

# **The Global Food Crisis: Implications for the Developing World**

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# **The World Food Crises: Implications for the Food Security of developing countries**

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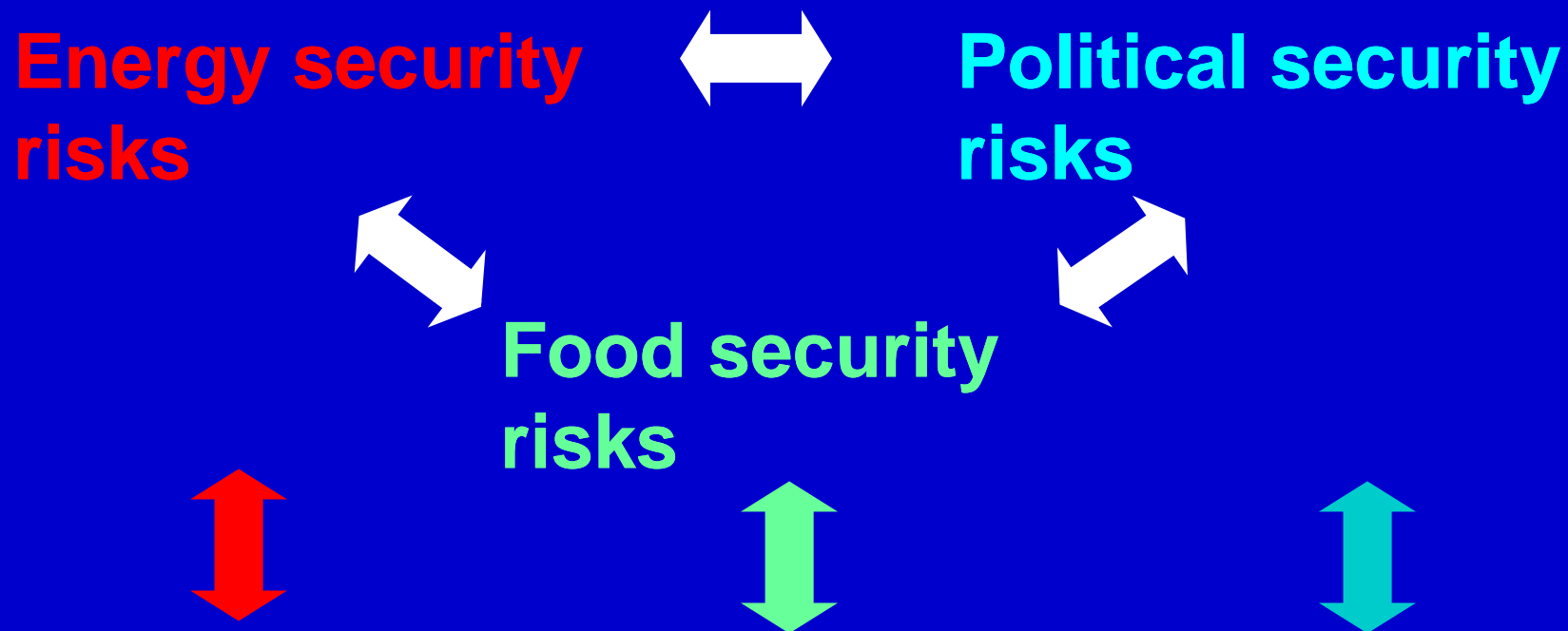
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VI Plenary Meeting of the Inter-Parliamentary Forum of the Americas (FIPA)  
OTTAWA, Canada  
September 13th to 15th 2009

## We have FOUR Crises

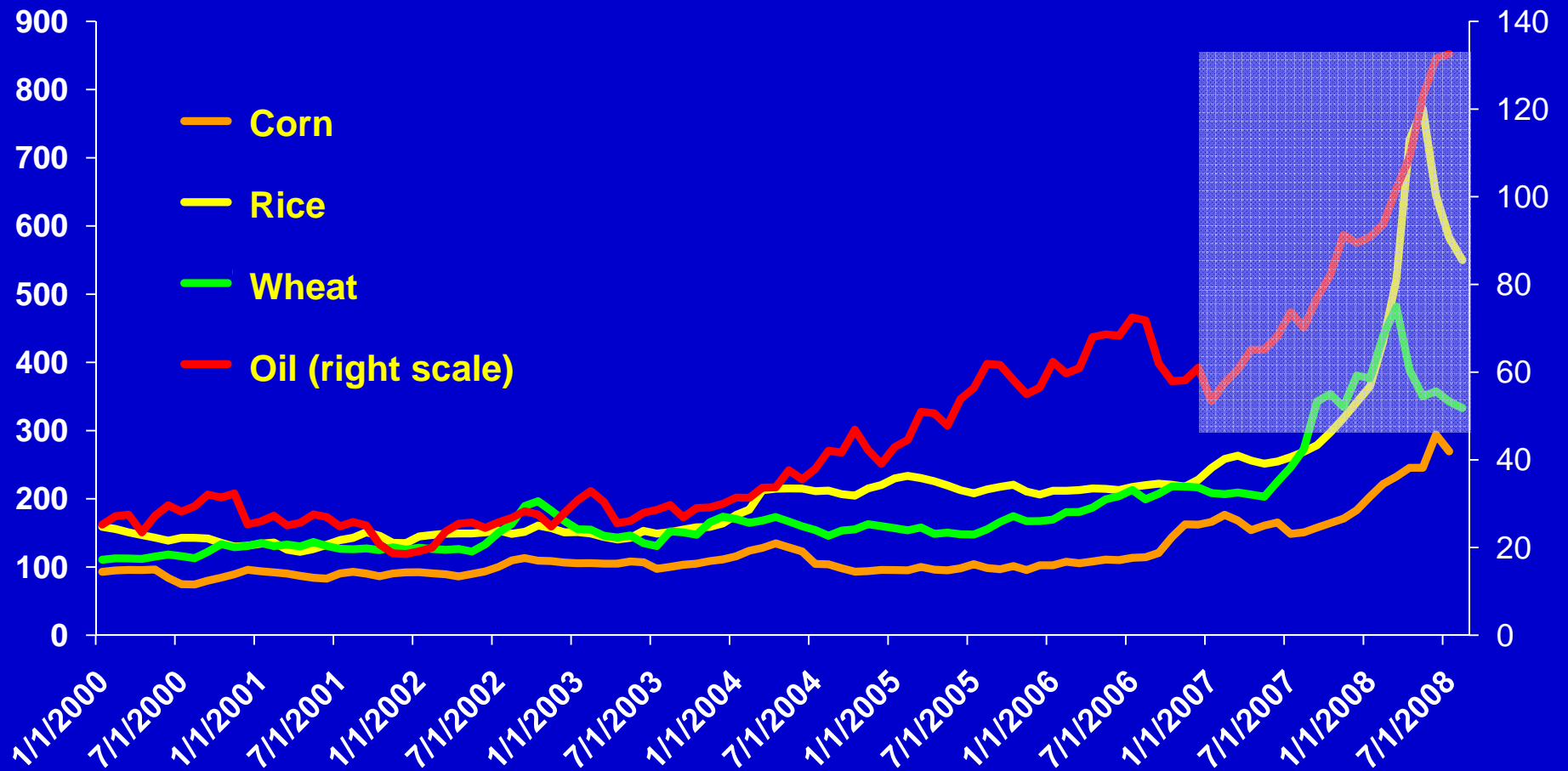
- **Food crisis** forced 200 million people into extreme poverty, half of them still there. 1.4 billions of people are still poor in developing countries
- **Fuel crises:** rise and fall of price of oil (variability), impact of food for fuel
- **Financial crisis:** Reduction in exports, commodity prices, remittances, tourism, FDI, aid, and food aid
- **Climate change!** More pressure over price variability

# The food crisis and economic recession tradeoffs

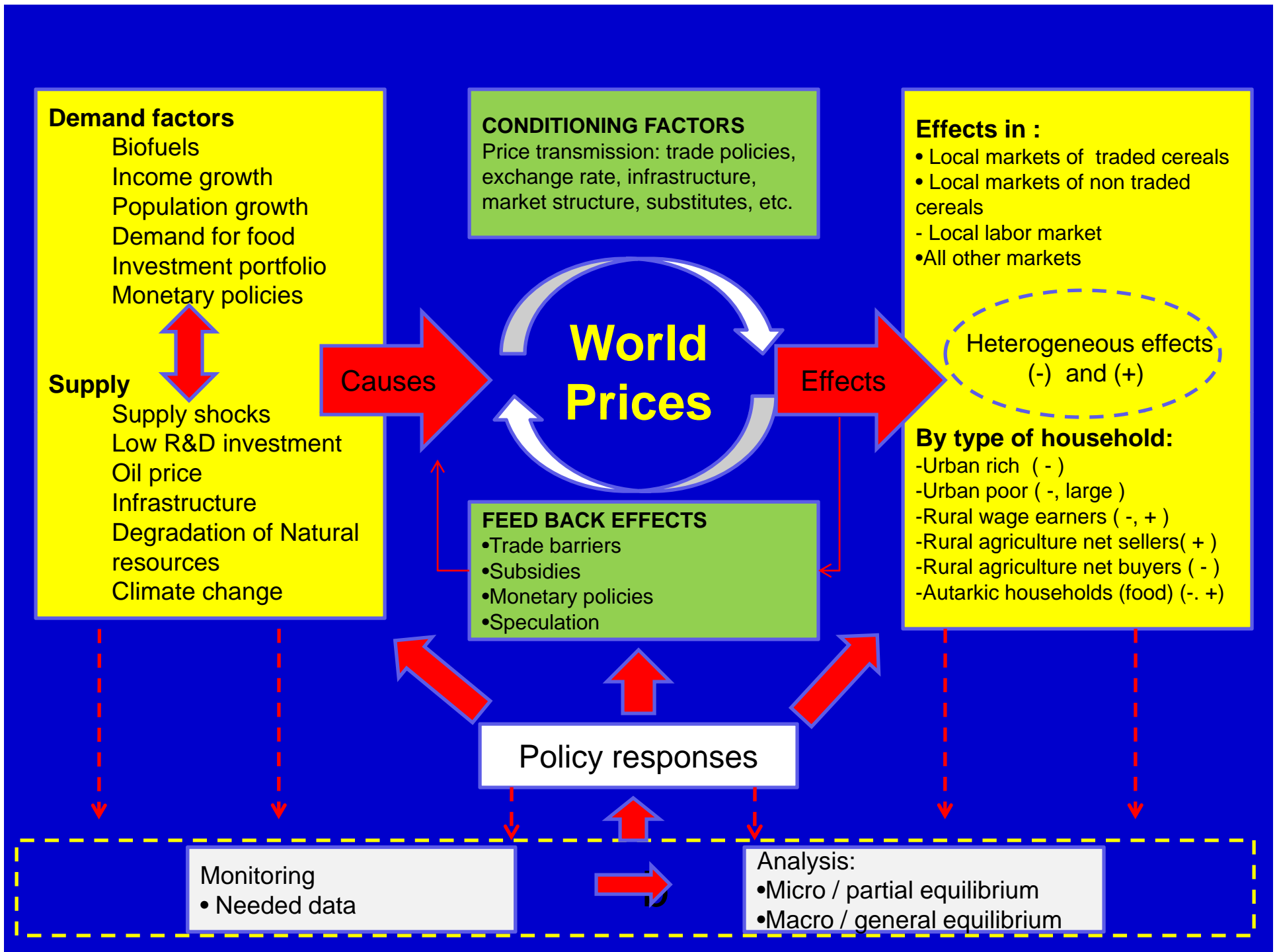


- + *Mass protests in more than 60 countries*
- + *The poor are the ones suffering the most and they do it silently*
- + *Inflation and macro-economic imbalances*
- + *Environmental sustainability consequences*

# Surge in cereal and oil prices



Sources: FAO 2008 y IMF 2008

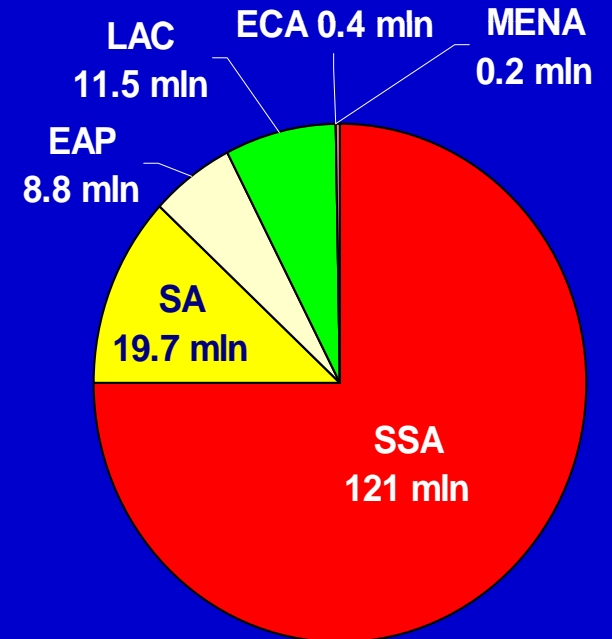
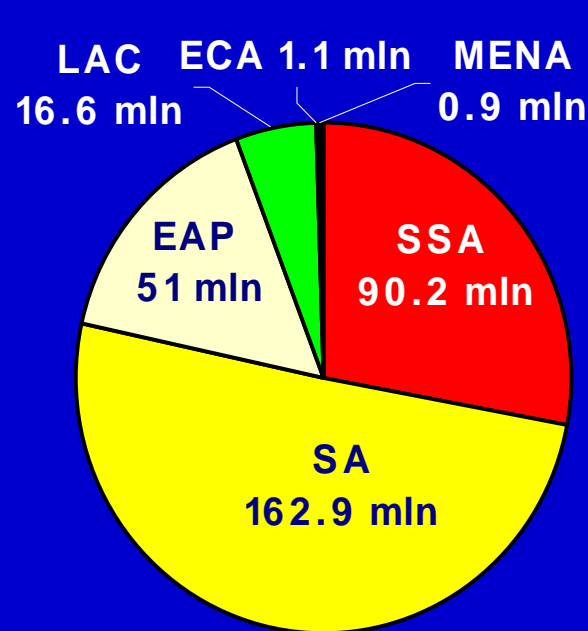
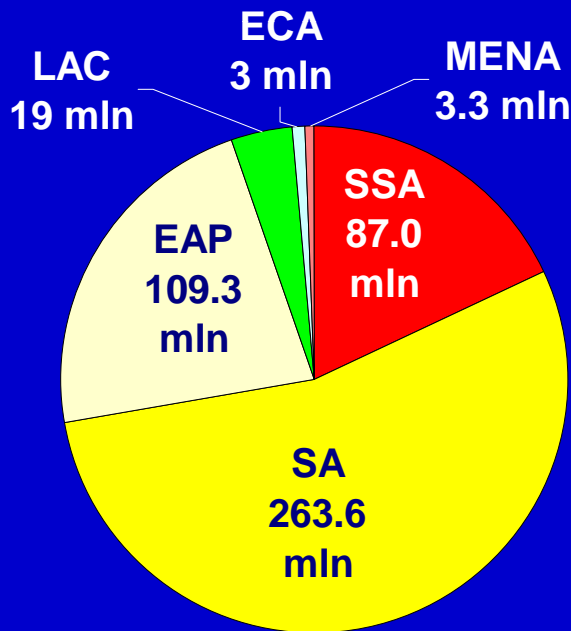


# 970 millions live under 1 US\$ a day or less

**\$0.75 and <\$1:  
485 mln**

**\$0.50 and <\$0.75:  
323 mln**

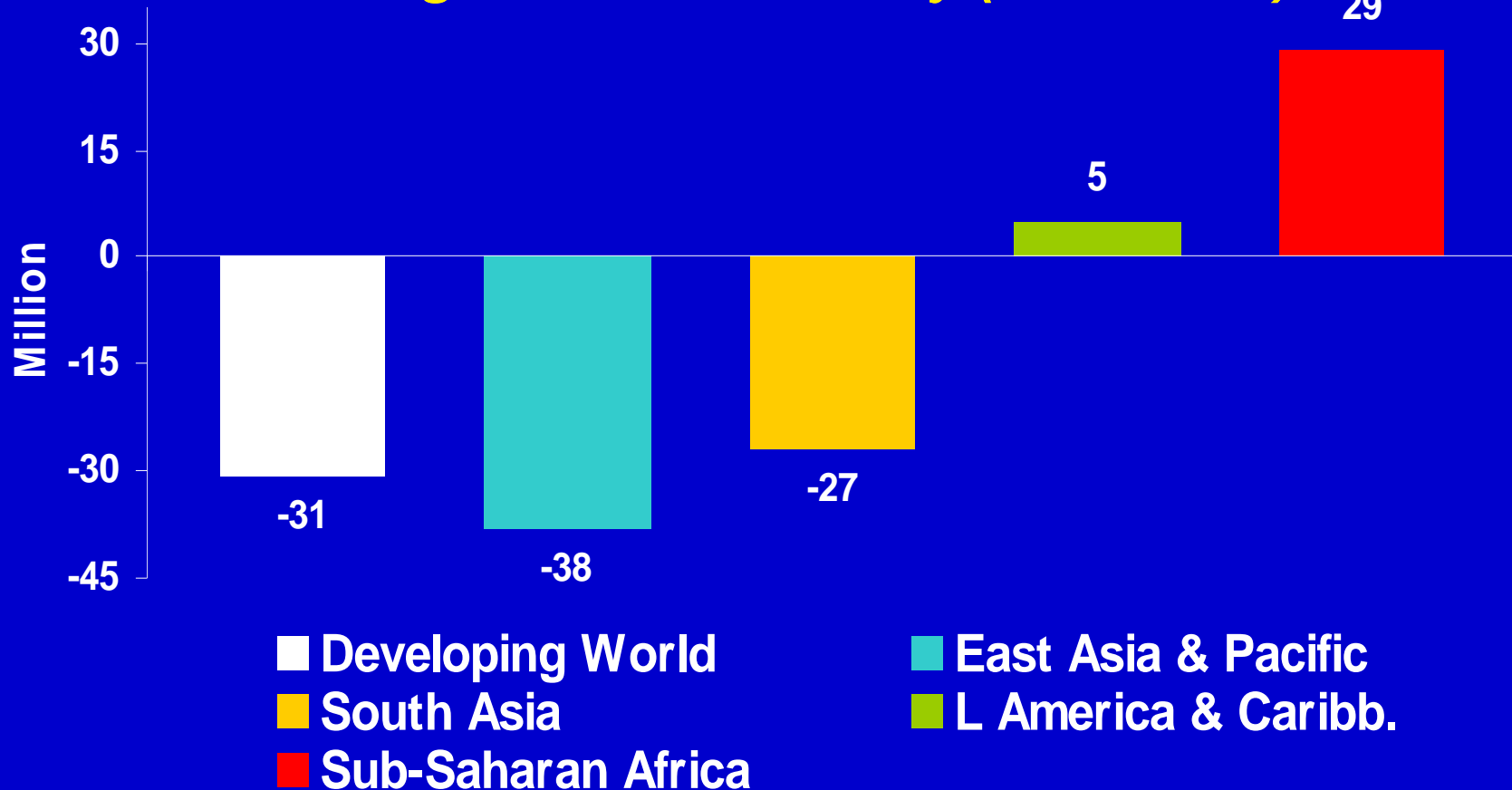
**<\$0.50:  
162 mln**



Source: Ahmed et al. 2007.

# The growing number of the poorest in SSA and in LAC

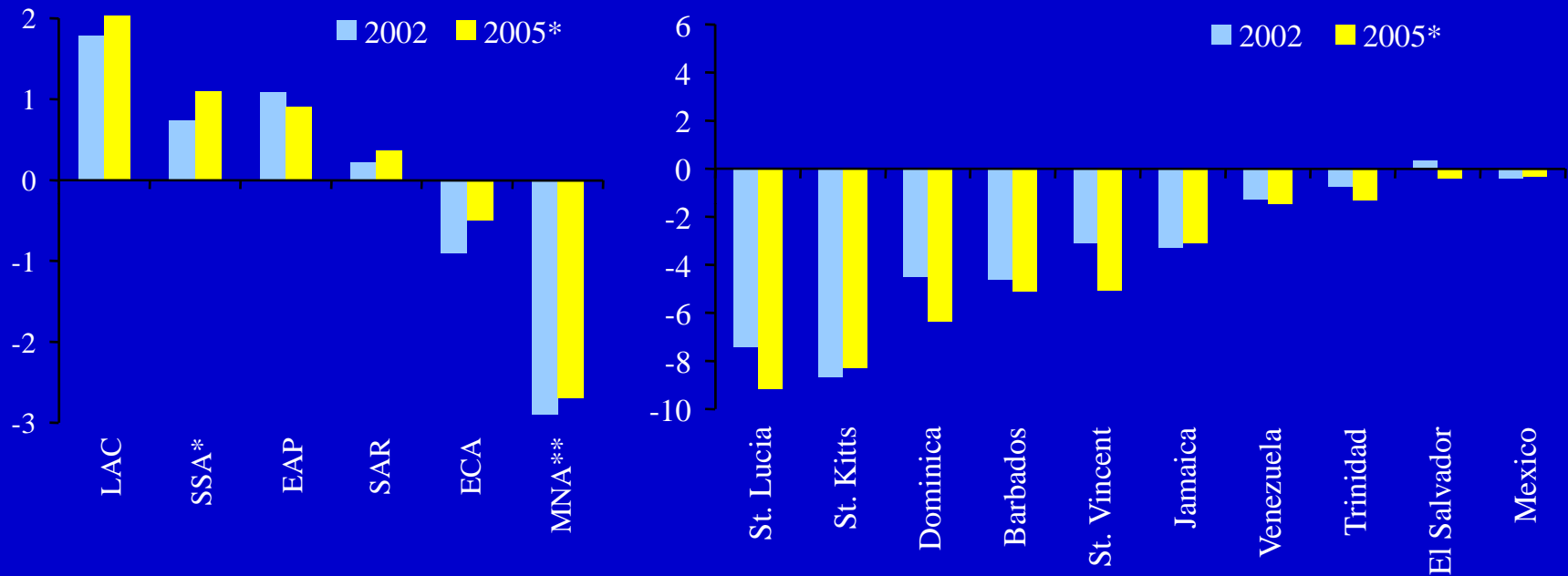
*Living below US\$.50/day (1990-2004)*



Source: Ahmed et al. 2007.

# LAC region as a whole is a net food exporter

Food trade balance as % of GDP



Only the Caribbean Islands, Mexico, Venezuela and El Salvador are net food importers

Note: \* 2004 for MNA and 2003 for SSA, El Salvador, and Jamaica.  
Source: World Bank World Development Indicators.

# Increasing number of hungry mainly due to high food prices

Number of undernourished (millions)

	2003-05	2007	Change
Asia & the Pacific	542	583	41
Latin America & the Caribbean	45	51	6
Near East & North Africa	33	37	4
Sub-Saharan Africa	212	236	24
Developing world	832	907	75
World	848	923	75

In 2008, additional 40 million people hungry worldwide, and in 2009 > 1 billion

## **Severe impacts on poor**

**Purchasing power:** 50-70% of income spent on food and wages do not adjust accordingly

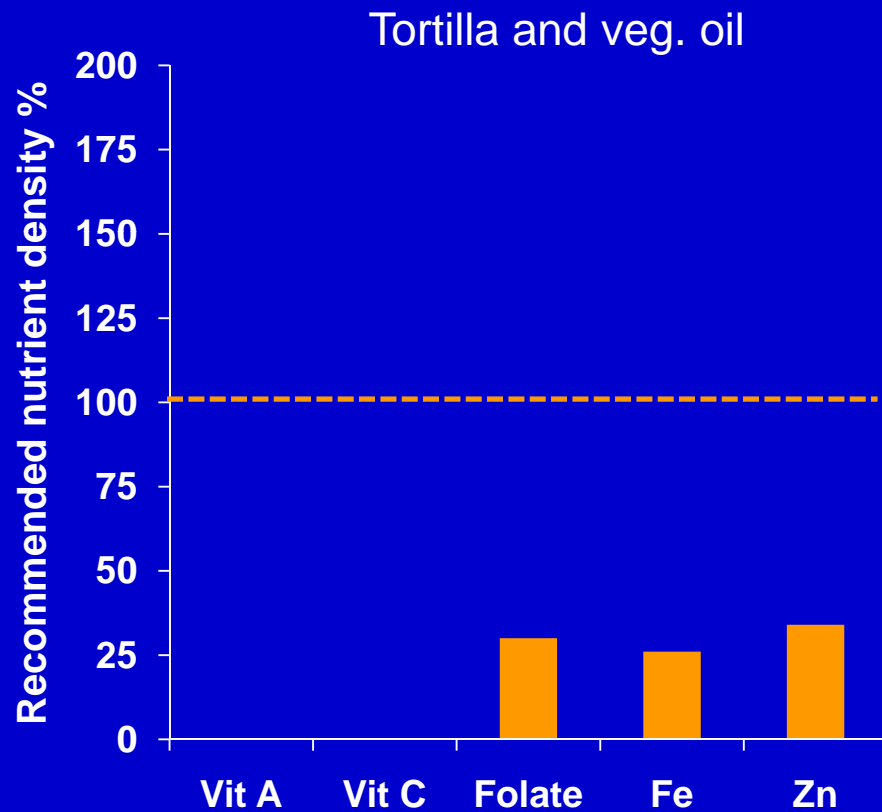
**Assets and human capital:** distressed sale of productive assets, withdrawal of girls from school, etc.

- + **Level of diet (low) and nutritional deficiencies (high)**
- + **Level of inequality below the poverty line (high)**

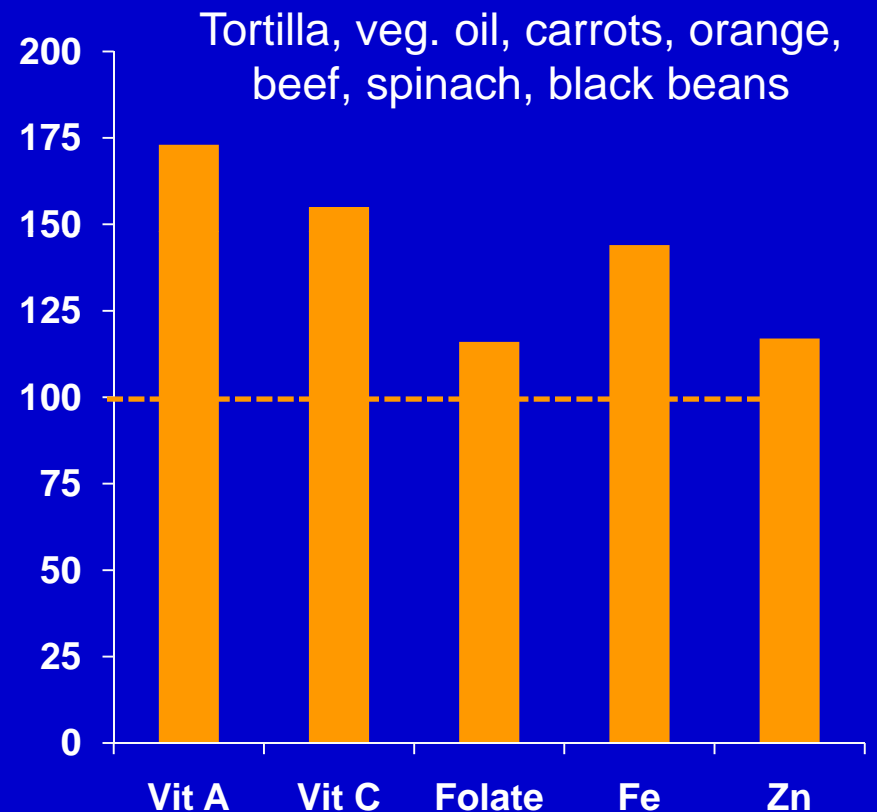
**Crisis not over for the poor;  
Nutrition is undermined for the long run**

# The poor cannot afford healthy diets: Guatemala example

## Corn-tortilla-based diets



**\$0.40**  
person/day



**\$0.72**  
person/day

Source: Erick Boy, IFPRI, 2008.

# First result 1: Transmission from international to national prices

1. We try if there was evidence of co-integration between domestic and international prices
2. We test the existence of co-integration vectors using the Johansen test using as the VAR base model one that includes the domestic price, the international price, the exchange rate, and two lags in all models
3. Finally we use moving averages in first differences to test if the rate of growth of the international prices have explanatory power with respect to the rate of growth of domestic prices

$$d \ln(P_t) = \alpha_0 + \beta_0 d \ln(P_t^*) + \dots + \beta_4 d \ln(P_{t-4}^*) + \gamma d \ln(e_t) + \varepsilon_t \quad \varepsilon_t \sim iid$$

## Result 1: Transmission from international prices to domestic prices- number of positive statistical significant coefficients with respect to the international prices in t and t-4

international price in regression	Mexico		Guatemala		El Salvador		Honduras		Nicaragua	
ln_wheat_int	ln_sweet_bread	0	ln_bread	1	ln_bread	1	ln_bread_loaf	0	ln_bread	1
	ln_white_bread	0	ln_pasta	2	ln_macaroni	2	ln_spaghetti	1	ln_bread_loaf	1
	ln_bread_decaja	1	ln_pastry	1	ln_bread_sweet	1	ln_wheat_flour	1	ln_bread_loaf_sliced	1
	ln_cookies	0			ln_crackers	2	ln_crackers	2	ln_spaghetitis	2
	ln_other_cookies	0					ln_bread_semitas	1	ln_wheat_flour	1
	ln_wheat_flour	0							ln_cookies	2
	ln_pastry	0							ln_crackers	1
								ln_candy_polvoron	1	
ln_corn_int	ln_corn	0	ln_corn	1	ln_corn	2	ln_corn	0	ln_corn	0
	ln_tortillas	0	ln_tortillas	0	ln_tortillas	2	ln_tortillas	0	ln_tortillas	0
	ln_corn_flour	0	ln_corn_flour	1			ln_corn_flour	0	ln_corn_flour	1
			ln_corn_milling	0			ln_cornflakes	0	ln_cornflakes	1
ln_rice_int	ln_rice	1	ln_rice	2	ln_rice	2	ln_rice	0	ln_rice	2

We report "." when the null is rejected for maximum rank equal to 1,2,...,N-1

international price in VECM	Costa Rica		Panama		Dominican Republic		Ecuador		Peru	
ln_wheat_int	ln_bread	1	ln_bread	0	ln_bread1	1	dln_bread	1	ln_bread_cereals	2
	ln_bread_square	0	ln_flour	1	ln_bread2	1	dln_bread_baguette	2		
	ln_bread_sweet	2	ln_pasta	2	ln_spaghetti	1	dln_flour	2		
	ln_cookies	0	ln_crackers	1	ln_pasta	1	dln_cookies	0		
	ln_crackers	2	ln_cereals	0			dln_pasta	0		
	ln_wheat_flour	2					dln_spaghetti	0		
ln_corn_int	ln_tortillas	0	ln_cereals	0			dln_corn	2	ln_bread_cereals	1
	ln_corn_flour	0								
ln_rice_int	ln_rice	1	ln_rice	0	ln_rice	0	dln_rice	1	ln_bread_cereals	1
					ln_rice_selected	0				
					ln_rice_premium	0				

## Result 2: Real change in prices in LAC

Group	Guatemala	Honduras	Nicaragua	Peru	Common
1. Rice	12.87%	24.22%	18.16%	6.2%	10.00%
2. Corn	5.95%	19.63%	27.73%	20.2%	10.00%
3. Bread and dried	29.17%	13.07%	27.56%	15.6%	10.00%
4. Beans, roots, vegetables, and fruits	0.45%	17.83%	34.58%	-1.2%	10.00%
5. Meat, fish, dairy	-0.45%	0.40%	5.16%	3.7%	10.00%
6. Other food	0.00%	0.00%	0.00%	0.0%	0.00%
7. Non food	0.00%	0.00%	0.00%	0.0%	0.00%

Real change in observed consumer prices between first quarter 2006 and first quarter 2008.

Observed prices come from corresponding country's bureau of statistics.

## Result 3: Effects over poverty and change in poverty

	Urban		Rural		National	
	A	10%	A	10%	A	10%
Mexico	0.40%	0.91%	0.11%	0.89%	0.34%	0.91%
Guatemala	1.48%	2.29%	0.99%	2.10%	1.23%	2.19%
El Salvador <sup>1/ 2/</sup>	1.34%	2.46%	1.13%	2.07%	1.25%	2.30%
Honduras	1.60%	1.80%	0.87%	1.14%	1.24%	1.48%
Nicaragua	5.51%	2.91%	2.19%	1.54%	4.16%	2.35%
Costa Rica	1.16%	0.63%	1.52%	0.86%	1.30%	0.71%
Panama	1.66%	2.13%	1.40%	1.82%	1.56%	2.00%
Jamaica <sup>1/</sup>	0.67%	0.72%	1.01%	1.06%	0.84%	0.89%
Dominican Rep. <sup>1/ 2/</sup>	0.13%	1.53%	0.02%	3.29%	0.09%	2.17%
Haiti	2.23%	1.86%	2.63%	1.83%	2.50%	1.84%
Ecuador	0.60%	1.46%	0.67%	1.49%	0.62%	1.47%
Peru	0.78%	1.74%	1.21%	2.29%	0.93%	1.94%
Average	1.46%	1.70%	1.14%	1.70%	1.34%	1.69%
Median	1.25%	1.77%	1.07%	1.68%	1.24%	1.89%
Min	0.13%	0.63%	0.02%	0.86%	0.09%	0.71%
Max	5.51%	2.91%	2.63%	3.29%	4.16%	2.35%

1/ Agricultural/food production not available

2/ No substitution effect in consumption

# Result 4: Distributional effects

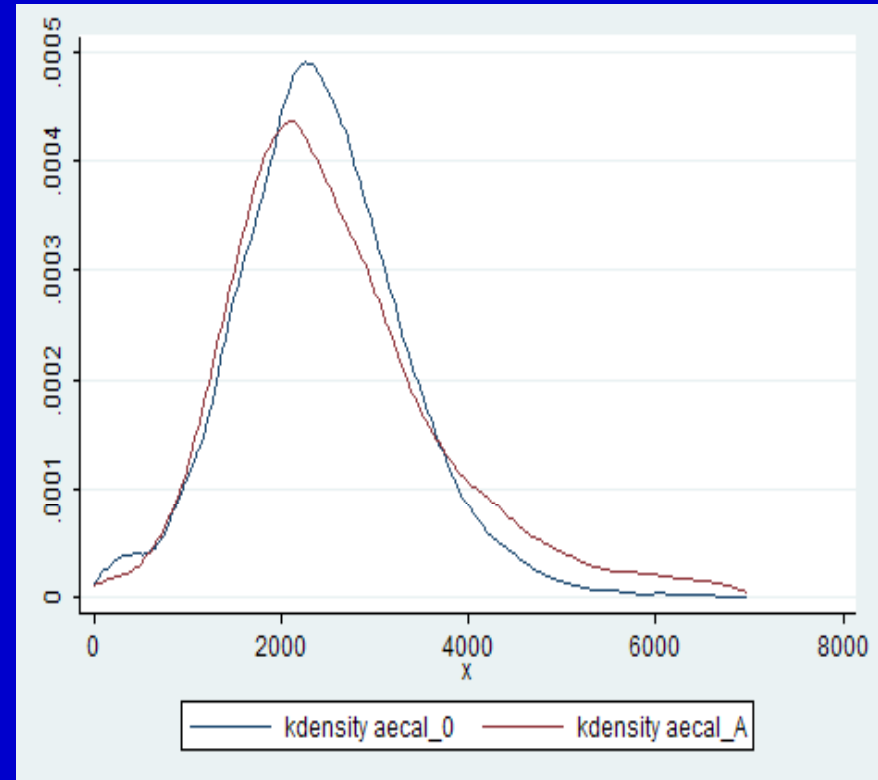
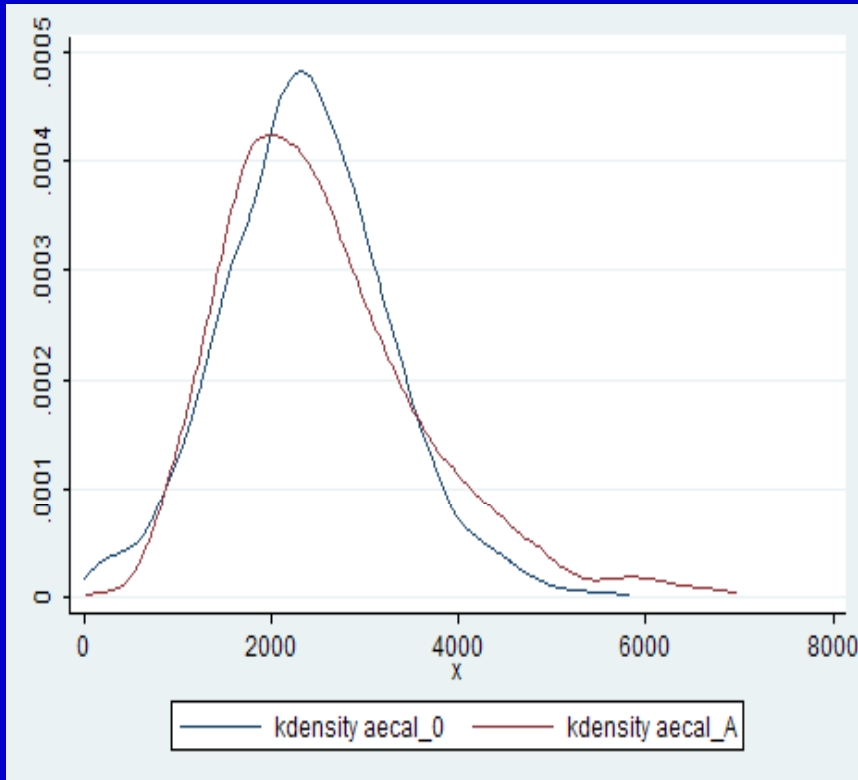
	Guatemala			Honduras			Nicaragua			Peru		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
<b>Poverty Deepening</b>	64.1%	43.7%	54.2%	67.8%	23.4%	45.2%	58.0%	22.8%	37.1%	70.6%	39.8%	50.7%
<b>Poverty Alleviation</b>	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.3%	0.0%	0.1%
<b>Poverty Exit</b>	0.1%	0.0%	0.0%	0.2%	0.0%	0.1%	0.7%	0.1%	0.3%	0.0%	0.0%	0.0%
<b>Poverty Entry</b>	2.2%	2.3%	2.2%	1.3%	1.8%	1.6%	2.3%	3.0%	2.7%	2.3%	1.8%	2.0%
<b>Non poor worse</b>	33.5%	54.0%	43.5%	29.8%	74.6%	52.7%	38.8%	74.1%	59.8%	26.0%	58.3%	46.9%
<b>Non poor better</b>	0.0%	0.0%	0.0%	0.7%	0.1%	0.4%	0.2%	0.1%	0.1%	0.7%	0.1%	0.3%
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>Change in poverty</b>	2.1%	2.3%	2.2%	1.1%	1.8%	1.5%	1.5%	2.9%	2.3%	2.3%	1.7%	1.9%

# Result 5: Calorie consumption - Honduras

Before (blue) and after (red) of the increase in prices

Households with 0-2 years old kids

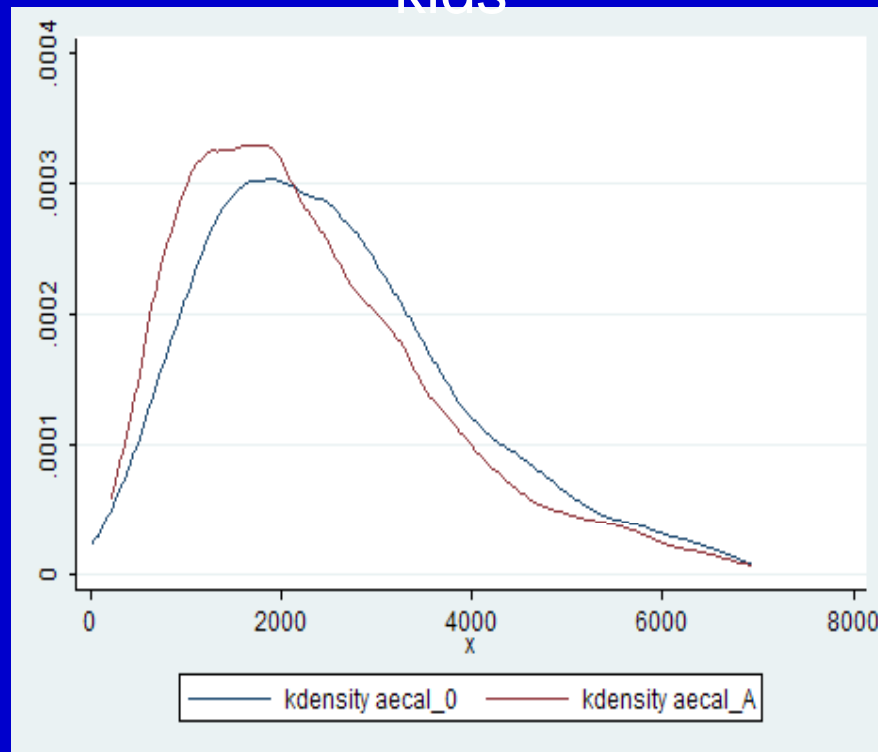
National level



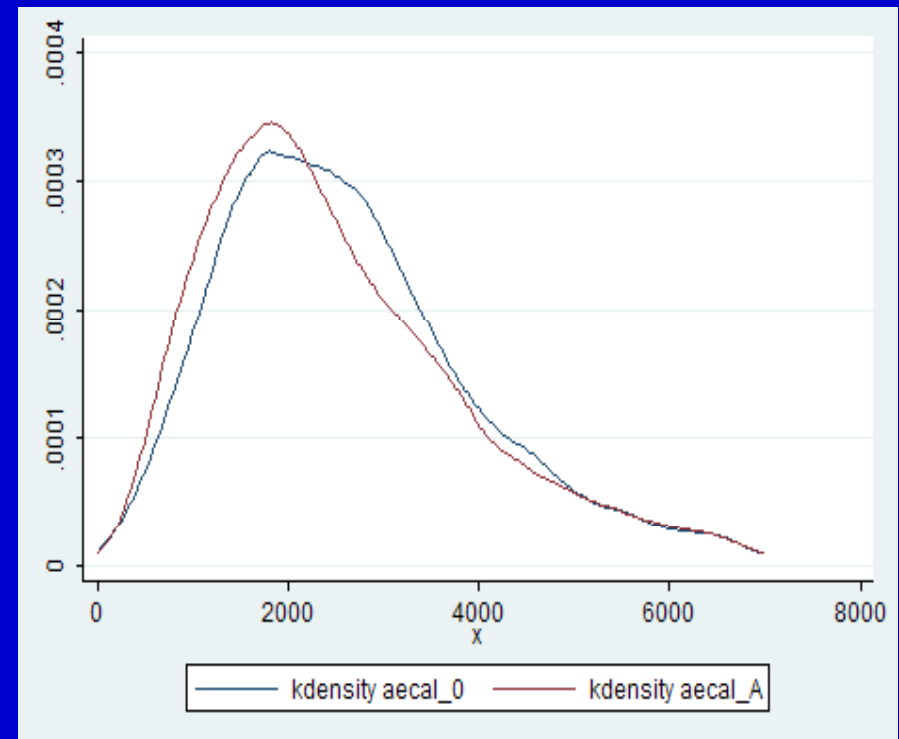
# Result 5: Calorie consumption - Nicaragua

Before (blue) and after (red) of the increase in prices

Households with 0-2 years old kids



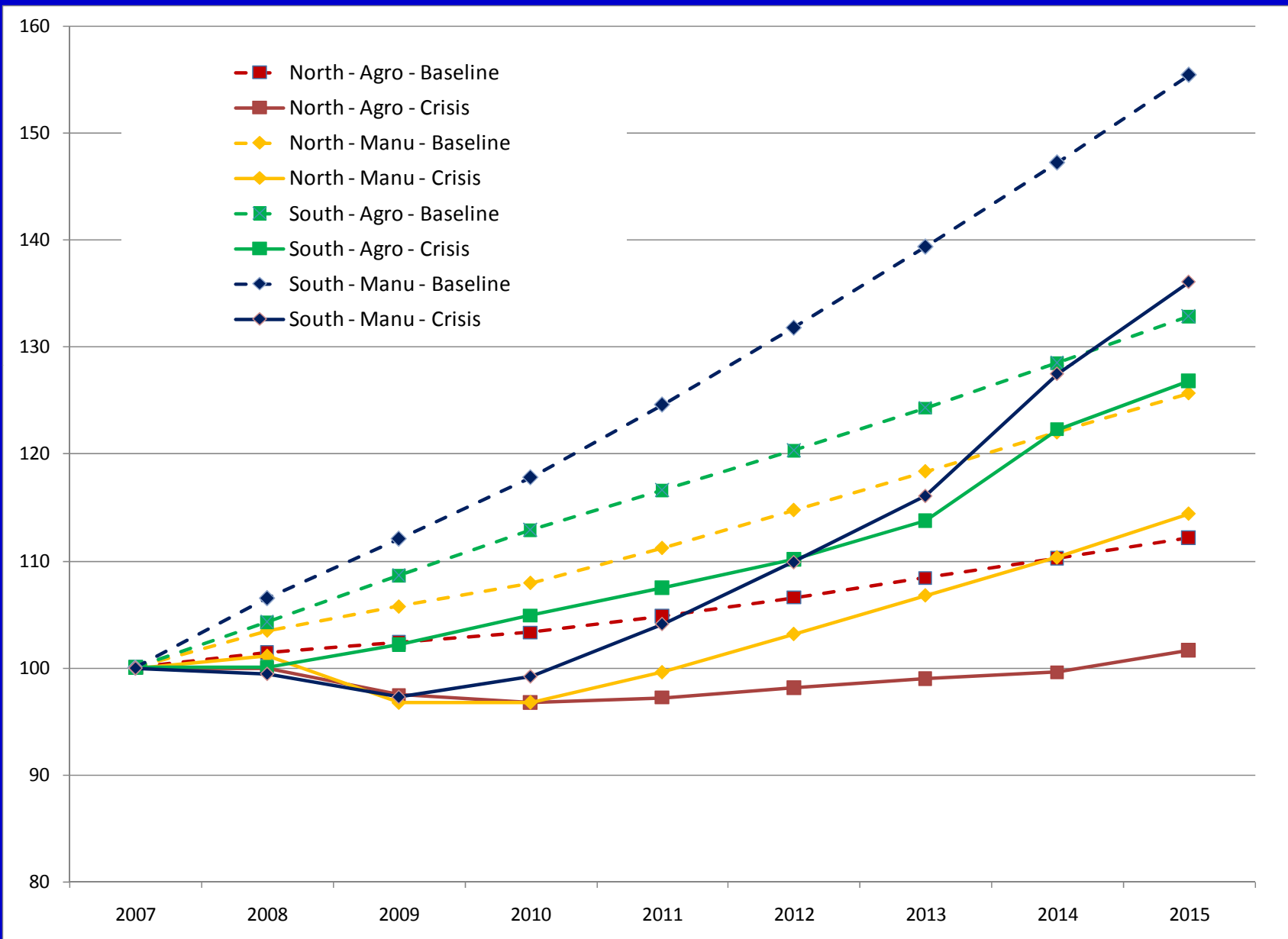
National level



## **The financial crisis and the recession complicates even more the food situation: risks**

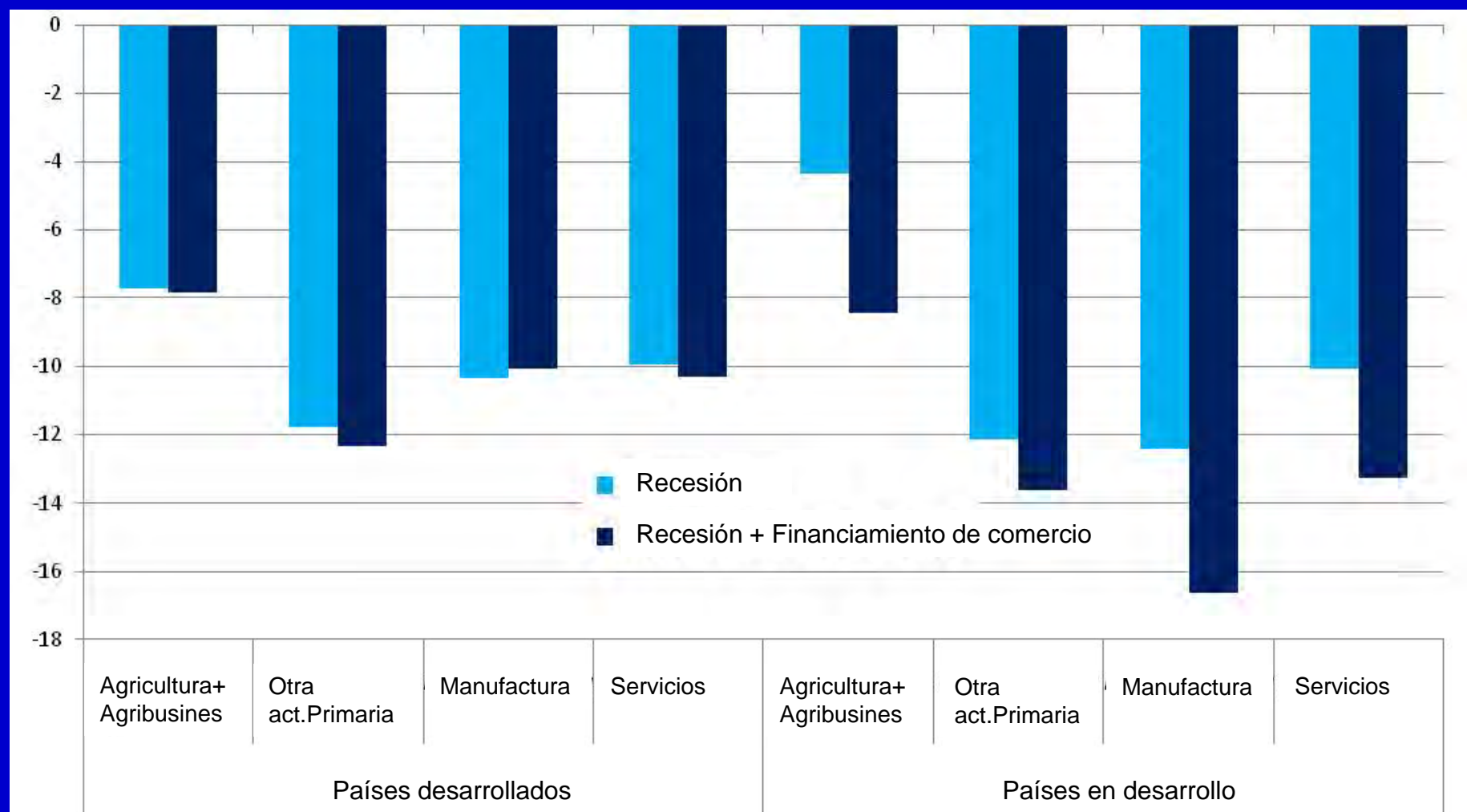
- **Less capital available today and in the future for the agriculture**
- **More debt specially for small holders which had already invested in the expansion of their production**
- **Shift of attention of policies for agriculture and reduction of public investment**
- **Reduction of employment and wages of low skill workers**
- **Reduction of remittances**

# Core Scenario - Exports (volume)



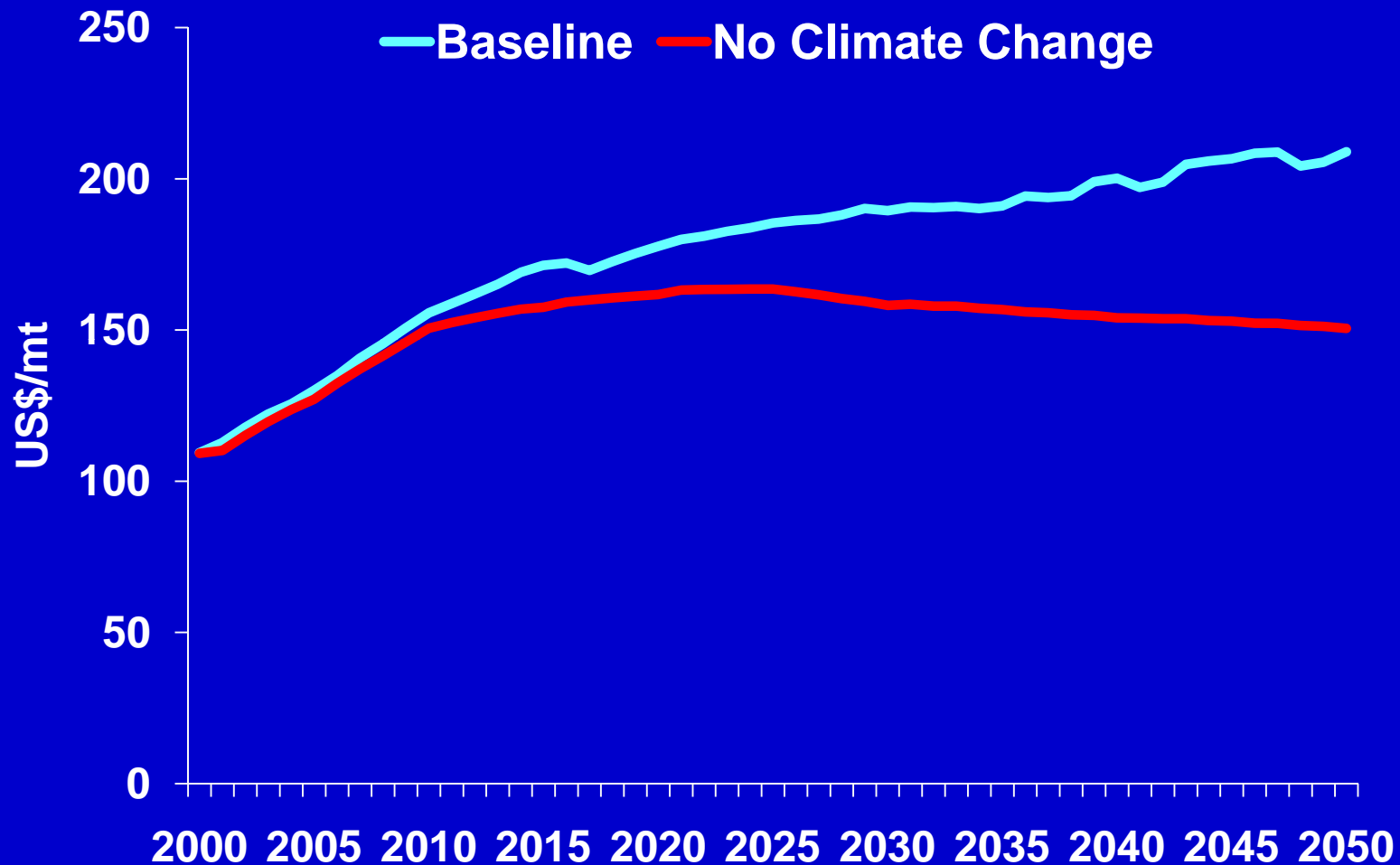
Source: MIRAGE simulations, Laborde and Torero (2009)

# Volume of Exports Looking to 2012 (with respect to the baseline)



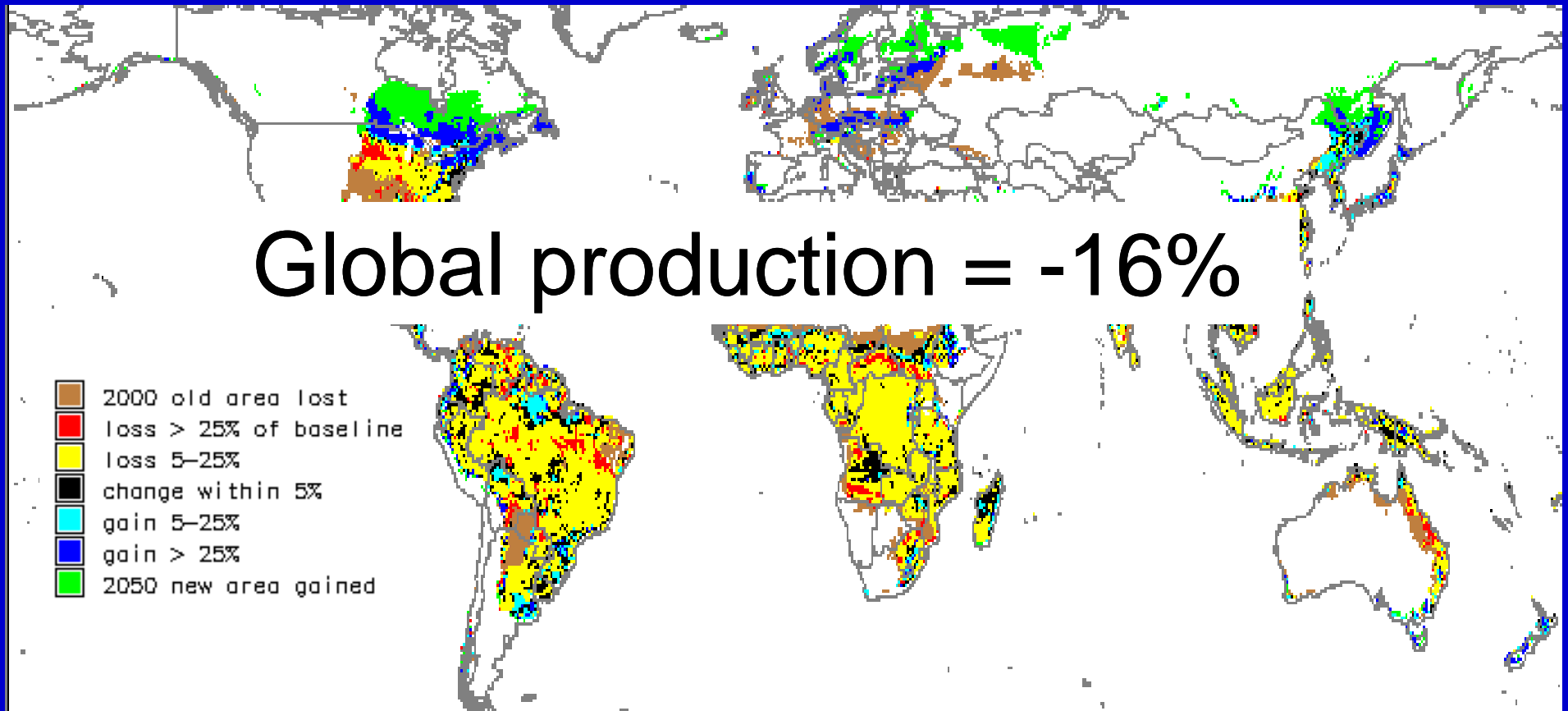
Source: MIRAGE simulaciones, Laborde and Torero (2009)

## Global price of wheat: Baseline and without climate change, 2000-2050



Source: IFPRI IMPACT simulations for HadCM3/SRESB2 scenario (with IMAGE temperature and CO<sub>2</sub> fertilization effects), April 2008 results

# Climate Change Effects on Maize Yield



Source: Hadley GCM, SRES Scenario A2a  
February 2009 results

# Policies necessary to cope financial crisis

- First priority: Prevent contagion to the financial sector
- Monetary policy
  - Little potential for developed economies to use it; but
  - Developing economies can use monetary easing to promote industrial upgrading in sectors with comparative advantage
- Fiscal policy
  - Finance creation and upgrading of infrastructure – useful to catch up, after period of rapid private-sector growth
  - Fund social safety nets and investments in education and health – investment in future productivity of the economy
- Key: increase demand counter-cyclically to the extent that is consistent with protecting fundamentals

# **Four priority for policy action needed**

## **At the global level**

- 1. Reduce trade barriers**
- 1. Reduce market volatility**

## **At the country level**

- 3. Expand social protection and child nutrition action**
- 4. Increase efficiency in linking producers to markets, specially small holders**

# 1. Reduce Trade barriers

**Export restrictions in 2008 were serious!**

**Potential costs of rising protectionism are high!**

- **Failed Doha round, if tariffs increase to their current WTO limits (bound level):**

**-11.5% in developing country exports**

**- US\$353 billion in world welfare**

## 2. Reduce price volatility - Speculation and prices: evidence of causality

Indicator of speculation activity	Commodity			
	Wheat	Corn	Soybeans	Rice
1. Monthly volume (futures contracts CBOT)				
2. Monthly open interest (futures contracts CBOT)				
3. Ratio volume to open interest (1)/(2) (futures contracts)	+			+
	(Apr/05 - Oct/07)			(Dec/04 - Jun/07)
4. Ratio non-commercial positions to total reportable positions (long)				+
				(Sep/05 - Mar/08)
5. Ratio non-commercial positions to total reportable positions (short)		+	+	
		(Jan/05 - Jul/07)	(Aug/05 - Feb/08)	
6. Index traders net positions (long – short positions)*		+		N/A
		(Jan/06 – May/08)		

- “+”: evidence of causality

- Starting period of evidence of causality in parenthesis

- \* It combines futures and options positions, data available since January 2006.

Source: Robles, Torero, and von Braun 2009.

## **2. Reduce Price volatility**

- 1. Poor can not afford speculation**
- 2. Governments can't afford speculation**
- 3. There is clearly a need to regulate the basic grains futures commodity market**
- 4. A virtual reserve is an option which is mostly a signal which could avoid speculators coming in to this market**
- 5. If speculators get the signal this would become real regulation - minimizing the costs to the poor**

## **2. Reduce Price volatility**

**We propose A New Global Institutional Arrangement. This arrangement consist of two prongs:**

- A minimum physical grain reserve for humanitarian assistance, and**
- A virtual reserve and intervention mechanism to calm markets under speculative situations, backed up by a financial fund.**

# The virtual reserves

**Intelligence unit**

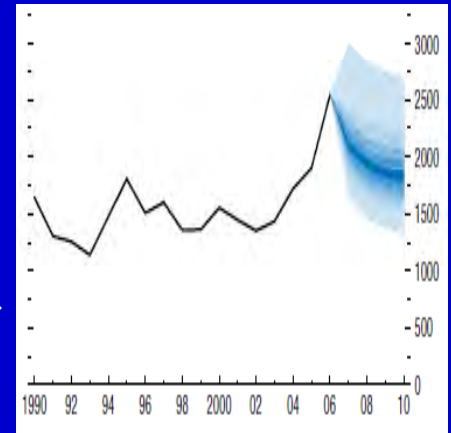
- Model fundamentals
- Model dynamic price band
- Trigger alarm

**High level technical commission**

- Approve intervention



## Futures market

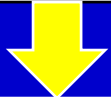


delivery occurs in less than 2 percent of all agricultural contracts traded

**Backwardation should happen**

Appoint

Country commitment to supplying funds



### 3. Expand social protection and nutrition action

#### Protective:

- Cash transfers (conditional)
- Employment programs

#### Preventive:

- School feeding
- Early childhood nutrition programs

## **4. Linking producers to Markets**

- A. Capture heterogeneity**
- B. Infraestructure specially today.**
- C. A value chain approach**
- D. Institutional innovations**