

Feeding the World's Hungry: Financing More Efficient Food Assistance

Global Conference 2010

**Feeding the World's Hungry:
Financing More Efficient Food Assistance**

Tuesday, April 27, 2010; 2:30 - 3:45 PM

Moderator:

James Moglia, Executive Managing Director, BMO Capital Markets

Speakers:

Mary Chambliss, Former Deputy Administrator, USDA Foreign Agricultural Service

Michael Klein, Special Advisor, U.N .World Food Programme

Ejnar Knudsen, Co-Portfolio Manager of the Agriculture Fund, Passport Capital

Vijaya Ramachandran, Senior Fellow, Center for Global Development

Food security

Definition

When all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.

Source: Food and Agriculture Organization of the United Nations.

Milken Institute–Gates Foundation

Financial Innovations Lab *Top recommendations*



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Barrier: Unpredictable funding

- Issue food assistance bonds backed by donor commitments

Barrier: Price risk

- Make forward purchases
- Use call option contracts

Barrier: Supply risk

- Tap public-sector grain reserves
- Arrange tax credits for private-sector companies to tap their stocks at the tax-free price



Source: Milken Institute, "Feeding the World's Hungry: Fostering an Efficient and Responsive Food Access Pipeline" (October 2009).



United Nations Millennium Development Goals

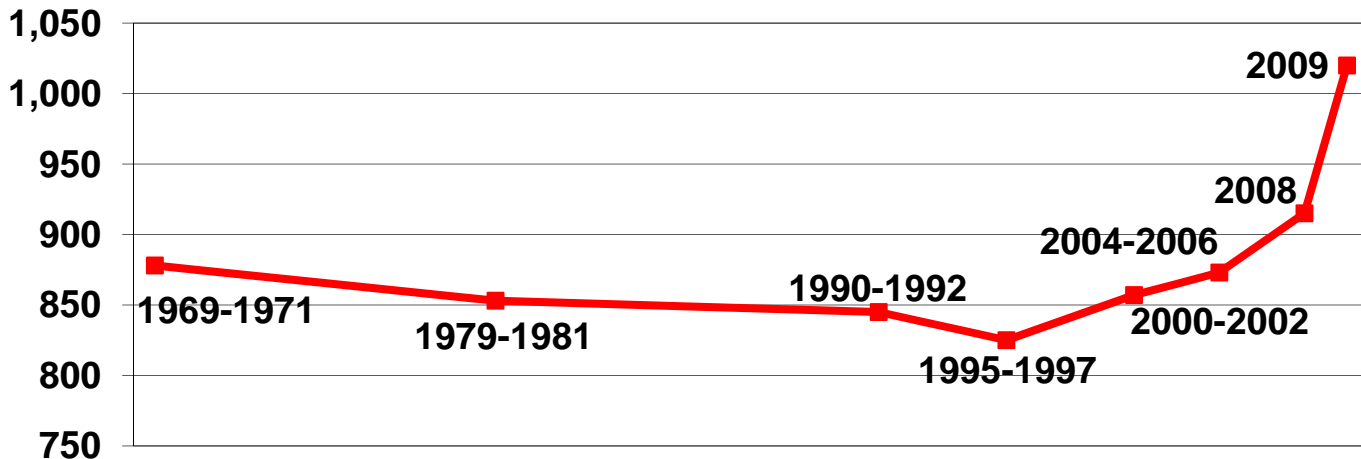
- Adopted by world leaders committing their nations to reduce extreme poverty by 2015
- Eight goals:
 - **Eradicate extreme poverty and hunger**
 - Achieve universal primary education
 - Promote gender equality and empower women
 - Reduce child mortality
 - Improve maternal health
 - Combat HIV/AIDS, malaria and other diseases
 - Ensure environmental sustainability
 - Develop a global partnership for development

Source: United Nations.

Number of undernourished in the world

1969 - 2009

Millions of people



Source: Food and Agriculture Organization of the United Nations.

Sixty-five percent of the world's hungry live in only seven countries

Country	Undernourished as a percent of world total
India	29%
China	15%
Democratic Rep. of the Congo	5%
Bangladesh	5%
Indonesia	4%
Pakistan	4%
Ethiopia	4%
TOTAL	65%

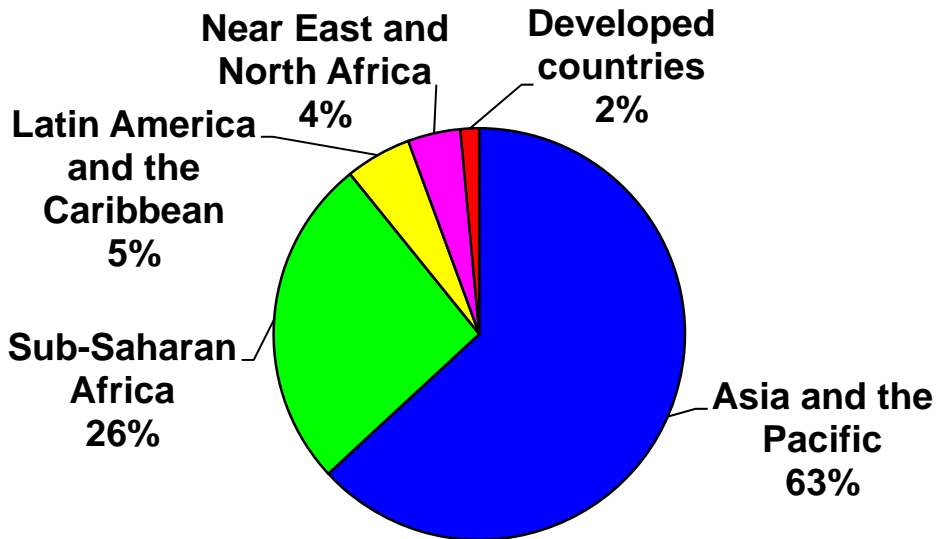
Source: Food and Agriculture Organization of the United Nations.

Undernourishment in 2009 by region



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Total = 1.02 billion people

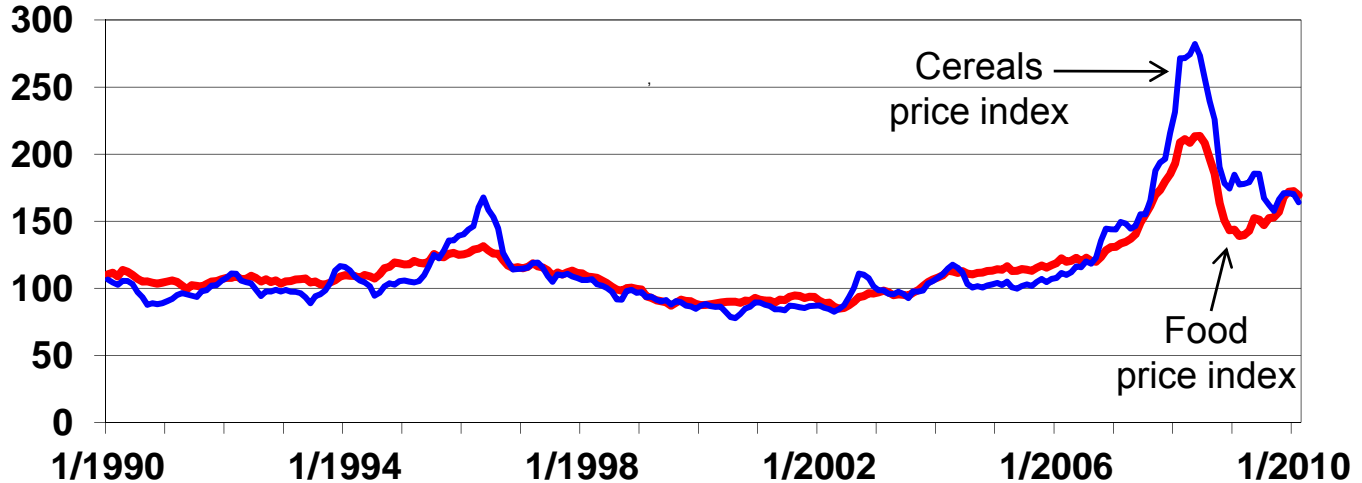


Source: Food and Agriculture Organization of the United Nations.

Cereals prices more than doubled in 2008

FAO cereals and food price indices

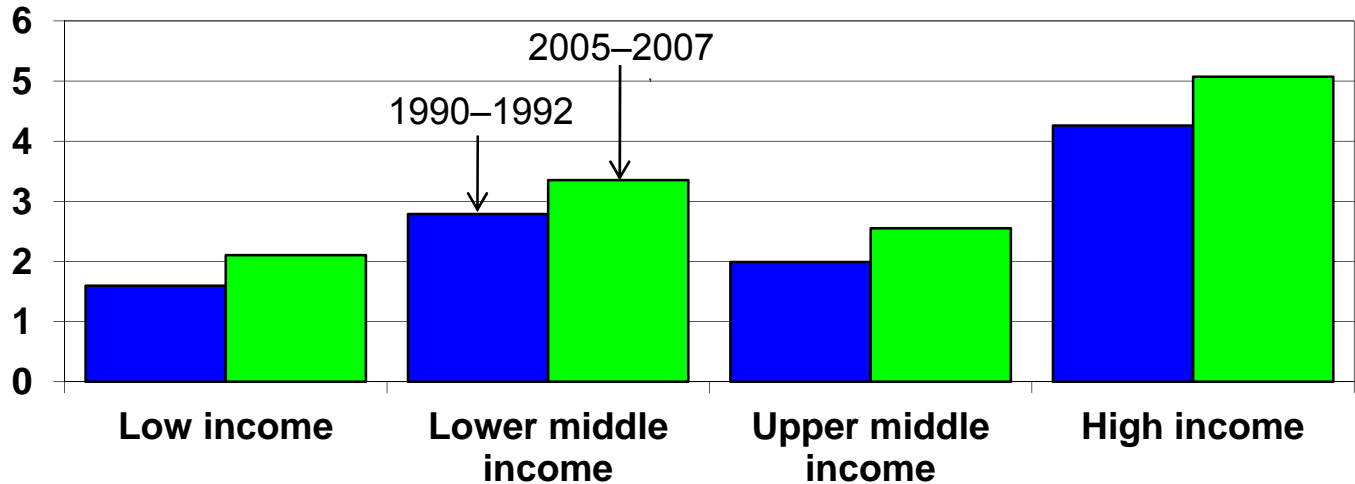
Index level (2002-2004 = 100)



Source: Food and Agriculture Organization of the United Nations.

Cereal yield in low-income countries is 60 percent lower than in high-income countries

Kilograms per hectare (thousands)

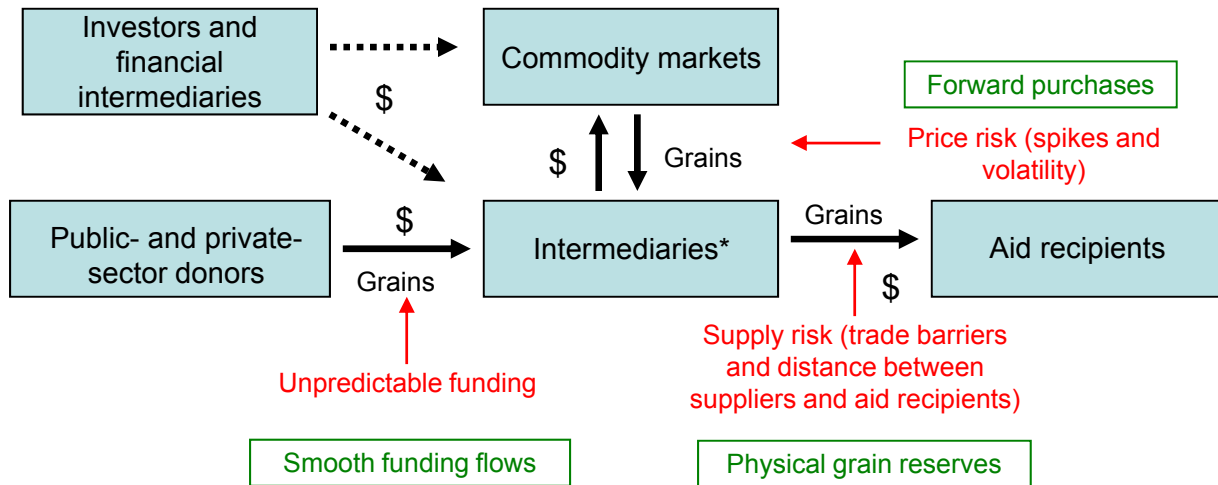


Source: World Bank.

Challenges to delivering food assistance in an efficient and timely manner

- Price risk (e.g., spikes and volatility)
- Distance between suppliers and aid recipients
- Lack of deep financial markets in recipient countries
- Variable demand
- Uncertain global food production (e.g., due to climate change, biofuels, weather or conflicts)
- Security
- Unpredictable funding

Possible solutions to combat food crises



Source: Milken Institute.

* Intermediaries can be humanitarian aid agencies, governments and other parties.

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Proposed solutions to funding challenges

- Apply the Advance Market Commitment model to food assistance delivery
- Issue food assistance bonds backed by donors
- Create a swing donor facility
- Guarantee a base funding level to humanitarian orgs
- Use a multi-year funding structure

Source: Milken Institute, "Feeding the World's Hungry: Fostering an Efficient and Responsive Food Access Pipeline" (October 2009).

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Proposed solutions to price risk challenges

- Make forward purchases
- Use call option contracts
- Employ a financial hedging strategy

Source: Milken Institute, "Feeding the World's Hungry: Fostering an Efficient and Responsive Food Access Pipeline" (October 2009).

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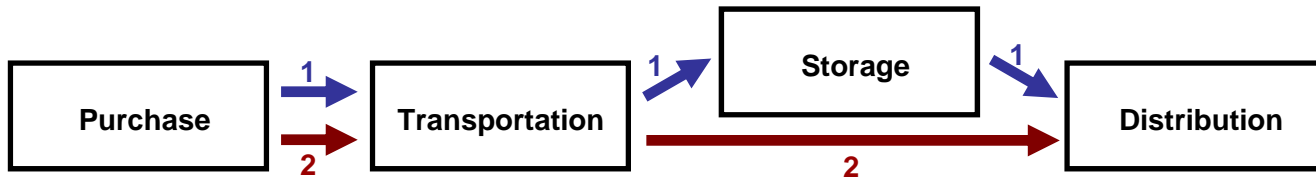
Proposed solutions to supply risk challenges

- Tap public-sector grain reserves
- Arrange tax credits for private-sector companies to tap their stocks at the tax-free price
- Set up pre-positioned food stocks near areas in need
- Buy call options with domestic animal feeders or biofuels producers

Source: Milken Institute, "Feeding the World's Hungry: Fostering an Efficient and Responsive Food Access Pipeline" (October 2009).



Food access pipeline



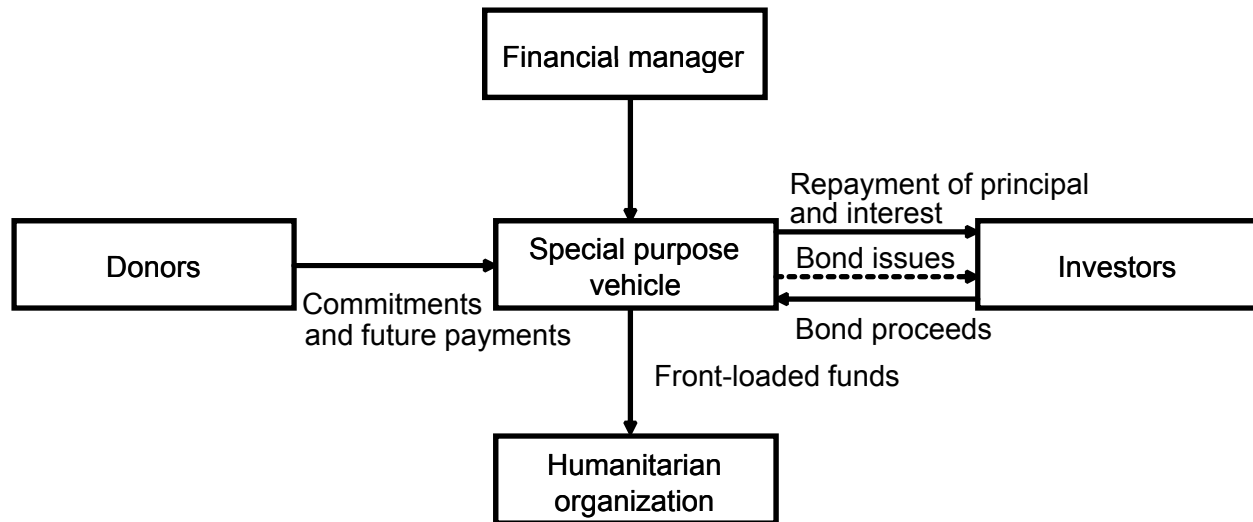
Source: Milken Institute.

Traditional procurement tools used by food assistance organizations

Tool	Description	Disadvantages
Reserves	Purchased in advance, shipped to destination, and stored	<ul style="list-style-type: none">• Warehousing costs• Risk of damage or loss• Little flexibility on volume / delivery locations• Can crowd out private sector
In-kind donations	Donors contribute commodities, which are shipped to destination	<ul style="list-style-type: none">• Risk of long lead times, high transport costs• Disincentives to local / regional market development
Spot purchases	Purchases made when funding is confirmed, then shipped to destination	<ul style="list-style-type: none">• Risk of high commodity and transport costs, long lead times• Performance risk• Difficult to budget/plan• Little flexibility on volume / delivery locations

Source: Julie Dana, World Bank.

How a food assistance bond would work

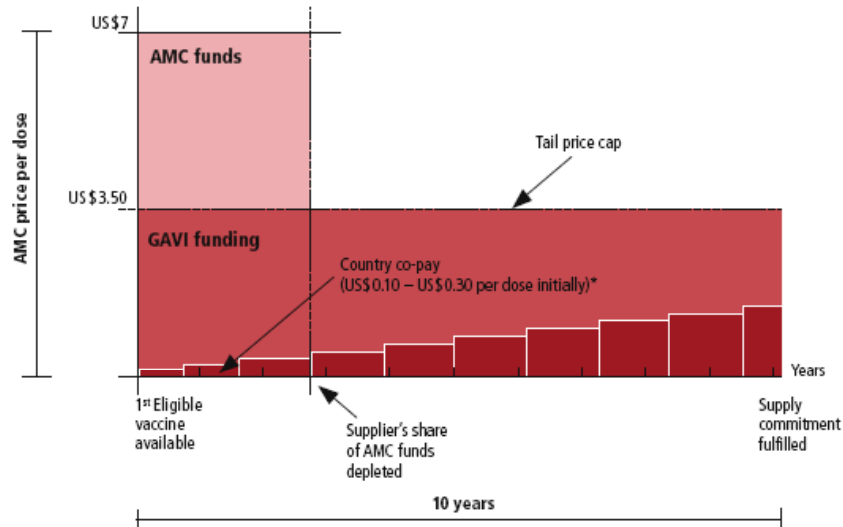


Source: Milken Institute.

Advance Market Commitment for pneumococcal vaccines



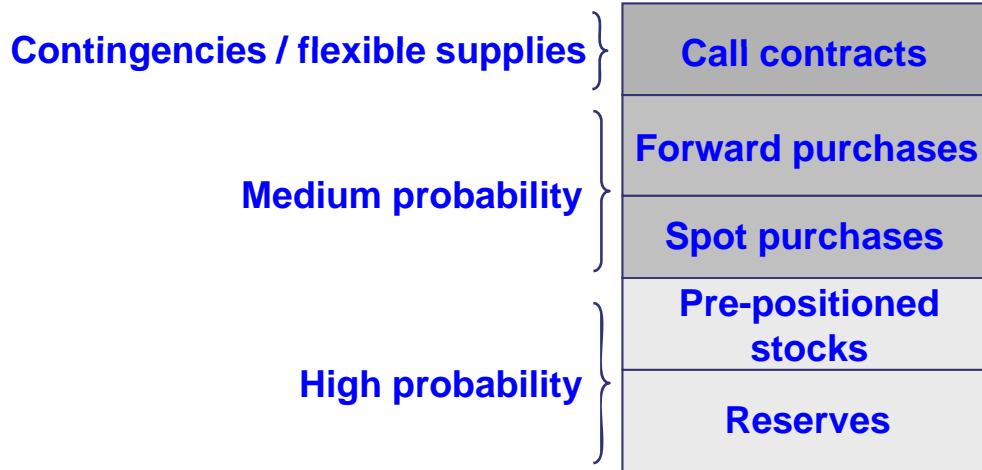
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Source: GAVI.

*Co-financing levels will be in line with the applicable GAVI co-financing policy.

A risk management approach to commodity procurement



Source: Julie Dana, World Bank.

Alternative procurement tools for food assistance organizations

Tool	Description
Forward purchases	Purchases with set or variable pricing, for fixed or optional delivery points at a later date; can be long-term supply arrangements
Call option contracts	Buyer has the right but not the obligation to take delivery of the goods
Financial hedging using futures or options	Use financial contracts on established futures exchanges to lock in prices (futures) or establish price caps (options)

Source: Julie Dana, World Bank.

Global Agriculture and Food Security program



New multi-donor trust fund to tackle global hunger and poverty

- Initial contribution of \$880 million from the U.S., Canada, Spain, South Korea, and the Gates Foundation
- Created to help implement some of the \$22 billion in pledges made by G-8 leaders
- Fund will have public and private sector accounts:
 - Public sector account will provide aid for better irrigation systems, linking farmers to markets and building post-harvest storage infrastructure.
 - The private sector account will provide innovative financing to increase the commercial value of small and medium-sized agri-businesses and farmers.

Source: U.S. Department of Treasury.

Panelists' slides



James Moglia

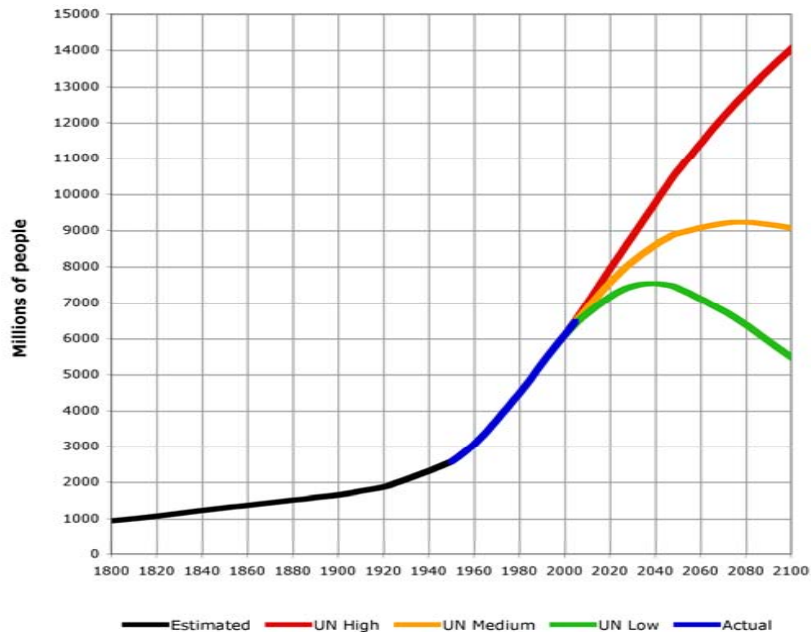
Executive Managing Director

BMO Capital Markets

World population, 1800–2100



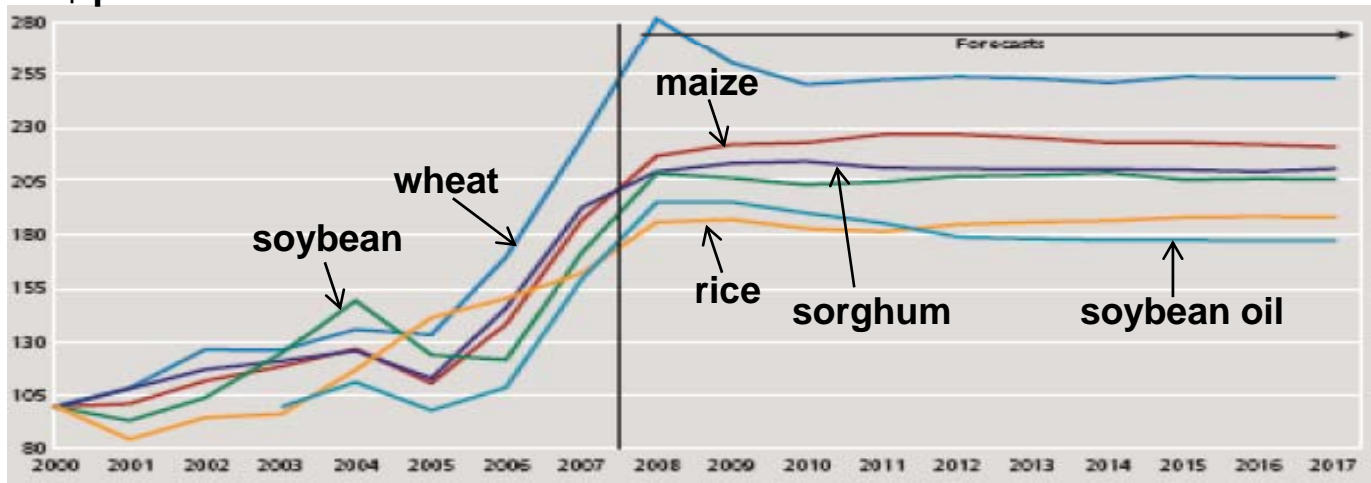
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Sources: United Nations and US Census Bureau.

Historical and projected prices of maize, wheat, soybean, soybean oil and sorghum

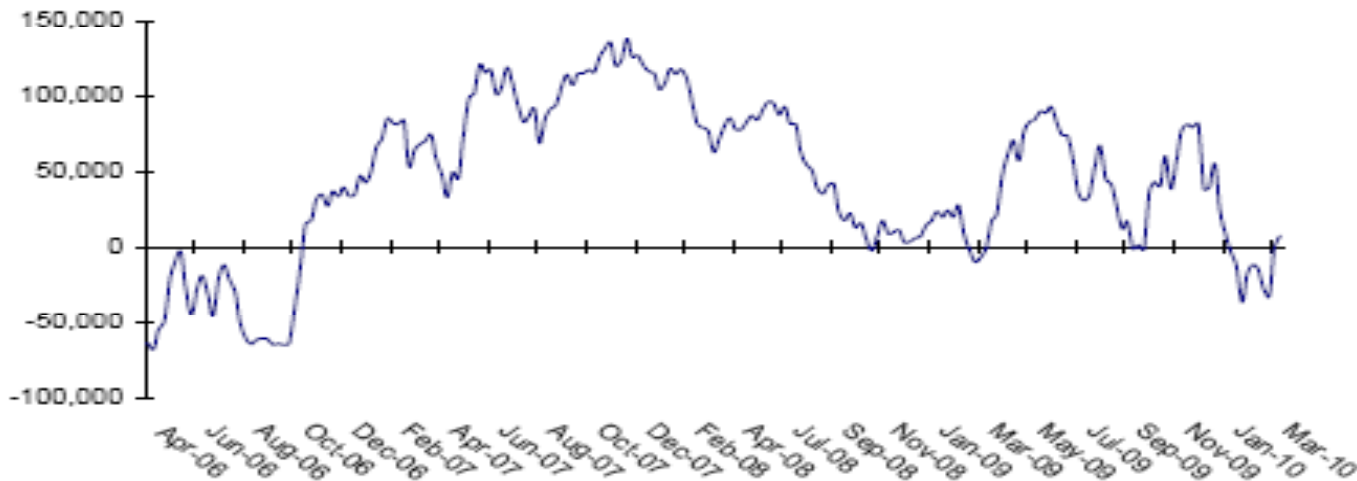
US\$ per metric ton



Source: World Food Programme.

Net long soybean positions by large speculators

Thousands



Sources: CFTC and BMO Capital Markets

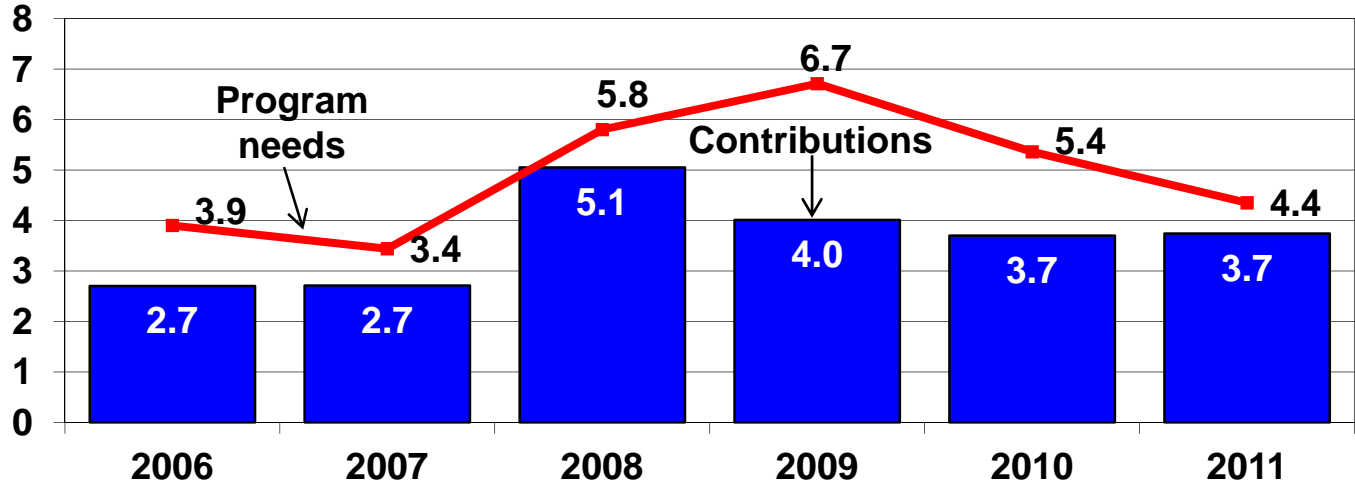
Needs vs. contributions



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World Food Programme

US\$ billions

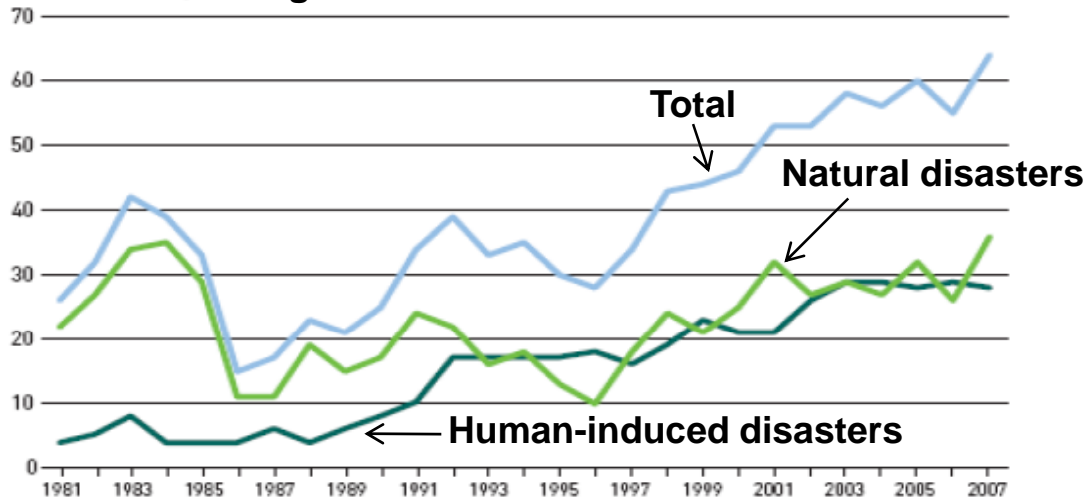


Sources: Center for Global Development, World Food Programme.

Note: 2010 and 2011 are projections.

Occurrence and causes of recent food emergencies

Number of emergencies

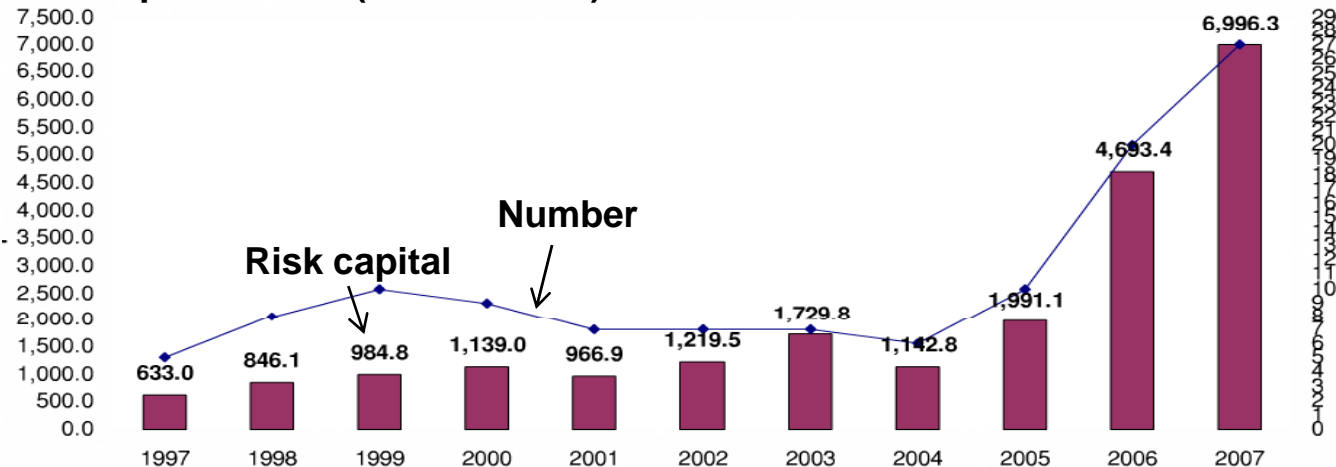


Source: Food and Agriculture Organization.

Illustration of capital markets solutions: Catastrophe bonds

Risk capital issued (US\$ millions)

Number of issuances



Source: GC Securities.



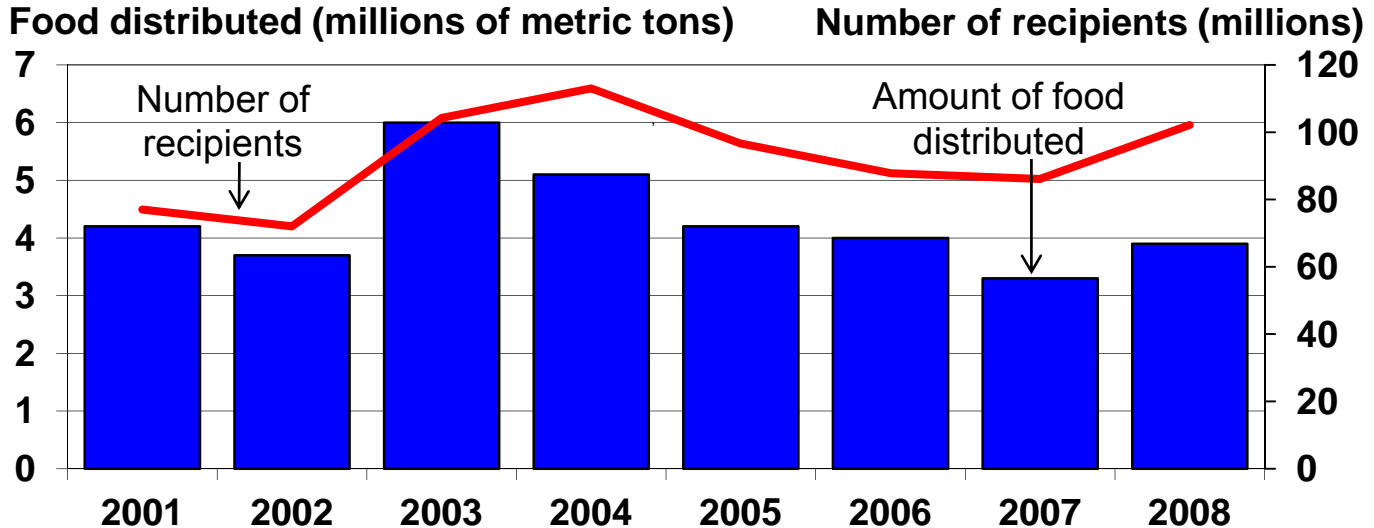
Vijaya Ramachandran
Senior Fellow
Center for Global Development

FINANCING FOOD ASSISTANCE:

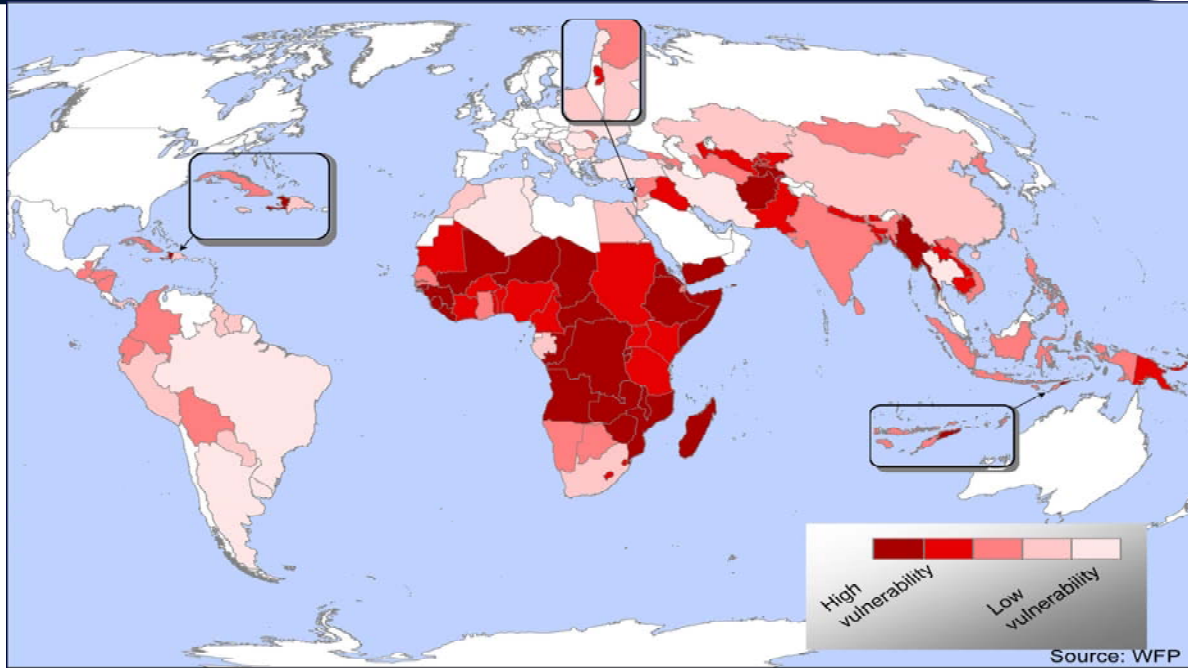
Options for the World Food Programme to Save Lives and Dollars

Vijaya Ramachandran
Benjamin Leo
Owen McCarthy

World Food Programme is the largest provider of food aid in the world



WFP's group of "high vulnerability" countries does not vary much from year to year...



WFP's "top ten" account for 60 percent of its budget (\$2.5 billion in 2008)

- Afghanistan
- Burundi
- DRC
- Ethiopia
- Kenya
- Somalia
- Sudan
- Tanzania
- Uganda
- Zimbabwe

The WFP could not really respond to the food price crisis in 2008



- In 2008, the number of hungry people rose by 100 million.
- Donor contributions increased by 86 percent in 2008 in response.
- Due to the lack of predictability and timing of these donations, rising prices, and the absence of a hedging strategy, the WFP only delivered 18 percent more food (by volume) to 27 percent more people.

Can the WFP move to a new business model?



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The scope for hedging

- Historical baseline
 - Utilize historical food deliveries as an indication of future operational plans.
- Projected needs filter
 - Incorporate the WFP's annual program projections, country program strategies, and early famine warning system to provide a forward-looking, demand-based check on projected hedging needs.
- Commodity filter
 - Determine the commodity mix of projected WFP country operations.

Multi-step hedging strategy

- Regional clustering
 - Pool relevant hedging projections on a regional basis.
- Operational timing
 - Utilize historical data and WFP's decades of country expertise to determine seasonal or monthly needs projections.
- Projected unrestricted donor contributions
 - Compare the relevant aggregated hedging and timing components against projected unrestricted donor contributions and relevant restricted cash contributions for the coming operational year.



Multi-step hedging strategy

- Commodity price projections
 - WFP may execute procurements at spot market prices if commodity prices are projected to decline.
 - Or it may use options contracts to provide maximum flexibility and account for any unforeseen changes in the price environment.
- Currency risk exposure
 - WFP operations are denominated in U.S. dollars, so there is potential currency risk for hedging contracts denominated in another foreign currency.
 - Currently, the WFP does limited currency hedging (dollar vs. euro).
 - Should be managed with currency-related derivatives (e.g., currency futures or swaps).

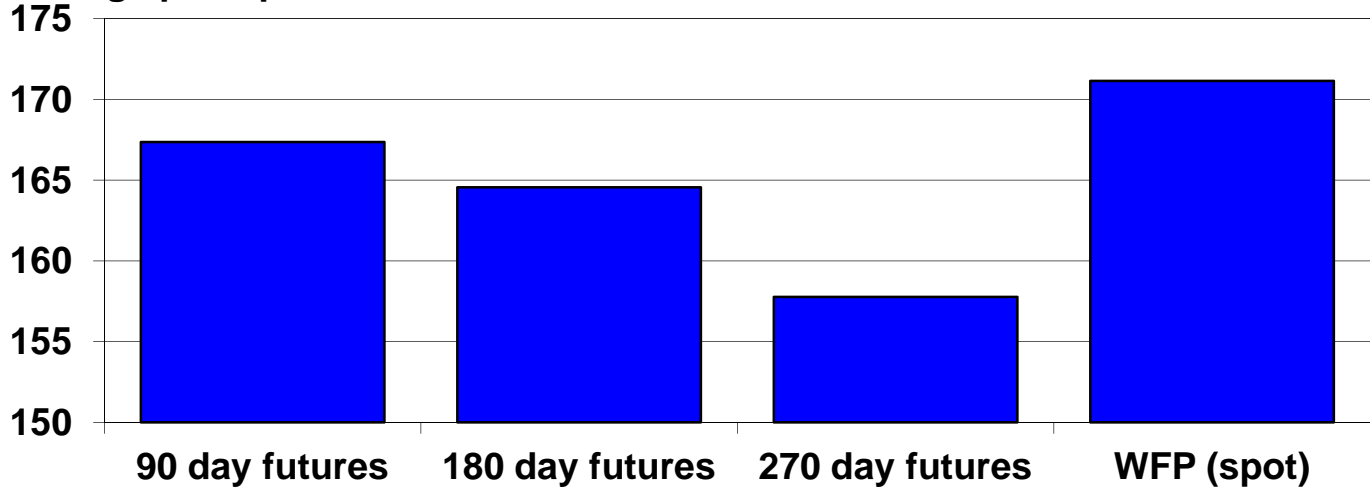
Example: Price of yellow maize



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Futures prices vs. spot price in SAFEX, 2001-2009

Average price per metric ton



Other potential benefits

- Predictability
- Reduction or elimination of delays in delivery
- Provides clear signal of government intent
- Supports local and regional trade
- Creates a defined space for the commercial sector to operate

Financial backstop options

- Commercial line of credit
 - Would be tapped as a last resort to address: hedging collateral requirements or short-term inter-temporal mismatches between contributions and food operations.
- International financial institution guarantee
 - The WFP could negotiate a credit guarantee arrangement with the World Bank or African Development Bank.
- Bilateral donor credit line
 - An individual or group of bilateral donors could provide a credit line, guarantee, and/or flexible advance contributions to support WFP's hedging.

Conclusion

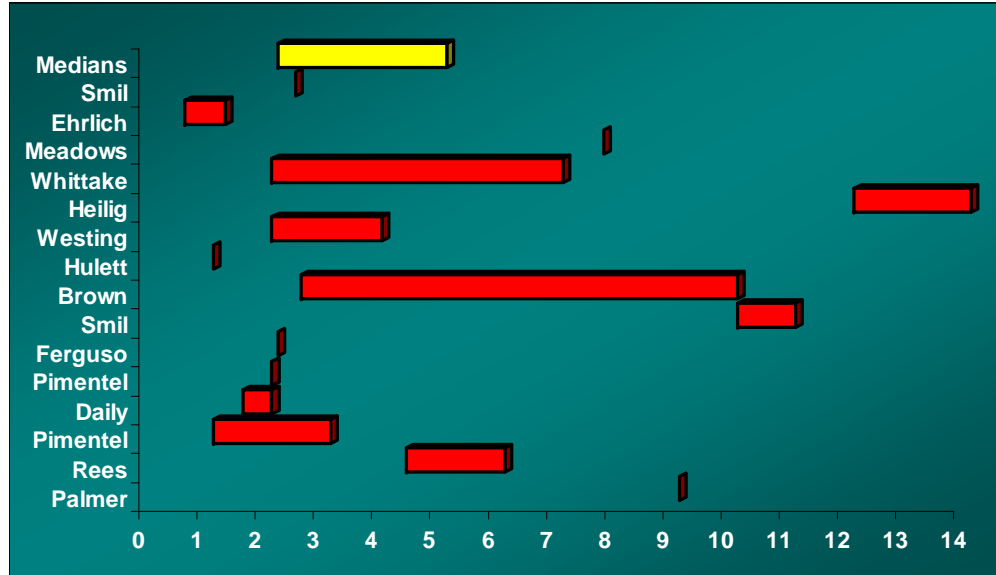
- The WFP can pilot a hedging exercise, perhaps starting out with a physical call option (with assistance from the World Bank).
- U.S. and other donors must do more to increase financial certainty and the share of unrestricted contributions so that the WFP can engage in futures markets.
- Goldman Sachs or others can provide underwriting services on a pro-bono basis.
- Commercial banks can provide a credit line.
- The World Bank can play a role in financial backstopping.

Ejnar Knudsen
Co-Portfolio Manager of the Agriculture Fund
Passport Capital

Earth's carrying capacity

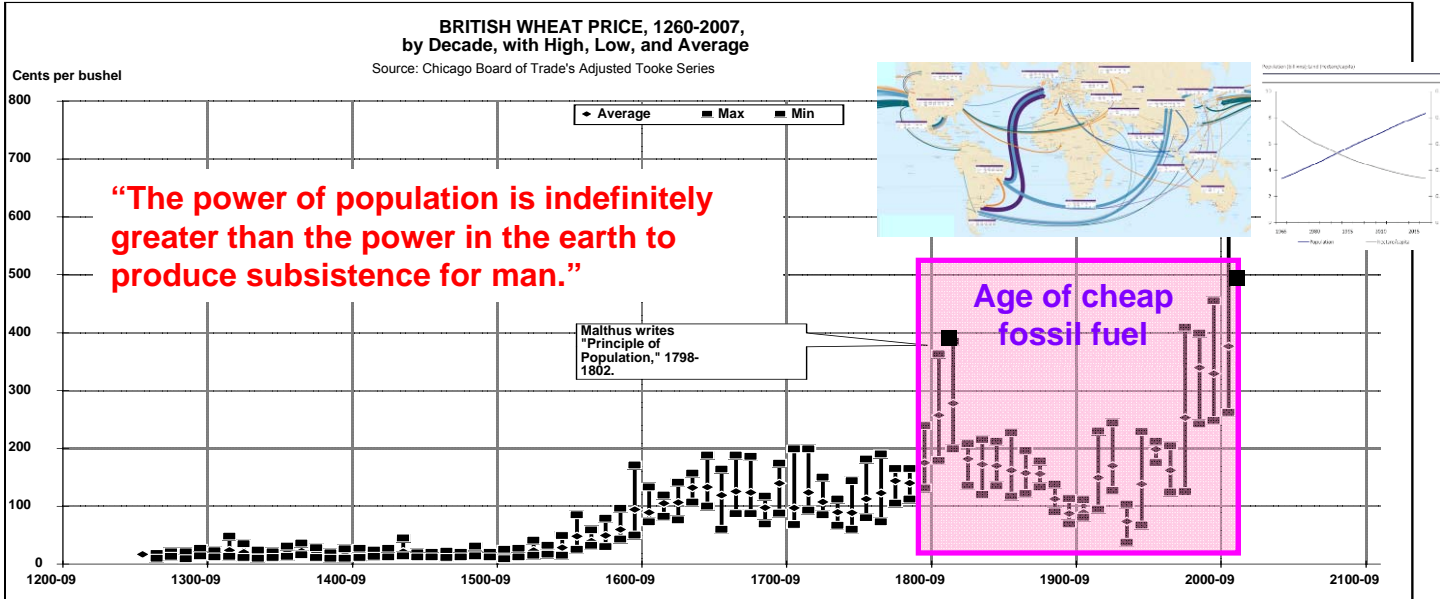


- Range
 - 0.5 to 14 billion people
- Biophysical capacity
 - 7.7 to 12.0 billion
- Social sustainability
 - 2.1 to 5.0 billion
- “Organic” – without chemical fertilizer
 - 2.4 billion people





1798/1802: Malthus' prediction – delayed?



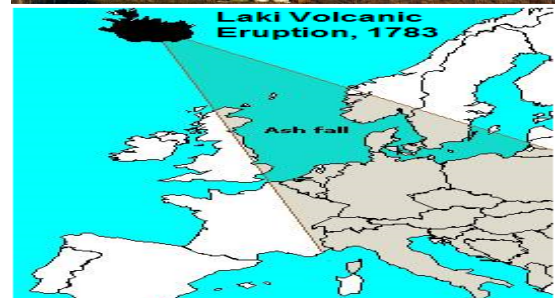
Barrier: Supply risk – policy shocks

- Malthus' prediction delayed due to technological innovations
 - More trade, more farmland, higher crop yields
 - Can we extend the Earth's carrying capacity to 9 billion people?
- Potential policy shocks that may reduce our Earth's carrying capacity
 - Climate change laws/carbon credit incentives
 - Conversion of cropland to other non-food crop uses
 - How many more people in the world will become undernourished if the U.S. converts 35 million acres of row crops to grow trees for carbon credits?
 - Increased production costs due to direct or indirect environmental taxes = higher worldwide food prices
 - “Sustainability” laws
 - Romantic-based definitions vs. science-based definitions used for defining “sustainable agriculture”



Barrier: Price risk – climate shocks

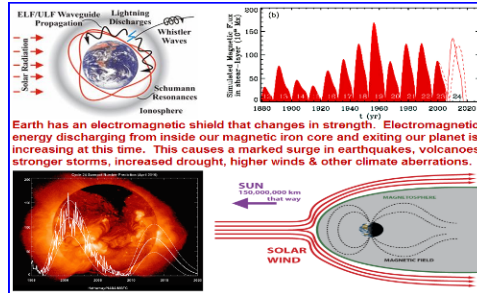
- The Laki volcano eruption in Iceland in 1783 lasted eight months.
- In North America, the winter of 1784 was the longest and one of the coldest on record.
- In France, a sequence of meteorological extremes contributed significantly to increasing poverty and famine that presumably played a role in triggering the French Revolution in 1789.



Source: Advanced Forecasting Corporation.

Barrier: Price risk – climate shocks

- 4.5+ yrs of climate change
 - Global warming
 - Global cooling
- Plan for disruptions in our just-in-time food supply
- Solving the problem for the current undernourished – will help prepare billions of people for these predictable climate “black swans”
- Every society is only three meals away from a revolution – this is not someone else’s problem



Fishmeal: 20% price jump