

# **Many People and Less Poverty in 2050: Satisfying Food Demand in the Future**

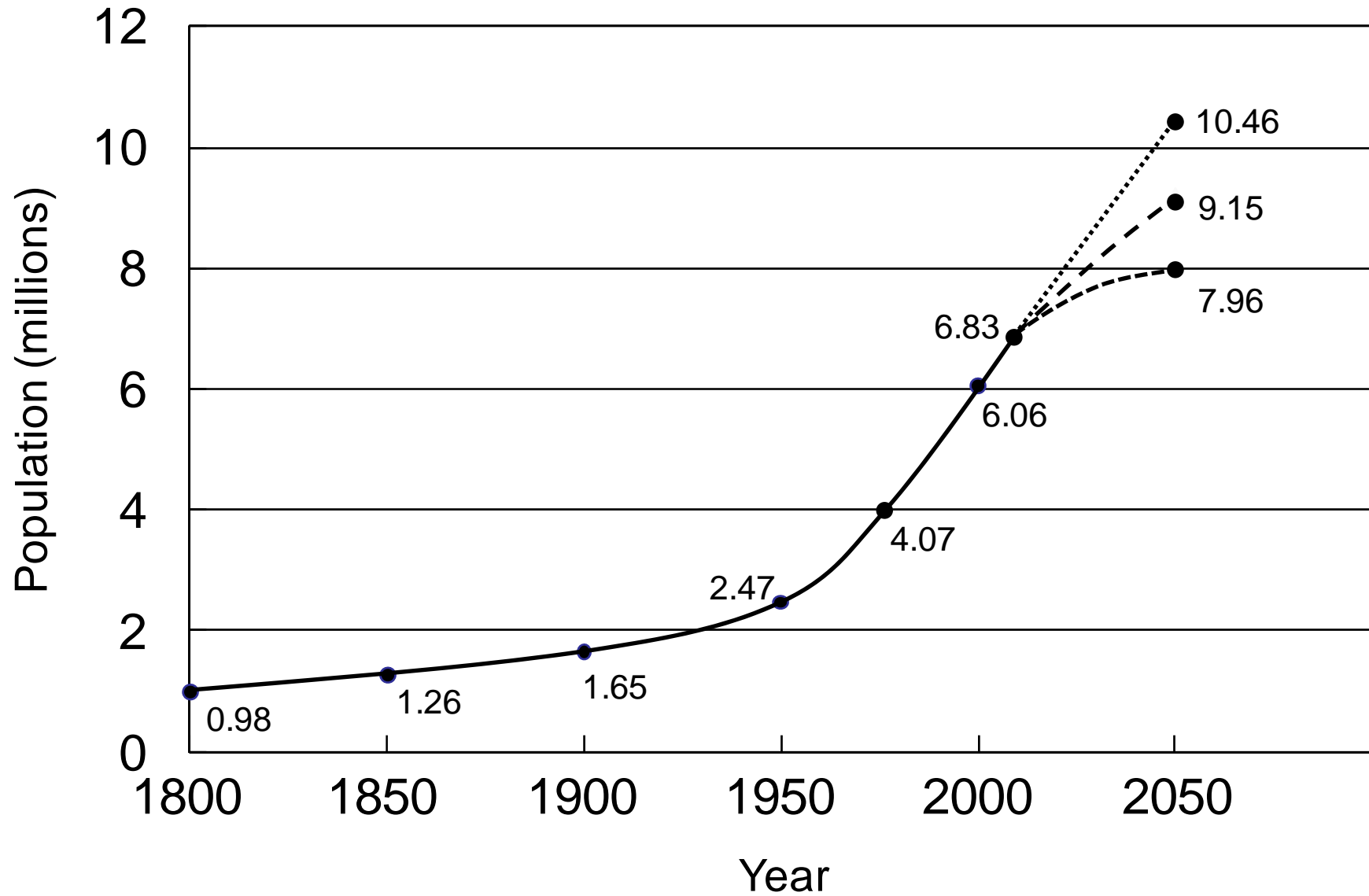


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# Demand Drivers

- **Population growth:** Unprecedented during the second half of the twentieth century, mainly due to an “escape from premature mortality,” but clearly decelerating now, because of diminished human fertility.
- **Increased per-capita consumption:** Particularly in impoverished settings, diets have improved as incomes have risen. In particular, higher incomes have caused per-capita consumption of livestock products (and feed grains) to increase. However, these trends, like population growth, will not continue indefinitely.

# Global Population, 1800-2050



# The Economist

OCTOBER 31ST–NOVEMBER 6TH 2009

[Economist.com](http://Economist.com)

Obama's paradoxical first year  
Capital floods into India  
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Van Gogh's luminous letters

# Falling fertility

How the population problem is solving itself



## Revolution in Human Fertility

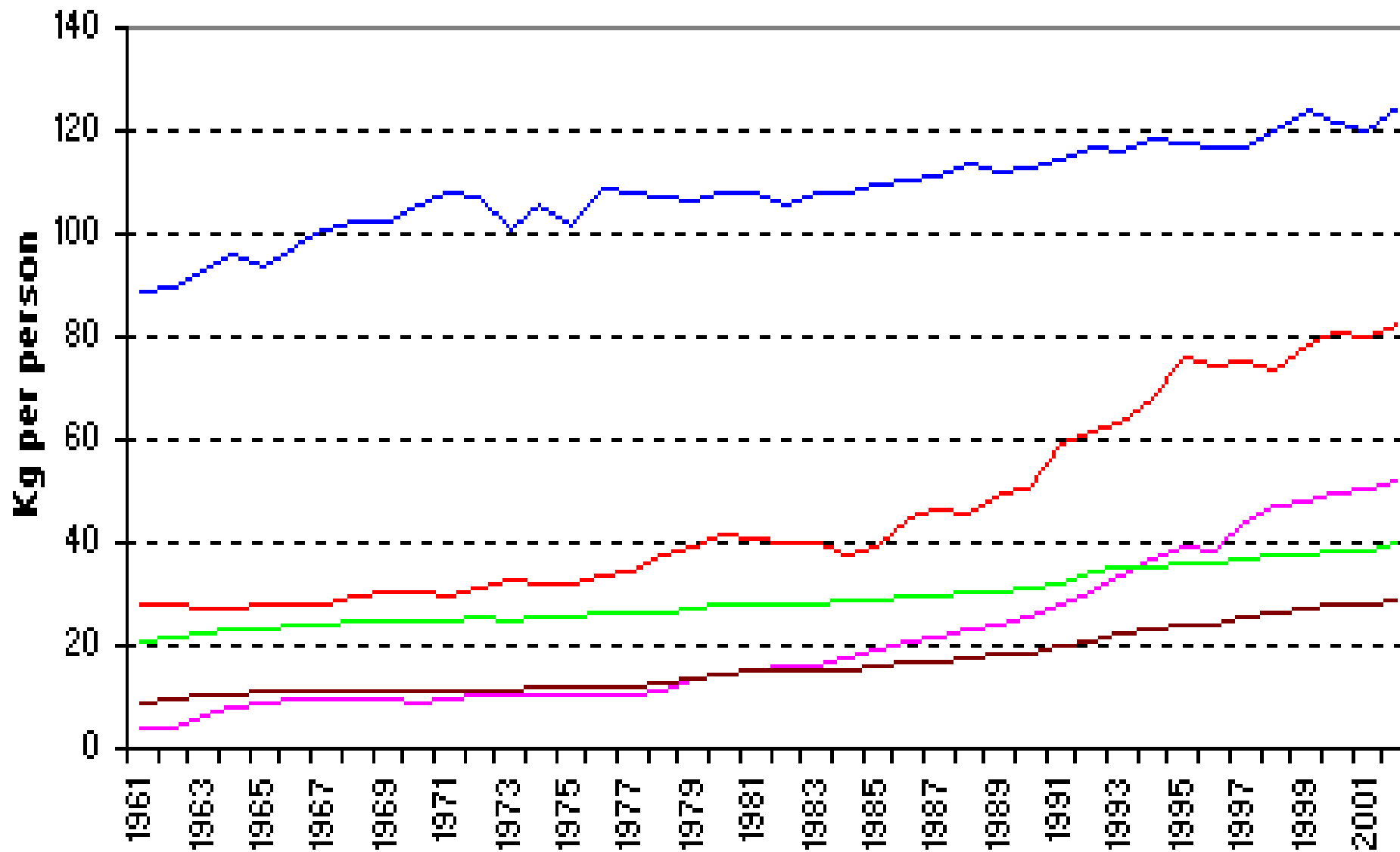
<b>Births per woman in:</b>	<b>1982</b>	<b>2007</b>
High-Income Nations	1.9	1.8
E. Europe & Former USSR	2.5	1.7
E. & S.E. Asia	3.1	1.9
S. Asia	5.2	2.9
Latin America & Caribbean	4.2	2.4
Middle East & N. Africa	6.2	2.8
Sub-Saharan Africa	6.7	5.1

## Growth in GDP per Capita (% p.a.)

Region (2007 GDP p.c., PPP-adj.)	1965-99	2000-07
High-Income Nations (\$36,341)	2.4	1.7
E. Europe & ex-USSR (\$11,262)	0.0	6.1
E. & S.E. Asia (\$4,969)	5.6	8.0
S. Asia (\$2,532)	2.4	5.5
Lat. Am. & Caribbean (\$9,678)	1.4	2.1
Mideast & N. Africa (\$7,402)	0.1	3.2
Sub-Saharan Africa (\$1,870)	-0.2	2.8

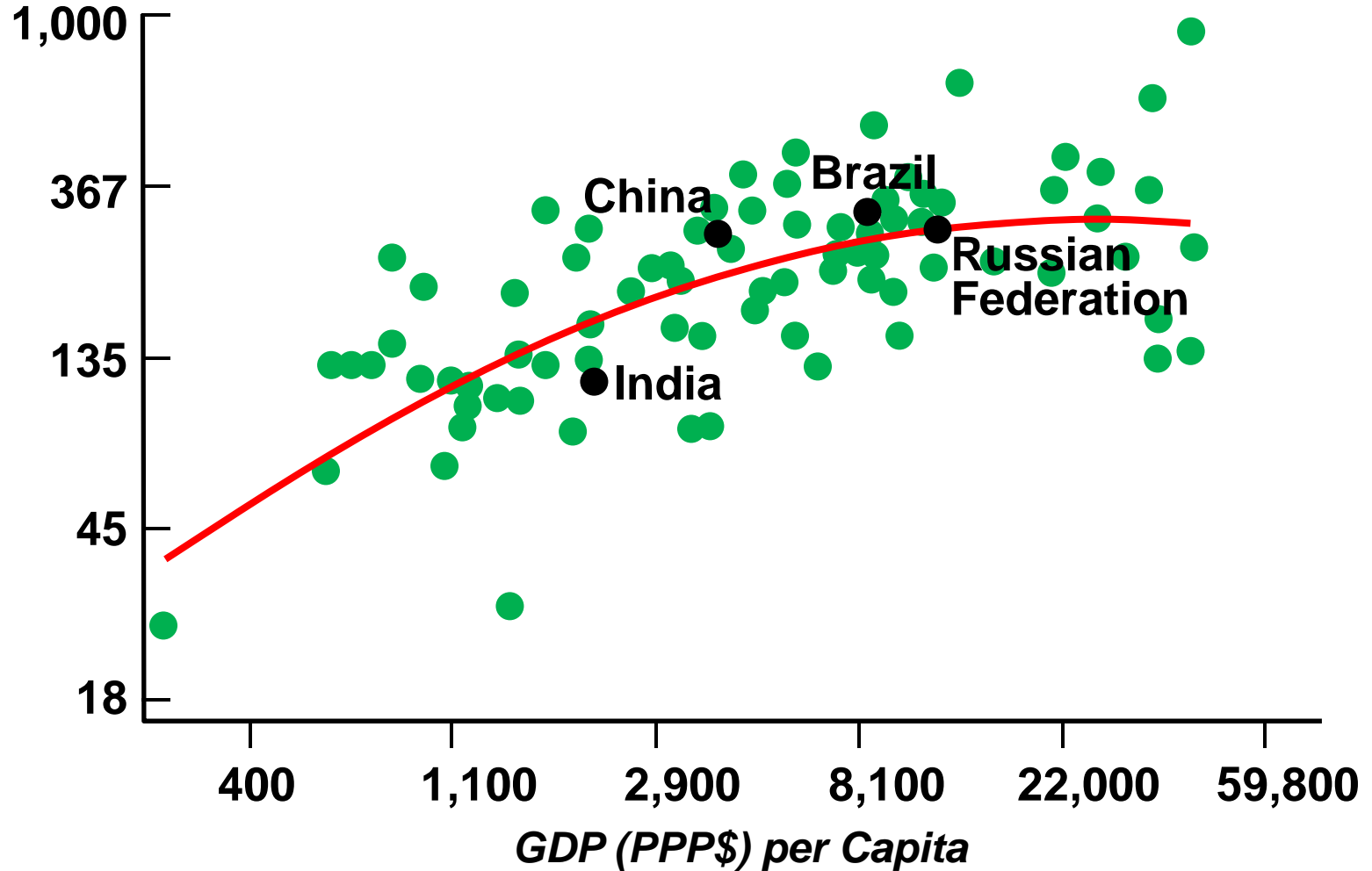
# Global Meat Consumption per capita

— Brazil — China — Developing Countries — World — USA



# Grain Consumption and Living Standards

*Kg of Grain Consumed  
per Capita (Log scale)*





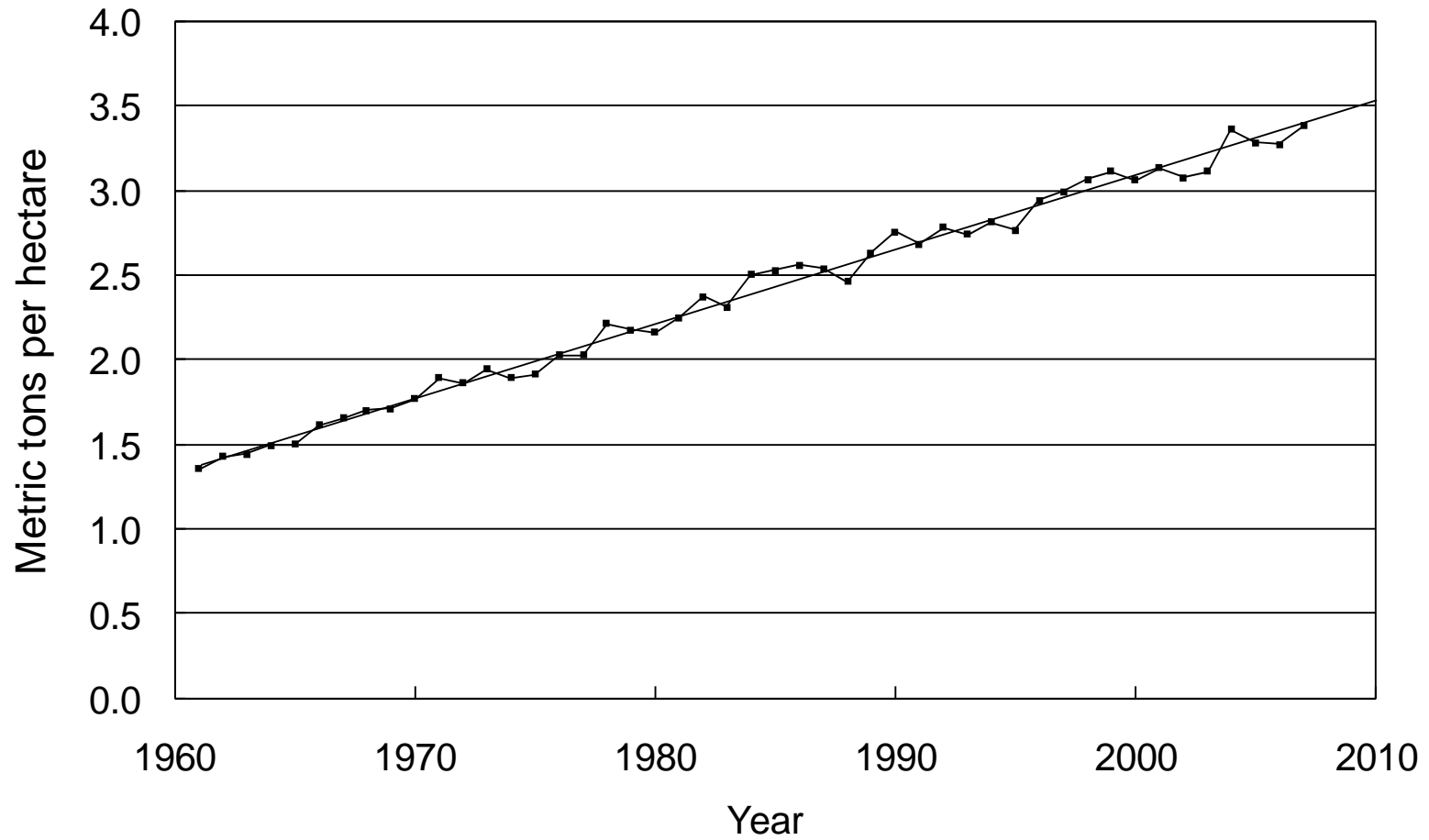
## Global Supply Trends, 1961 to 2007

- Farmed Area:
  - 43.0% increase in land planted to crops;
  - 9.4% expansion in grazing land; and
  - 10.7% increase in total agricultural land use.
- Average yield of cereals (> 60% of human diet, including feed grains) has more than doubled.

## Increases in Cropped Area

	Million Hectares in 2007	Change since 1961 (%)
Cereals	696	7.4
Oil Crops	249	118.4
Pulses	72	12.5
Roots and Tubers	53	10.4
Fruits and Vegetables	107	118.4
Others	843	73.1

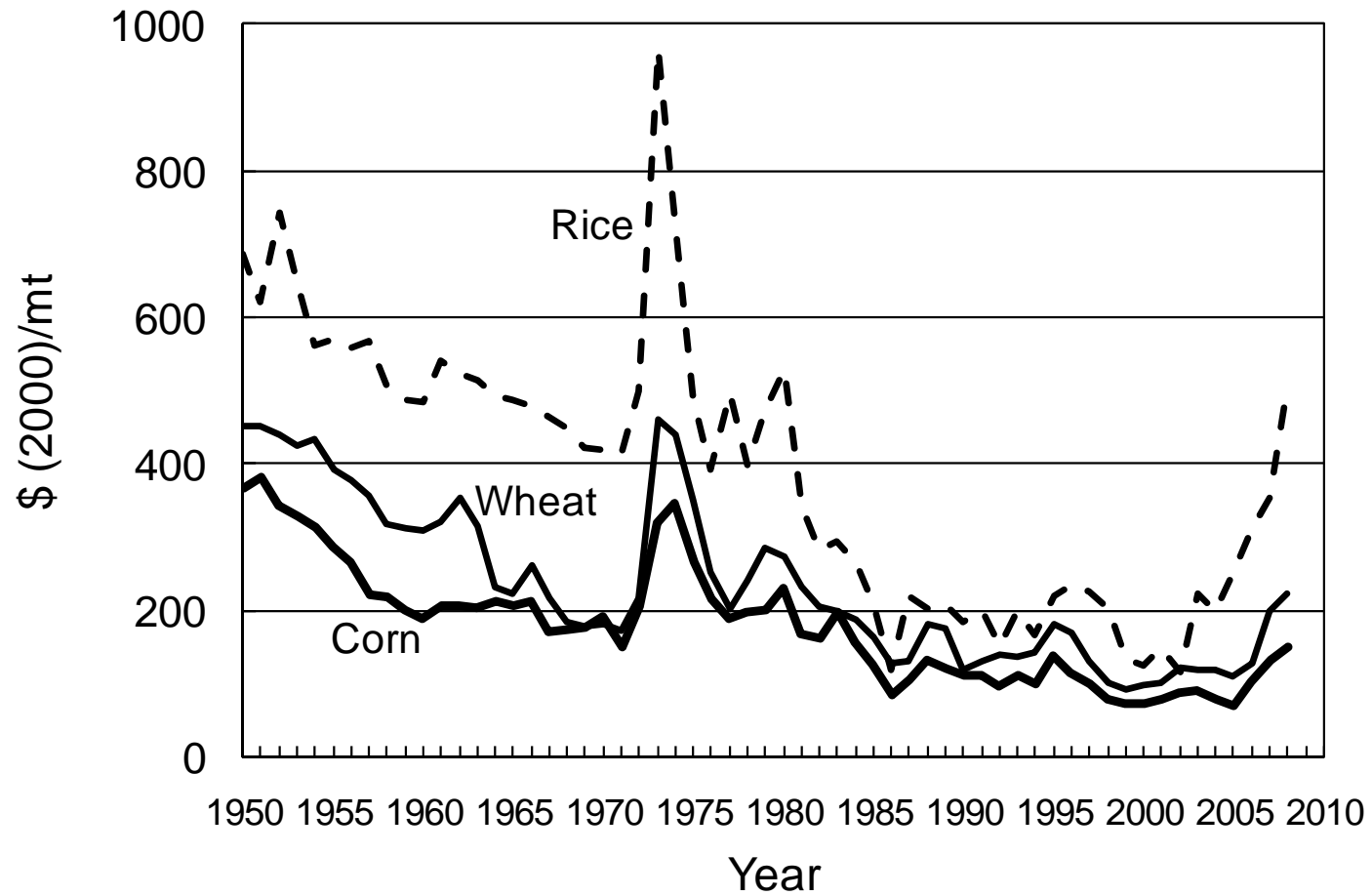
# Growth in Global Cereal Yields



## Diminishing Food Scarcity

- Gains in per-capita production from 1961 to 2007:
  - +98% in Asia;
  - +73% in South America; and
  - 2% in Sub-Saharan Africa.
- Real prices of grain declined by 75% between 1950 and middle 1980s.

# Real Grain Prices (2000 \$), 1950 to 2008



# Demand and Price Trends, 2009 to 2050

(assuming 52% supply growth during this period)

Population in 2050 (billions)	Annual Growth in per-capita Food Consumption, 2009-2050 (%)	Total Growth in Food Demand, 2009-2050 (%)	Total Change in Food Prices, 2009-2050 (%)
7.96	0.2	27	-50
9.15	0.3	52	0
10.46	0.3	73	42

# Future Challenges in the Food Economy

- Climate change.
- Water scarcity and pricing.
- Technological improvement.
- Biofuel development.
- China and India

# THE WORLD FOOD ECONOMY

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