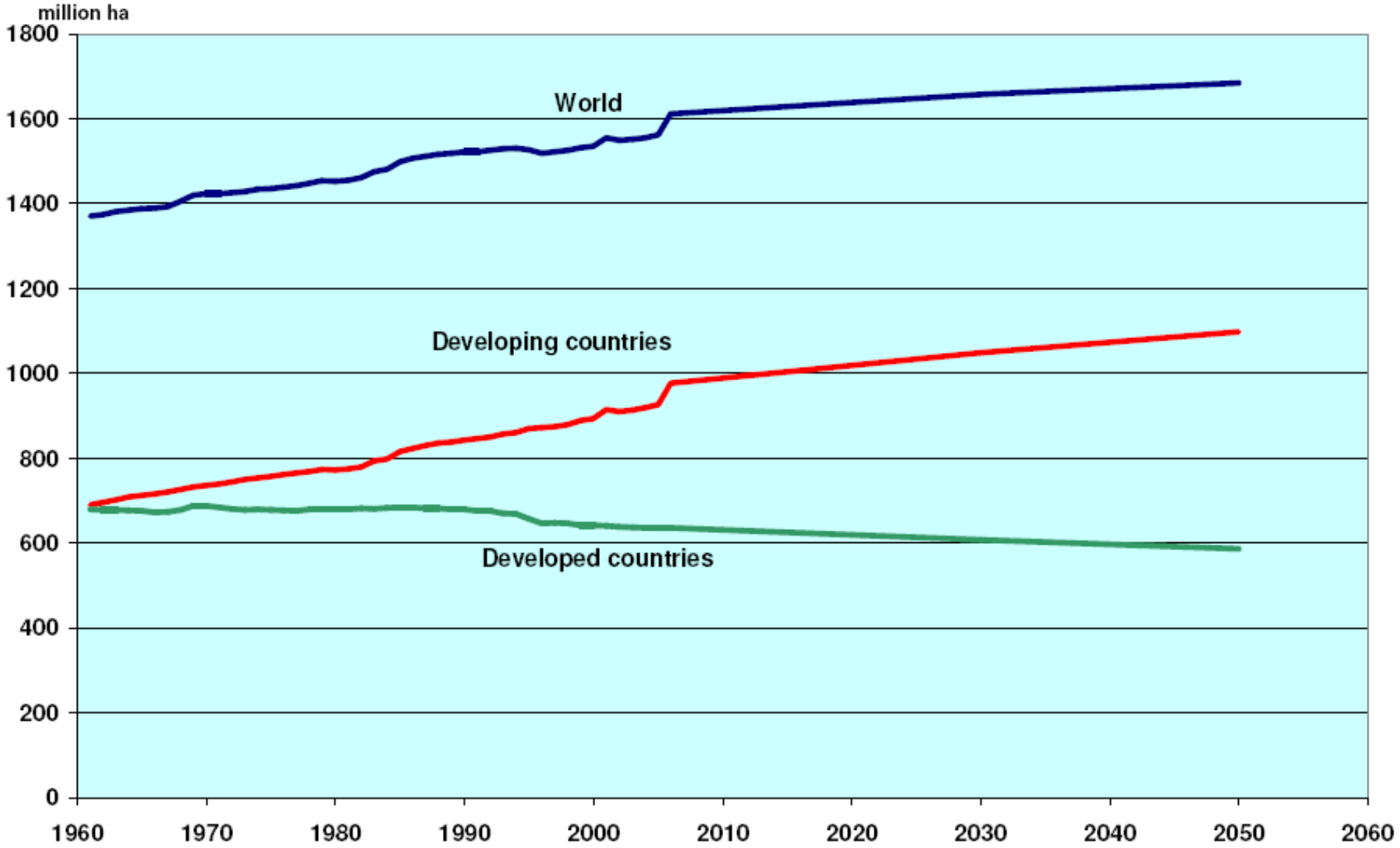


past = 1961/63 to 2005/07; future = 2005/07 to 2050

Where will agricultural growth come from?

- Area expansion?
  - 1.6 billion hectares currently used for crop production, another 2.6 billion with production potential, mostly in SSA and LAC
  - but concerns about biodiversity loss, carbon emissions, erosion
  - also economic feasibility, but that is changing with prices
- Climate change will affect land suitability and yields, but unevenly
  - initially adversely in SSA and LAC, positively elsewhere
  - eventually adversely in all regions, especially SSA and LAC
- Yield increases have accounted for the majority of production growth in recent decades, and will continue to do so in the future
  - about half from improved seeds
  - about half from increased inputs (esp. water and fertilizer)

Most of new arable land is in DCs



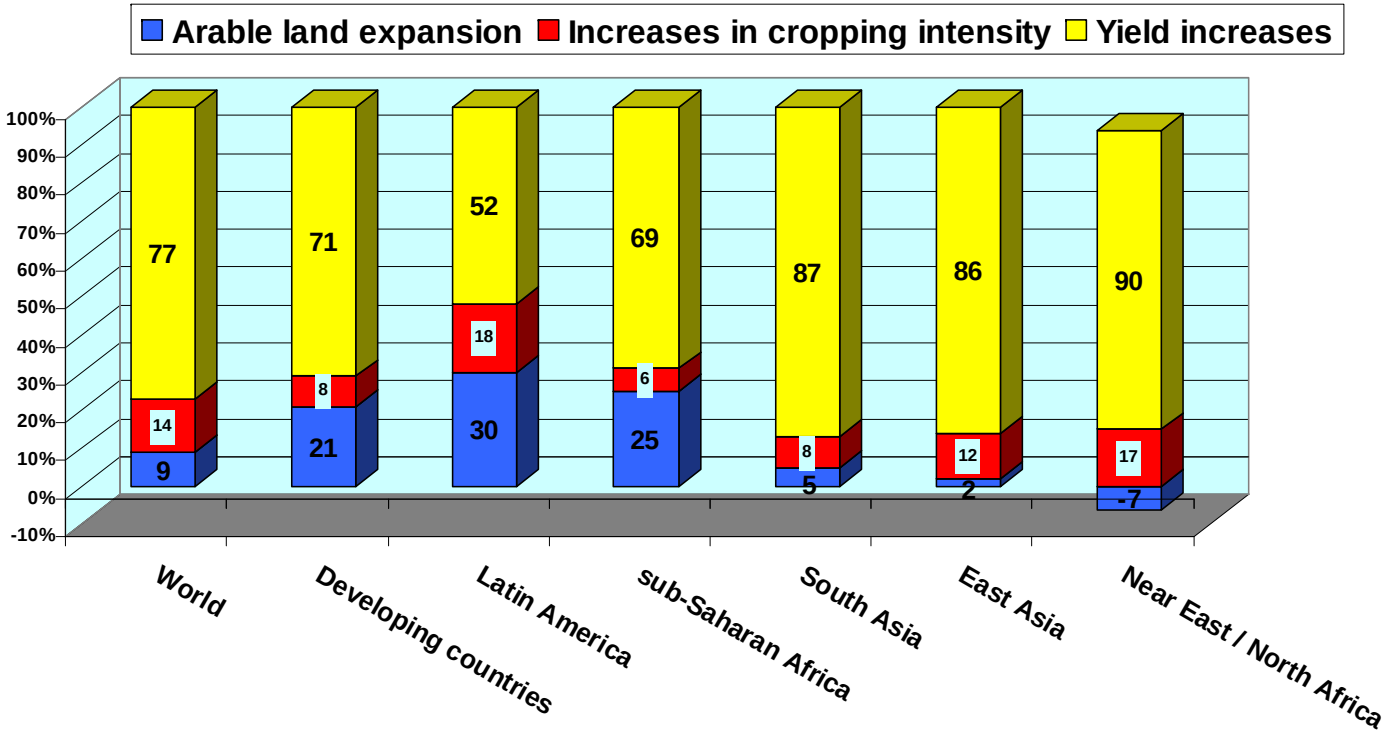
Source: Bruinsma 2009

Irrigated land expansion is projected to slow down considerably

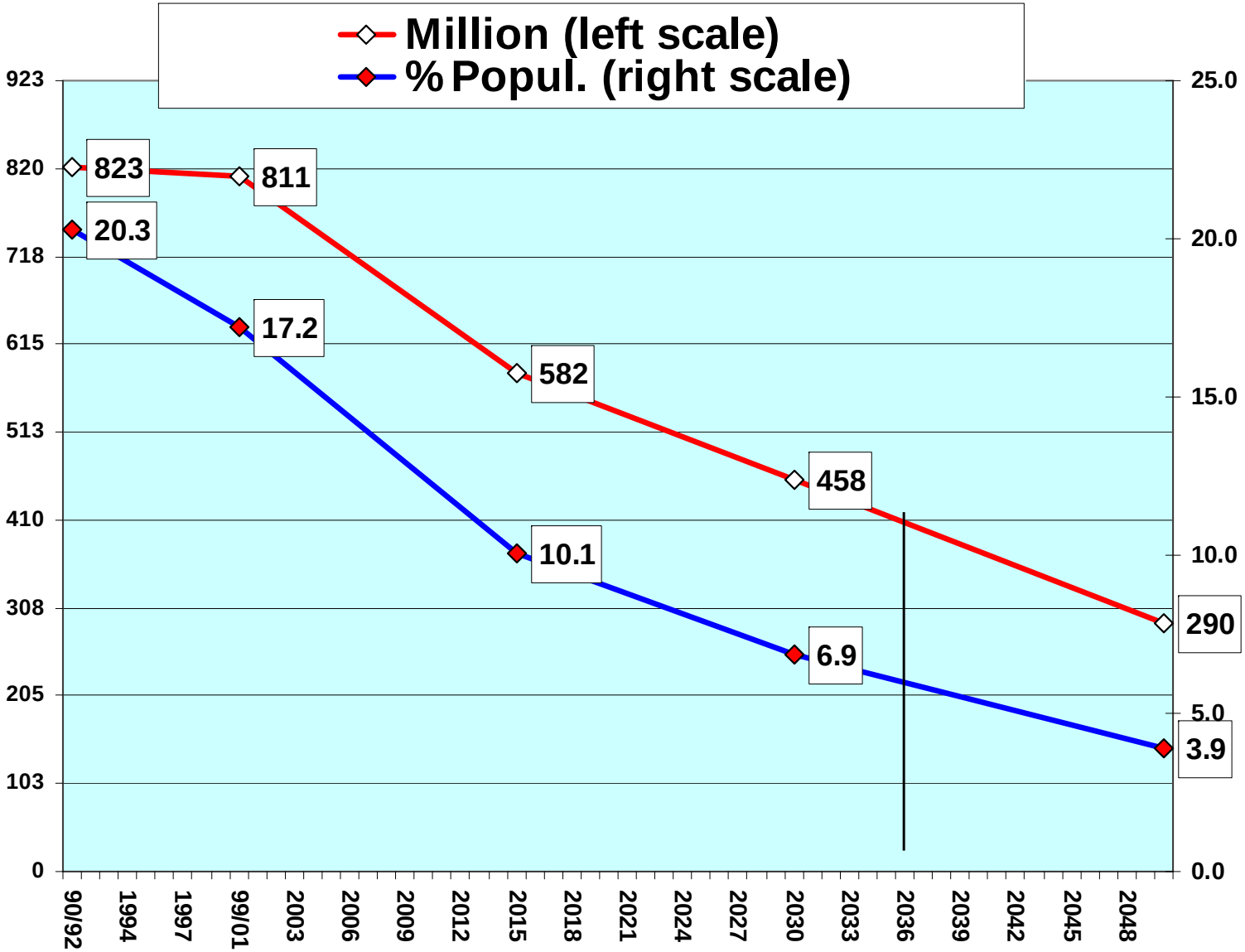
Area equipped for irrigation

	1961/63	2005/07	2050	1961-05	2005-50
	million ha			% p.a.	
World	141	287	318	1.71	0.24
Developed countries	38	68	68	1.57	0.00
Developing countries	103	219	251	1.76	0.31
excl. China and India	47	97	117	1.91	0.42
sub-Saharan Africa	3	6	8	2.07	0.67
Latin America	8	18	24	2.05	0.72
Near East/North Africa	15	29	36	1.86	0.47
South Asia	37	81	86	1.98	0.14
East Asia	40	85	97	1.42	0.30

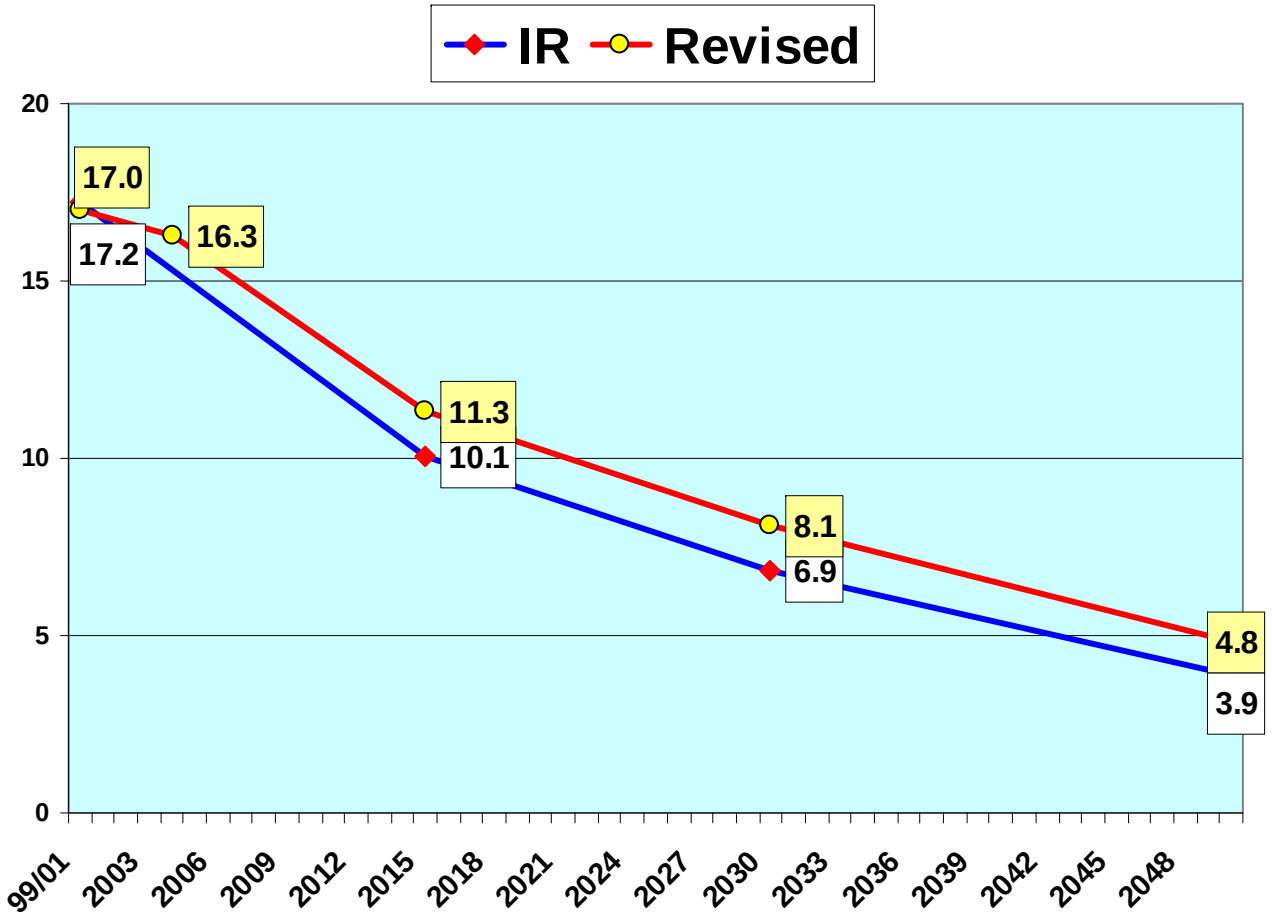
Sources of growth in crop production (2005/07 to 2050)



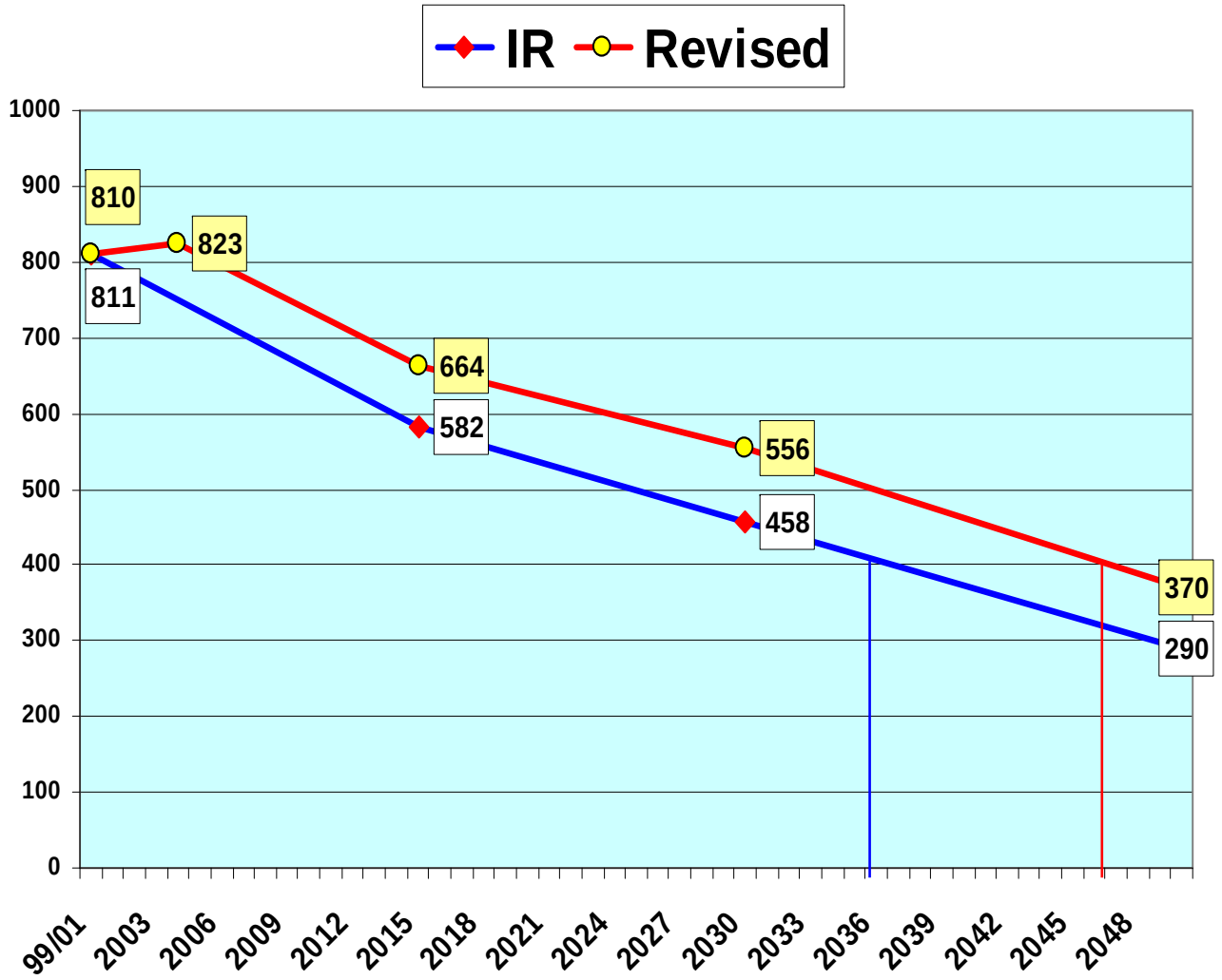
Long term perspectives on undernourished in DCs. FAO interim report (IR) estimates in 2006



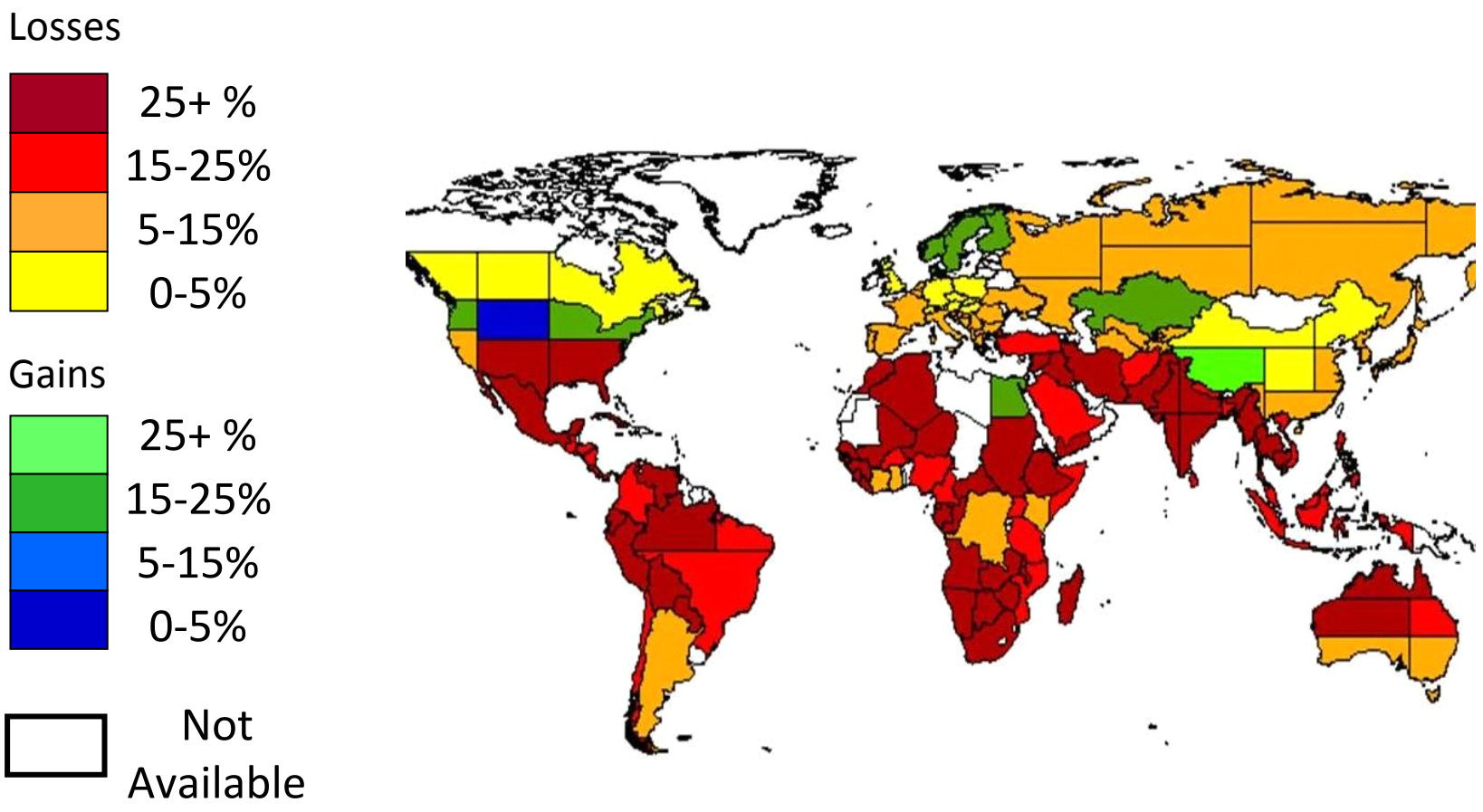
2009 FAO revisions of undernourishment trends in DCs (% of Pop.)



2009 FAO revisions of undernourishment trends in DCs (million)



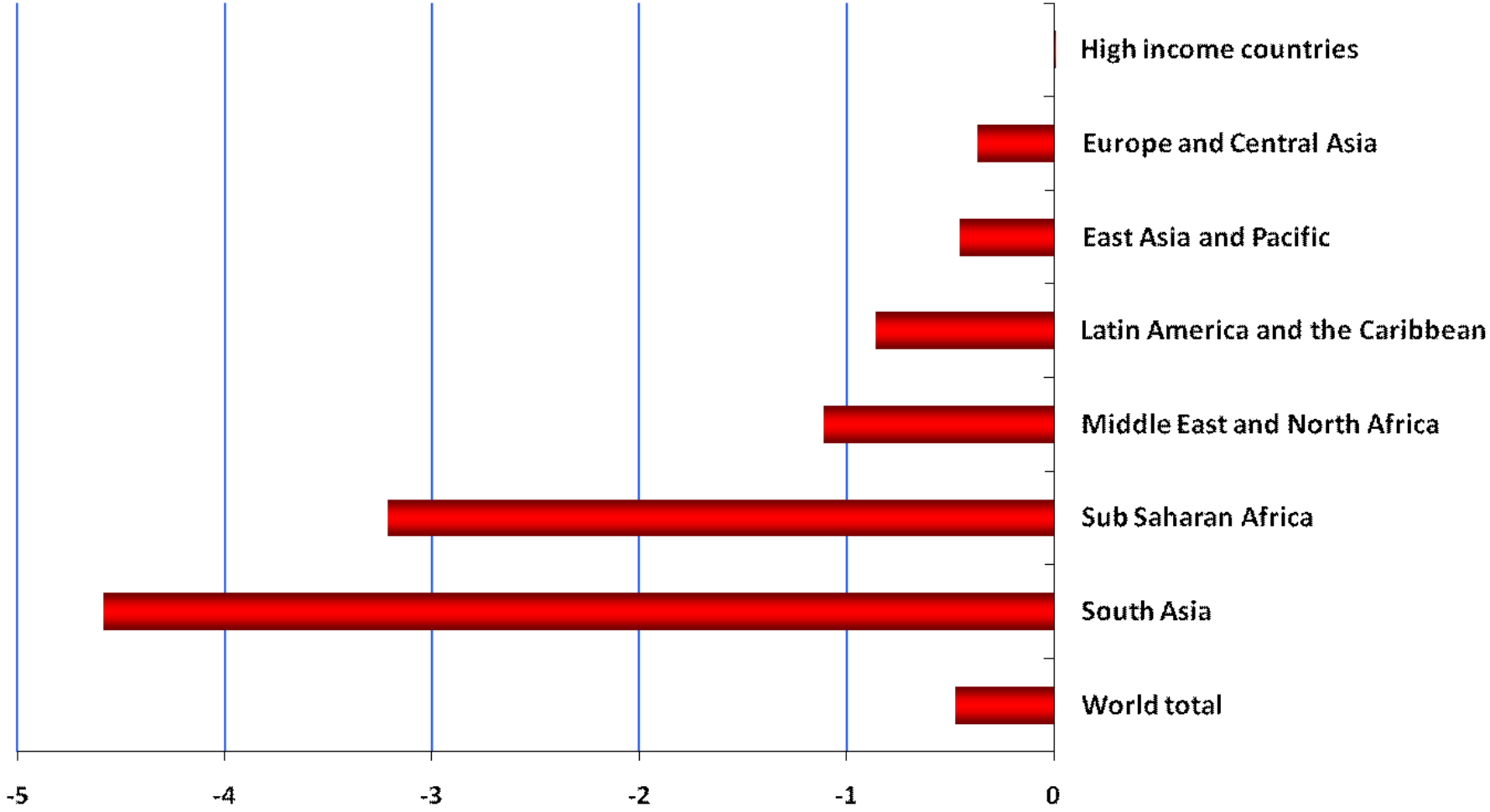
Potential impact on agricultural production due to climate change—without carbon fertilization effect



Source: Cline 2007.

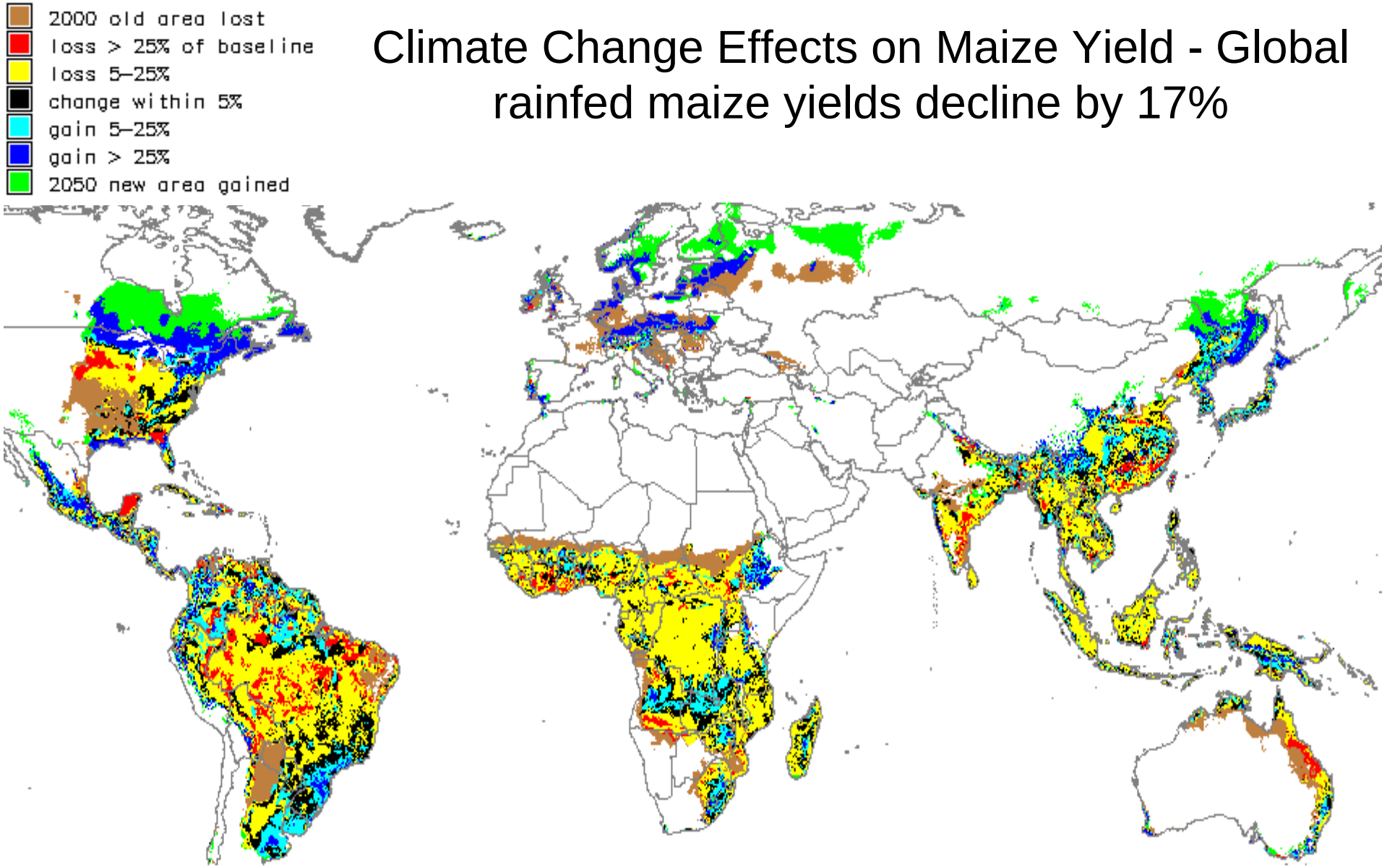
Potential impact on real incomes from climate change

Real income, percent difference from baseline with no damage in 2030



Source: Van der Mensbrugghe (2009). Simulations with World Bank's ENVISAGE model.

Climate Change Effects on Maize Yield - Global rainfed maize yields decline by 17%

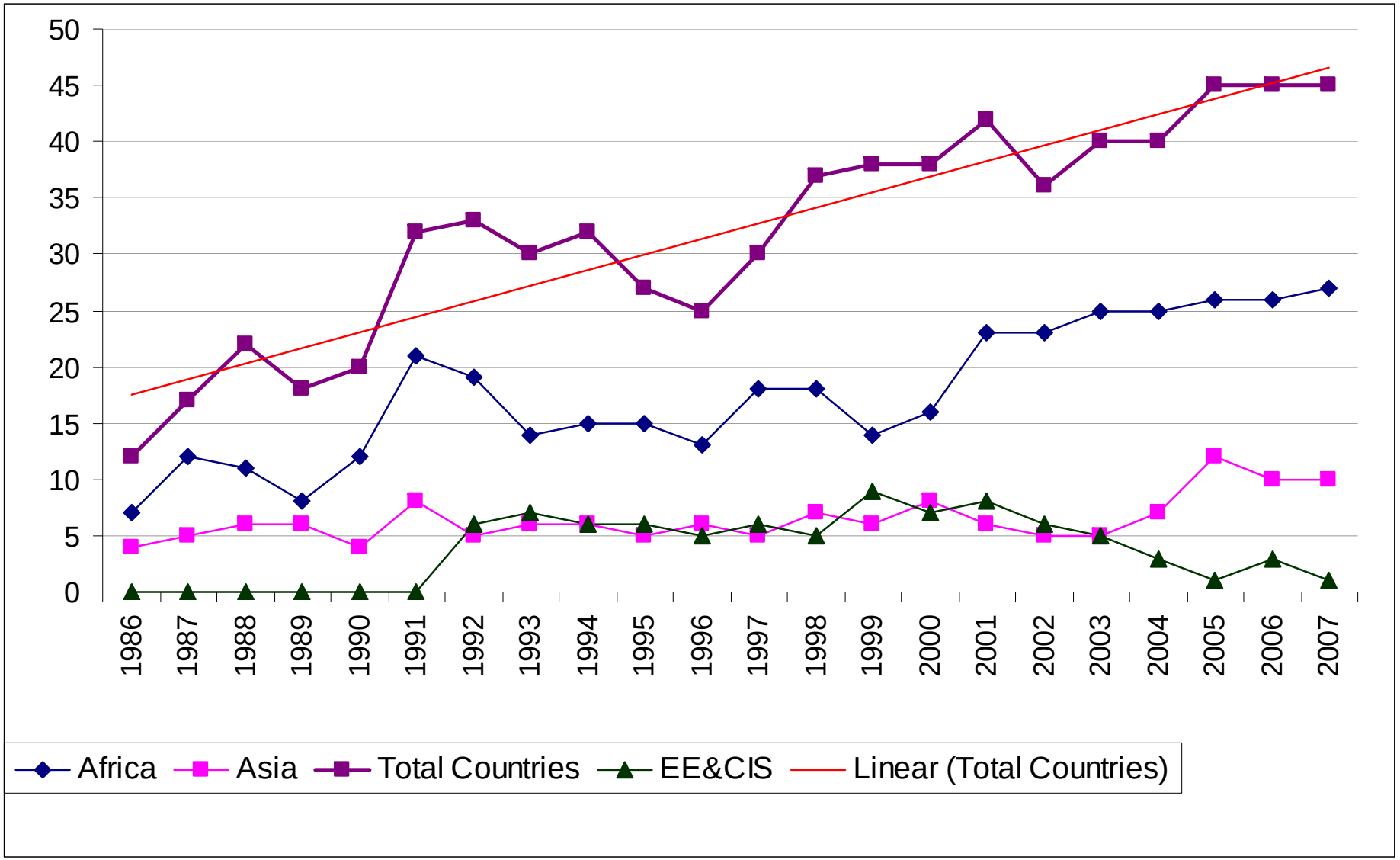


Hadley GCM, SRES Scenario A2a, Maize Variety IB0041

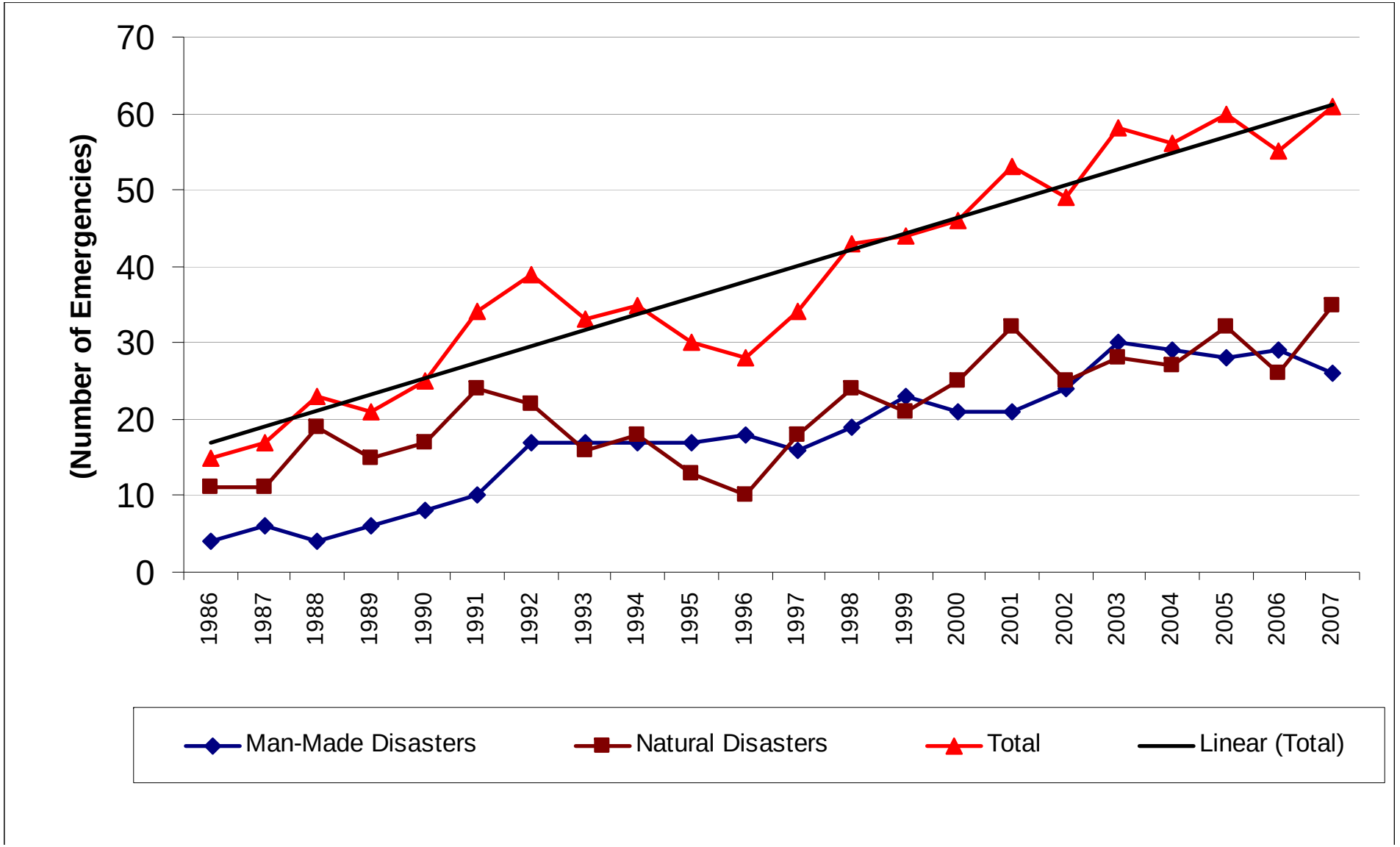
Source: G. Nelson, J. Koo, R. Robertson, "Simulating the Yield Consequences of Climate Change: Combining Crop Models with Location-specific Climate and Physical Constraints" , EPTD, IFPRI, in draft

Climate Change and political instability may create more food market instability

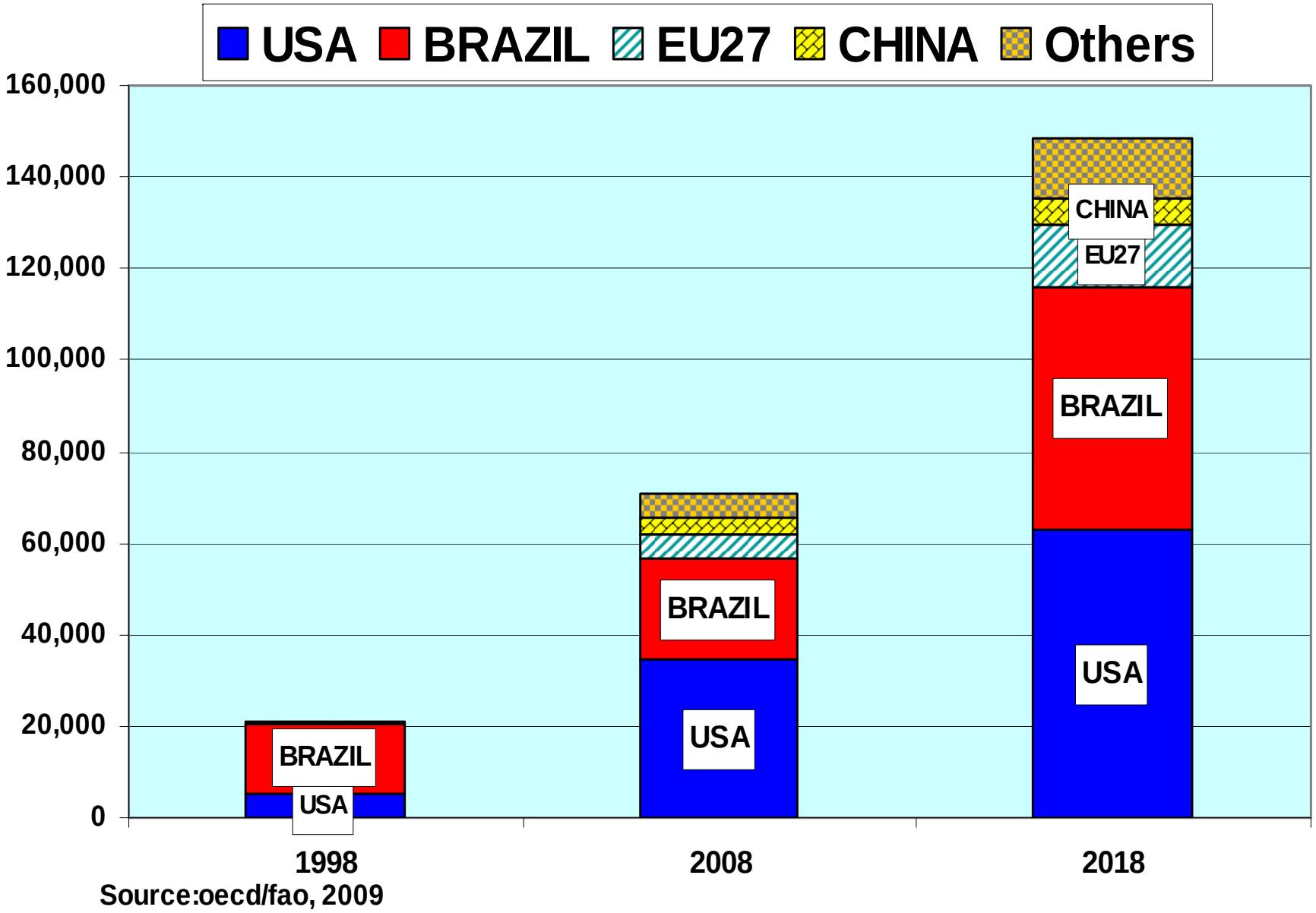
No. of Countries facing food emergencies, 1986-2007



Trends in causes for food emergencies, 1986-2007

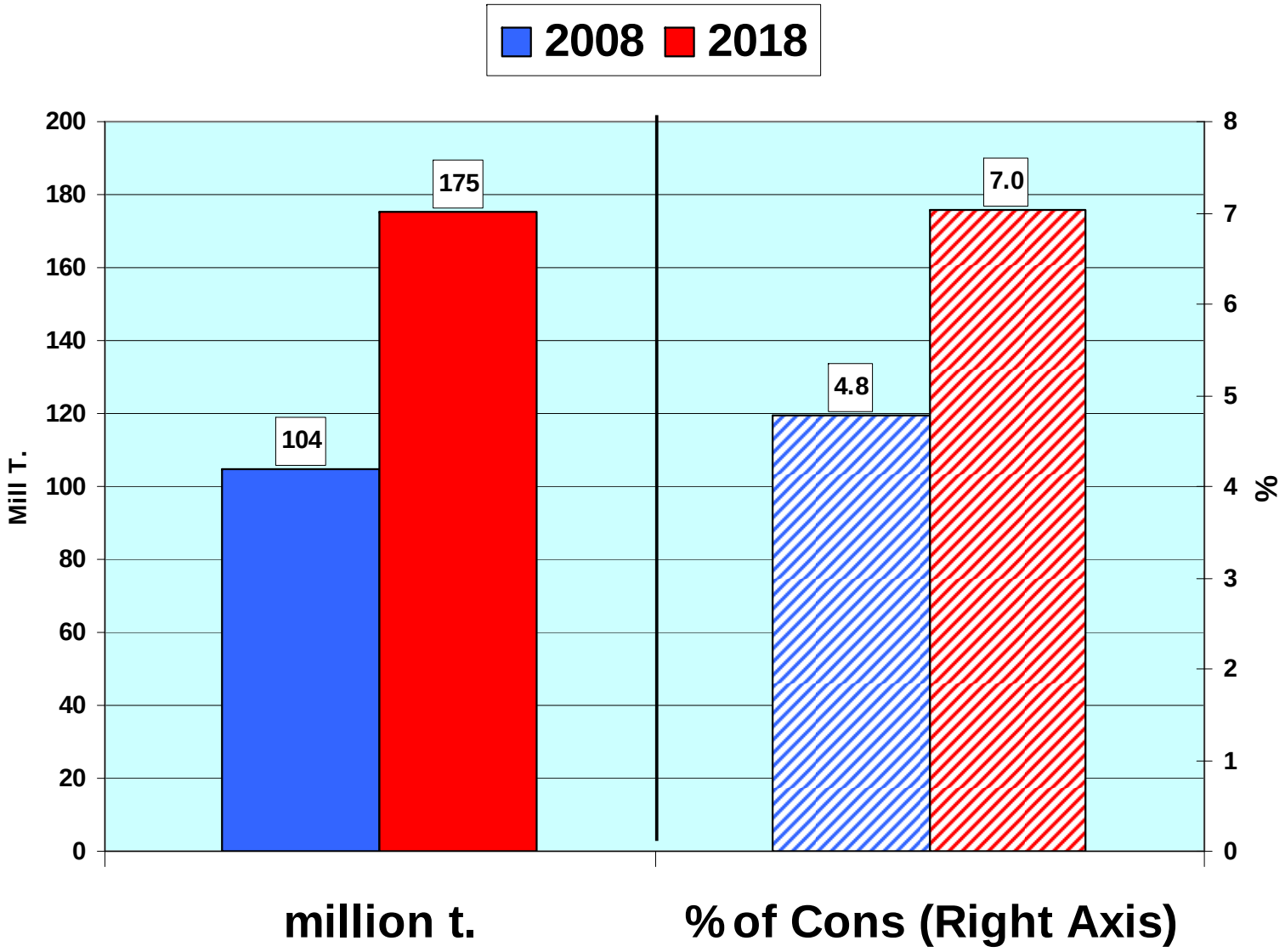


Medium Term. World Ethanol Production (th. t.)

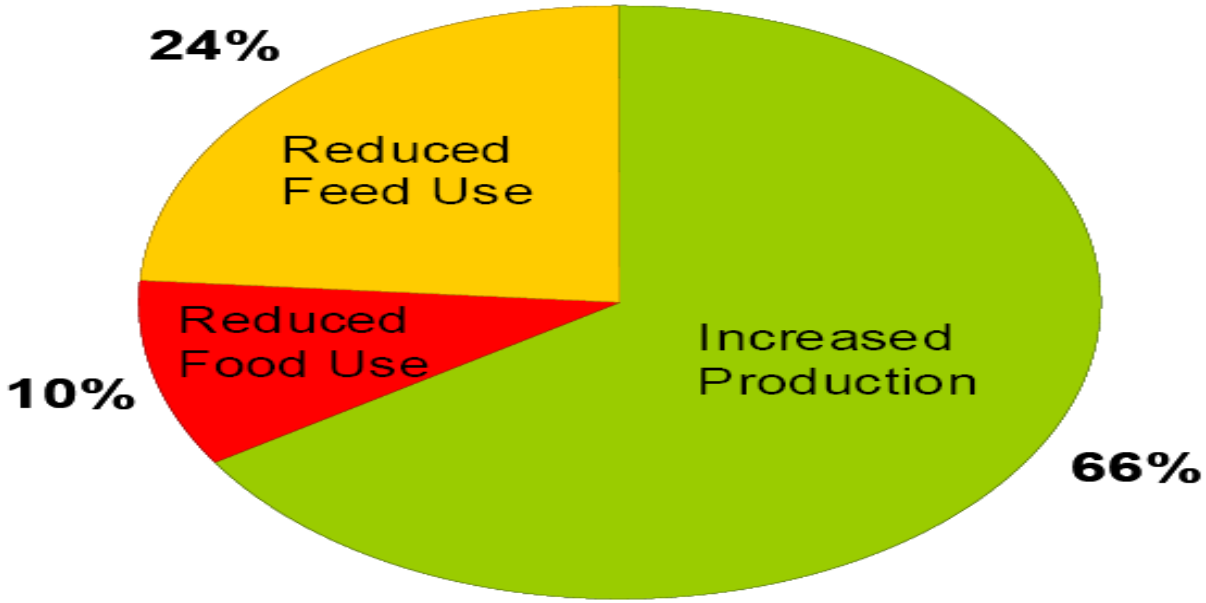


Source:oecd/fao, 2009

Medium Term. Cereals Use for Ethanol

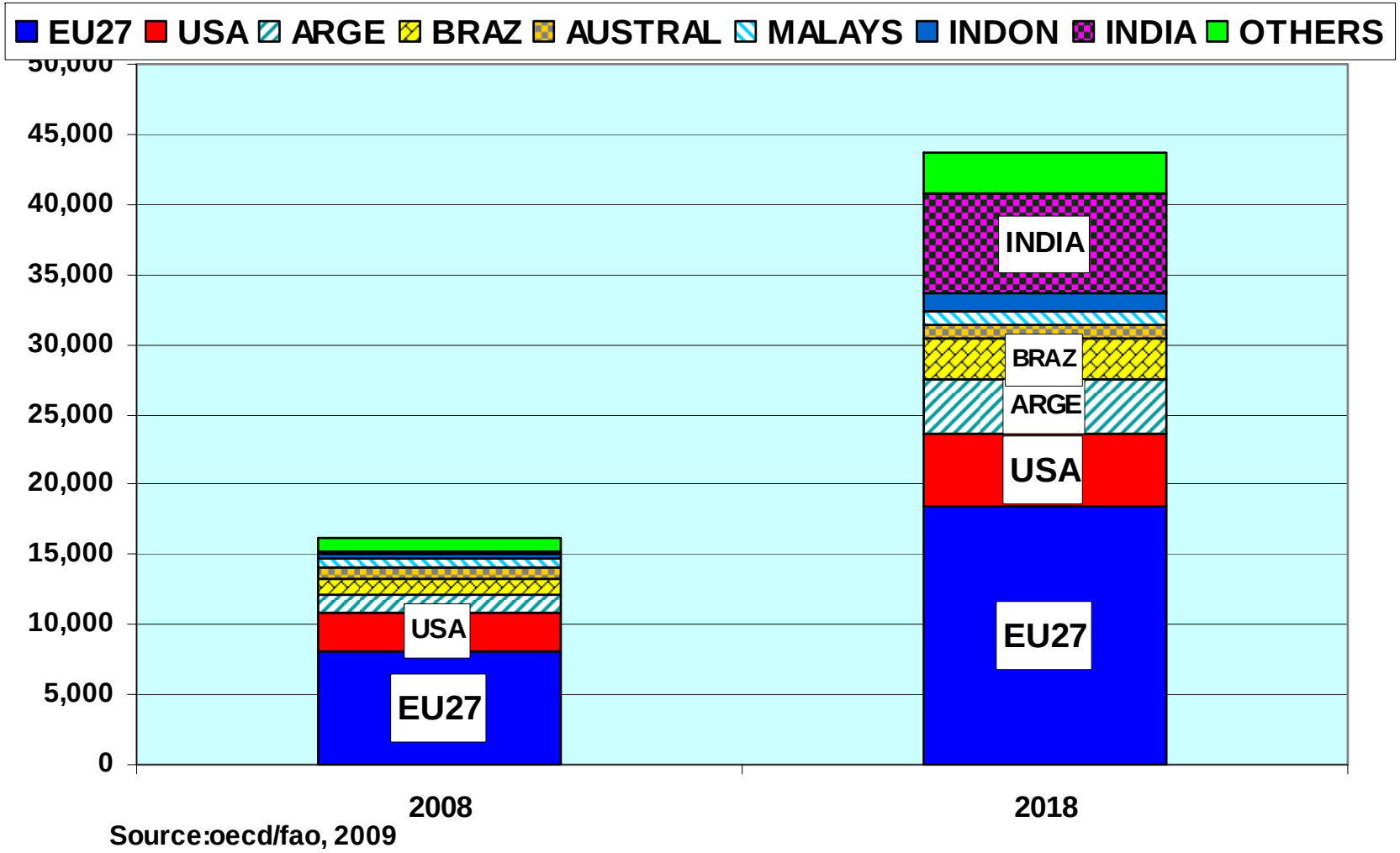


- How Will this additional demand be met?
  - OFID/IIASA (Cereals)



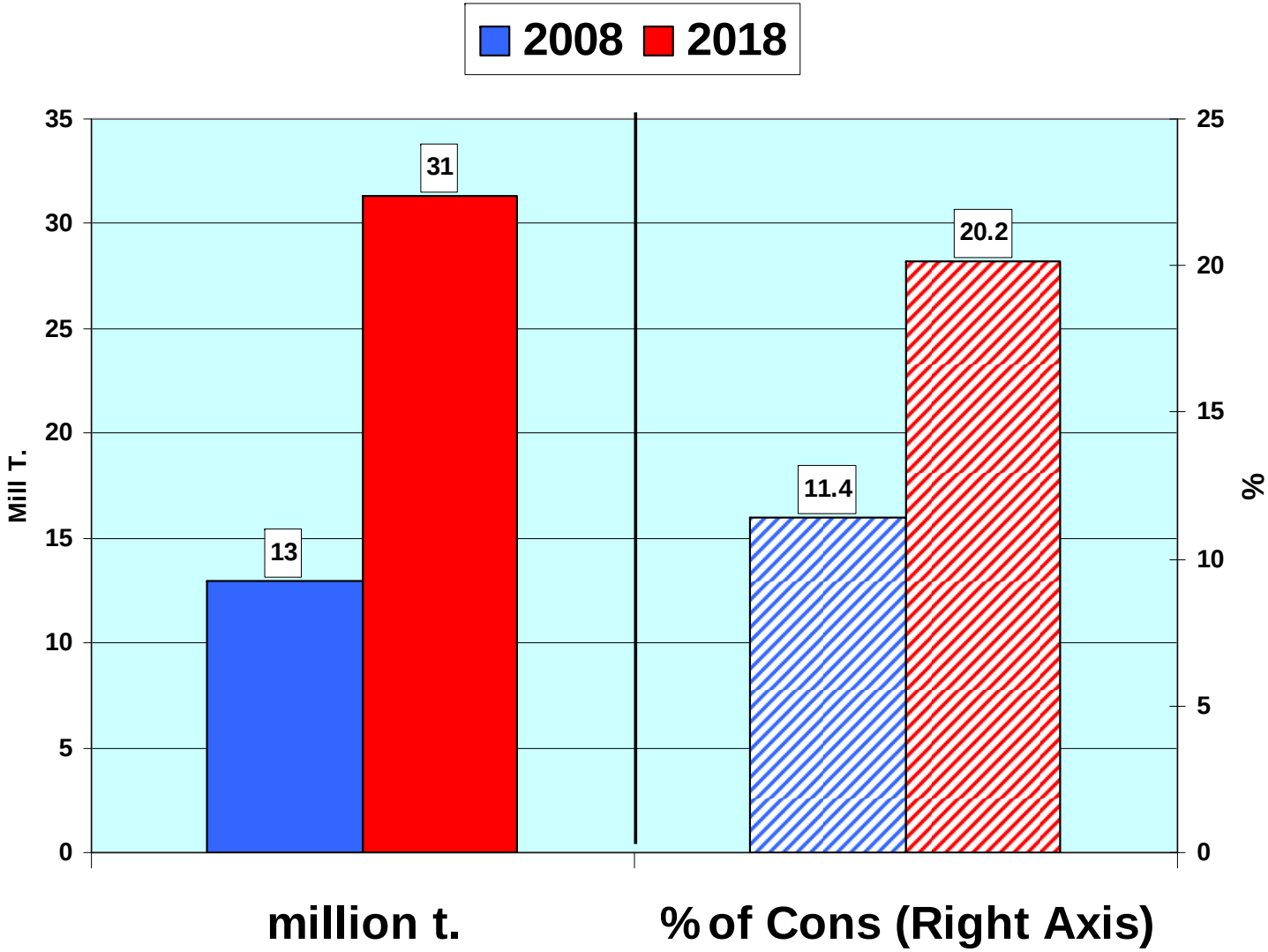
- And Will it Depress the growth of Food Consumption?
- What happened in recent years of biofuels explosion?

Medium Term. World Biodiesel Production (th. t.)



Source:oecd/fao, 2009

Medium Term. Major Veg. Oils Use for Biodiesel (excl. Jatropha)



Developments in global food and agricultural sectors that will condition future trade patterns and policies

- Uneven growth in the global economy
- Growth in agricultural output and investment, especially foreign direct investment
- Continued reform towards decoupled support in developed countries
- Continued policy reform in developing countries
- Global volatility of prices and concerns about access to supplies and food security
- Continued concern for environmental impacts of agriculture
- Continued concentration and value chain development in the food system
- Consumer-driven food attributes and the rise of private standards
- The proliferation of regional and bilateral agreements
- Growing water scarcity and increased food emergencies due to climatic shocks

Major challenges to reversing the productivity gap in African agriculture and enhancing trade

- Need much faster African agricultural productivity growth to deal with growing food dependence and stagnating overall growth
- Need to reflect on and implement new institutional ways to interlink credit and output-labour markets (producer associations, contracting, etc).
- In the short term, must emphasize more efficient use of existing technologies rather than expensive investments in new technologies. African agricultural productivity can improve considerably by better applications of existing technologies
- Need to invest so as to lower marketing margins and thus enhance producer returns
- Need to increase the use of insurance mechanisms for producers and rural safety nets, to release private productive capital.
- May need time bound infant industry type of protection or other support for selected agro-industrial sectors, perhaps on a regional basis, until infrastructure improves and marketing margins decline

Assuring adequate grain supplies for world markets

- Promote "**production reserves"** in most productive countries instead of commodity reserves
- In several OECD countries policies have been instituted to set-aside land for conservation. Extend such policies as part of a **"production reserve"** strategy
- Such policies are largely "decoupled", namely non-trade distorting, hence acceptable from a WTO perspective. .
- Productive land set-aside could be brought into physical production in high income countries within 6-10 months (the recent supply response is evidence to that)

Problems of access to grain imports

- High grain prices induce speculative purchasing and hoarding by many agents, including importing countries.
- Many middle and high income regular net food importing countries, apart from higher food import bills, face risks of lack of adequate supplies
- Many of these countries have low capacity for domestic production albeit capacity to finance imports
- During high prices, low income countries face both rationing out of global supplies by richer importing countries as well as higher costs
- To achieve global and equitable food security need system to assure supplies to both types of countries

Appropriate policies for assuring grain market access by middle and high income net grain importing countries

- Investments in food production in other countries with contractual commitments to buy back products
- Medium and long term arrangements with main exporters
- Managing import risks through derivative instruments reinsured in international reinsurance market

A proposal to ensure food imports in low income countries net grain importing countries through a dedicated Food Import Financing Facility

The major problem faced by LDCs and NFIDCs during periods of food import needs in excess of normal commercial imports, is import financing for both private as well as parastatal entities

Basic rationale and concept of a FIFF

- **Purpose**: To allow LDCs and NFIDCs to finance commercial food imports in periods of excess import bills
- **Problem to be dealt with**: Credit and financing exposure ceilings from developed country financing institutions to LDCs and NFIDCs
- **Concept**: Provide additional finance for commercial food imports in excess of normal commercial food imports. In other words increase risk bearing capacity of financial institutions financing food imports
- **How**: By inducing increases in credit ceilings and country exposures under specific conditions, via a credible mechanism of intermediation

The basic structure of the Food Import Financing Facility (FIFF)

- Ex-ante (i.e. before onset of marketing year) availability of extra finance, based on estimates of excess food import bills
- Financing, or guarantees for finance above normal credit line ceilings, availed at normal commercial terms. No subsidies, no conditionalities
- Excess finance made available to financial institutions of eligible LDCs and NFIDCs (not directly to governments or traders). Domestic financial institutions will deal with local food import traders.
- FIFF would interpose itself between financial institutions in food exporting countries and financial institutions in eligible food importing countries.
- FIFF will supplement and augment the existing export financing mechanisms in developed food exporting countries.

Advantages of FIFF

- No need for new international institution. Facility can operate as part of existing IFI
- Ex-ante mechanism, not ex-post
- No conditionalities for finance
- Low interest rates, due to lower cost of intermediation
- Risk pooling of food import risks across many LDCs and NFIDCs
- Specialized knowledge of food import finance and relevant risk management
- Low interest rates of excess food import finance
- Considerable leveraging of funds (with small yearly costs total finance extended can be many times that)
- Multilateral export credit guarantee mechanism for food exports.
- Low risks due to sophisticated risk management, hence low cost (a small share of total financing extended)
- Could be adapted and extended to serve more purposes, such as a special concessionary window

Main messages

- Generally optimistic on global supply prospects, *but*...
- need increased investment to sustain productivity growth
  - in technology, infrastructure and institutions
  - also environmental services, sustainable resource management
- need to increase access to food, not just supply
  - and not just in the aggregate, but for all people
  - need institutions to manage world market volatility and unreliability
- need to improve ability to adapt and respond to new pressures and uncertainties
  - not just on average, but at all times
- need to increase incomes not just in agriculture, but in other sectors as well
- Increase in hunger with increased biofuel production

Policy priorities identified

- Increase investment in agriculture
  - R&D, infrastructure and institutions
  - also in complementary sectors, e.g. education and health
- Improve access to food
  - equitable growth in incomes (both farm and non-farm)
  - Improve risk management at household and national levels
  - safety nets for vulnerable groups
- Need well-functioning national markets and institutions as well as international trade liberalization, but sequencing is important
  - Improve farmers' access to input and output markets while facilitating the transition out of agriculture for those who leave the sector
  - Reduce subsidies for biofuels
  - Reduce trade barriers and improve regulatory frameworks for new technologies, including GMOs
- Improve resource management
  - best practices, sustainability criteria, payments for environmental services
- Build political will to address challenges that transcend the traditional decision-making horizons of producers, consumers and policymakers

THANK YOU