INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE
sustainable solutions for ending hunger and poverty

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Global Agriculture in a Rapidly Changing Environment

Needed Policies for Future Food & Well-being

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"Impact of Increasing Volatile Prices on World Food Markets"
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Various ‘drivers of change’ underlie global trends in food prices

A number of factors at work which determine changing conditions in global food markets

- Socio-economic growth – rising incomes and demands for meat (and the necessary feed grains to supply it)
- Environmental shocks – increasing variability in climate facing agriculture
- Policy drivers
  - Steady decline in cereal stocks
  - Unilateral trade actions (bans & export taxes)
  - Direct effect of energy prices on agriculture & energy policies which have implications for agriculture

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Some drivers are ‘fast-moving’, while others are slow…..

Slower-moving drivers – which play into long-term

- Socio-economic growth and demographic change (population and pc income didn’t surge overnight in China and India – neither did their consumption)
- Longer-term shifts in climatic conditions
- Slowing yield growth (relative to demand growth)

Faster-moving drivers of change

- Short-term environmental shocks which cause seasonal losses of harvest/yield (floods, droughts)
- Rapid increase in energy demand and prices – and the growth of crop-based biofuels production

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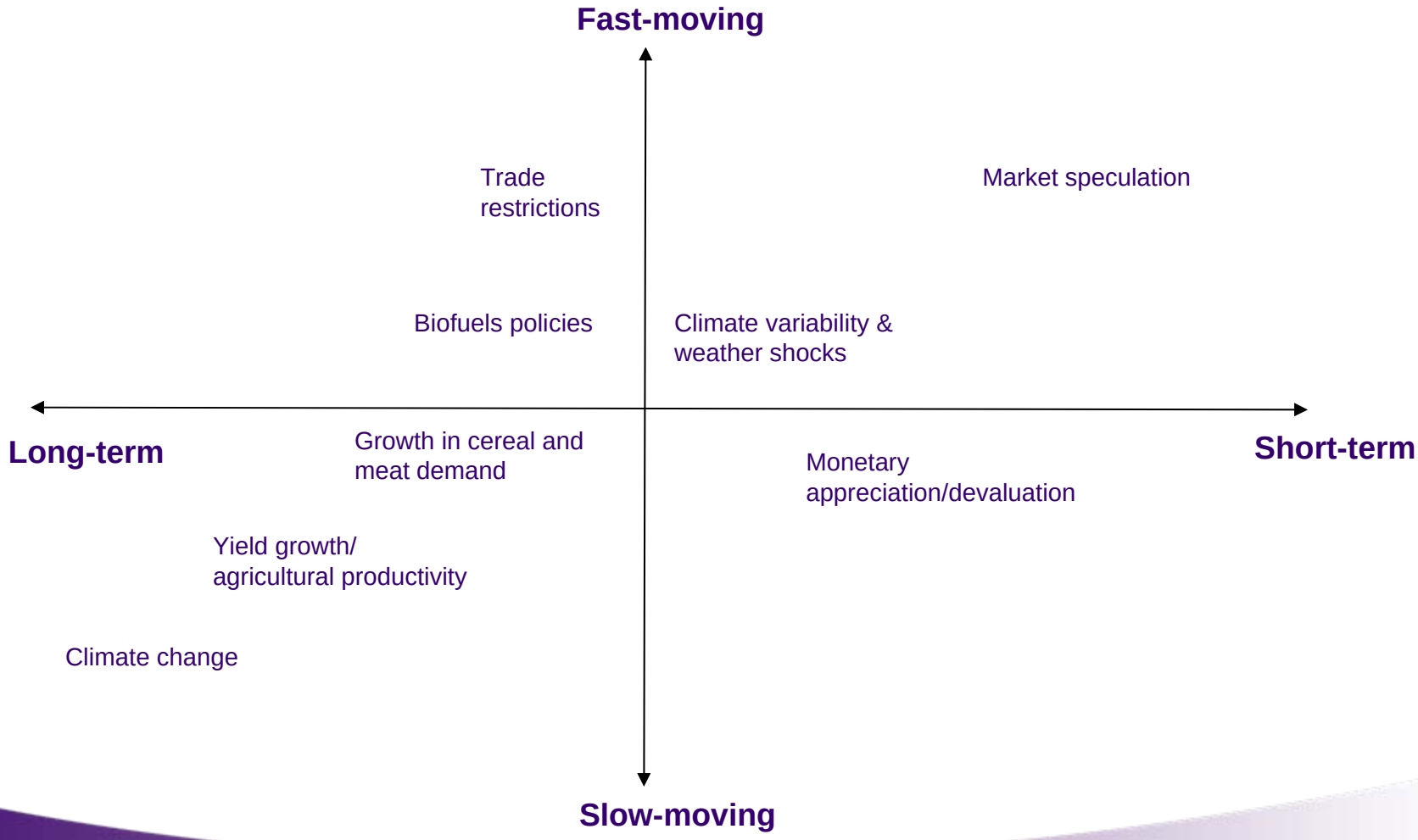
Sorting between the long/short term factors and fast/slow-moving drivers



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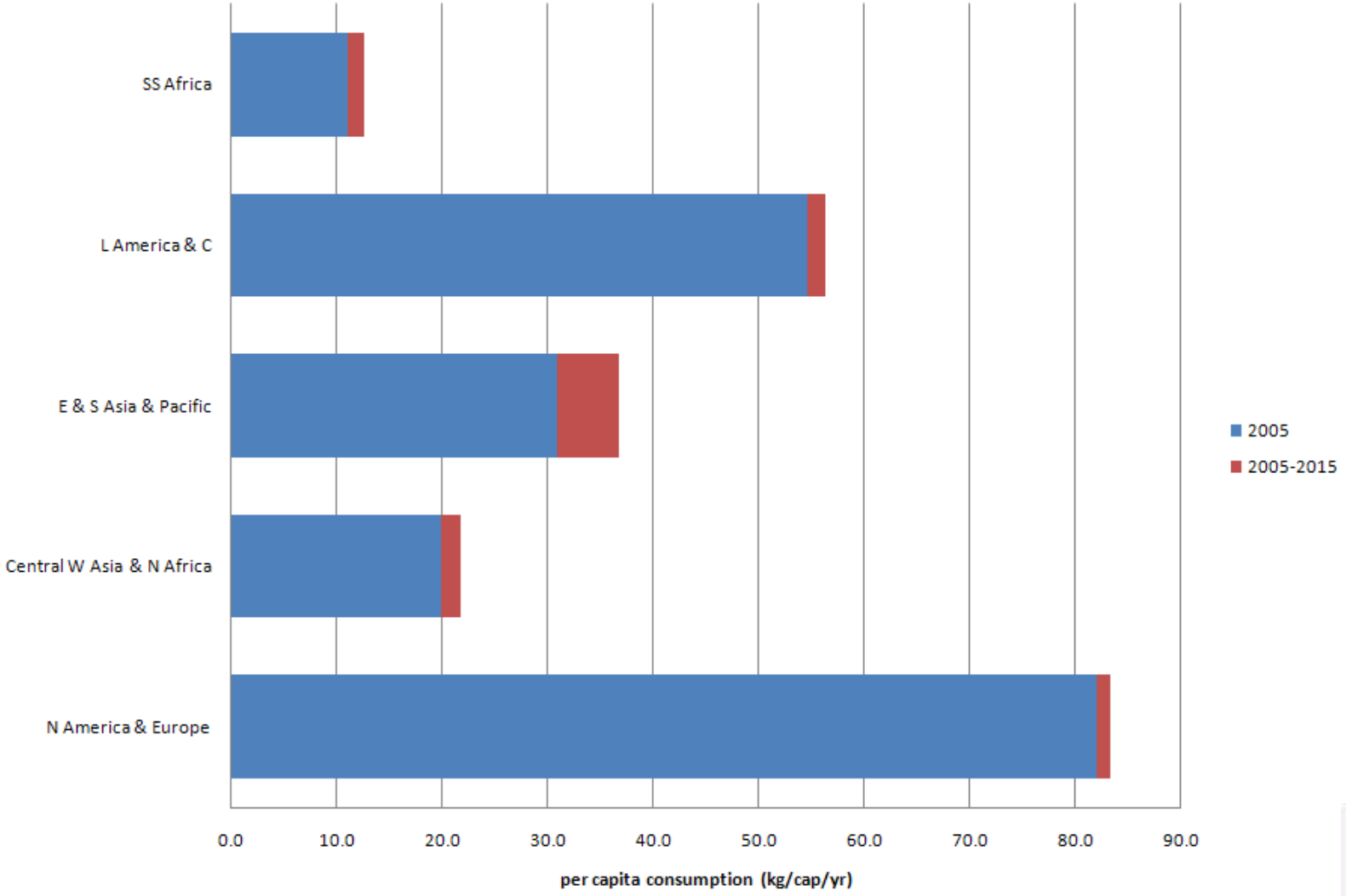
Food demand across various countries

	Commodity	FOOD DEMAND Average 2004-2006 ('000 mt)	(% total demand)
East Asia and Pacific			
	Rice	192,415	88%
	Wheat	105,976	90%
	Sweet potato & yams	48,035	36%
	Pork	53,453	100%
	Potato	49,632	62%
Latin Am. & Caribbean			
	Milk	46,585	72%
	Wheat	26,527	82%
	Maize	23,459	25%
South Asia			
	Rice	112,547	92%
	Wheat	88,991	88%
	Milk	71,570	54%
	Potato	26,574	75%
Sub-Saharan Africa			
	Cassava	79,128	65%
	Maize	28,278	69%
	Sweet potato & yams	28,716	54%
	Milk	17,422	81%
	Sorghum	14,295	76%

Source: FAOSTAT food balance sheets, 2008

Growth in meat consumption

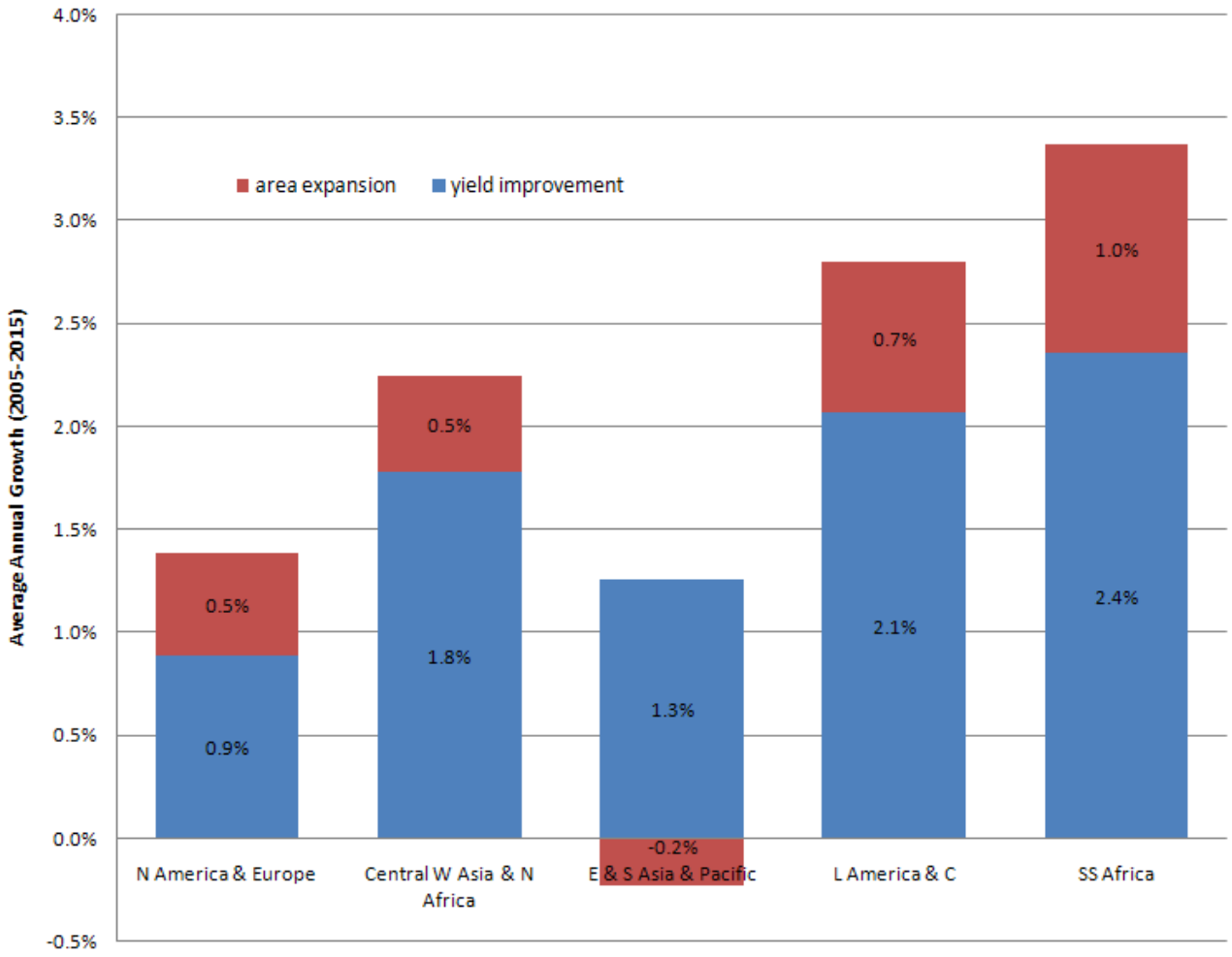


IMPACT model projections (Feb 2009)

Growth in cereals consumption

	food consumption		total consumption	
	Growth in Consumption, 2005-2015 (millions mt)	Share of total increase	Growth in Consumption, 2005-2015 (millions mt)	Share of total increase
N America & Europe	-3.5	-10%	178.2	54%
Central W Asia & N Africa	15.3	43%	33.9	10%
E & S Asia & Pacific	11.5	32%	78.4	24%
L America & C	2.1	6%	21.4	7%
SS Africa	10.5	29%	15.9	5%

Sources of production growth in cereals



IMPACT model projections (Feb 2009)

More pressure on global markets and local ecosystems to supply food needs

The global food system will become even more globalized (with its risks) and tradeoffs between food provision and ecosystem quality will emerge

- Continue to rely on key producing regions and also on key crop and animal varieties to meet our needs
- Need more reliance on productivity growth, but land will inevitably expand with tradeoffs to ecosystem quality
- Has implications for biodiversity and the environment
- We can't afford a "Fortress World" outcome – we need to allow for technology-sharing and relax barriers

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Human Welfare Dimensions

Child Malnutrition in Developing World

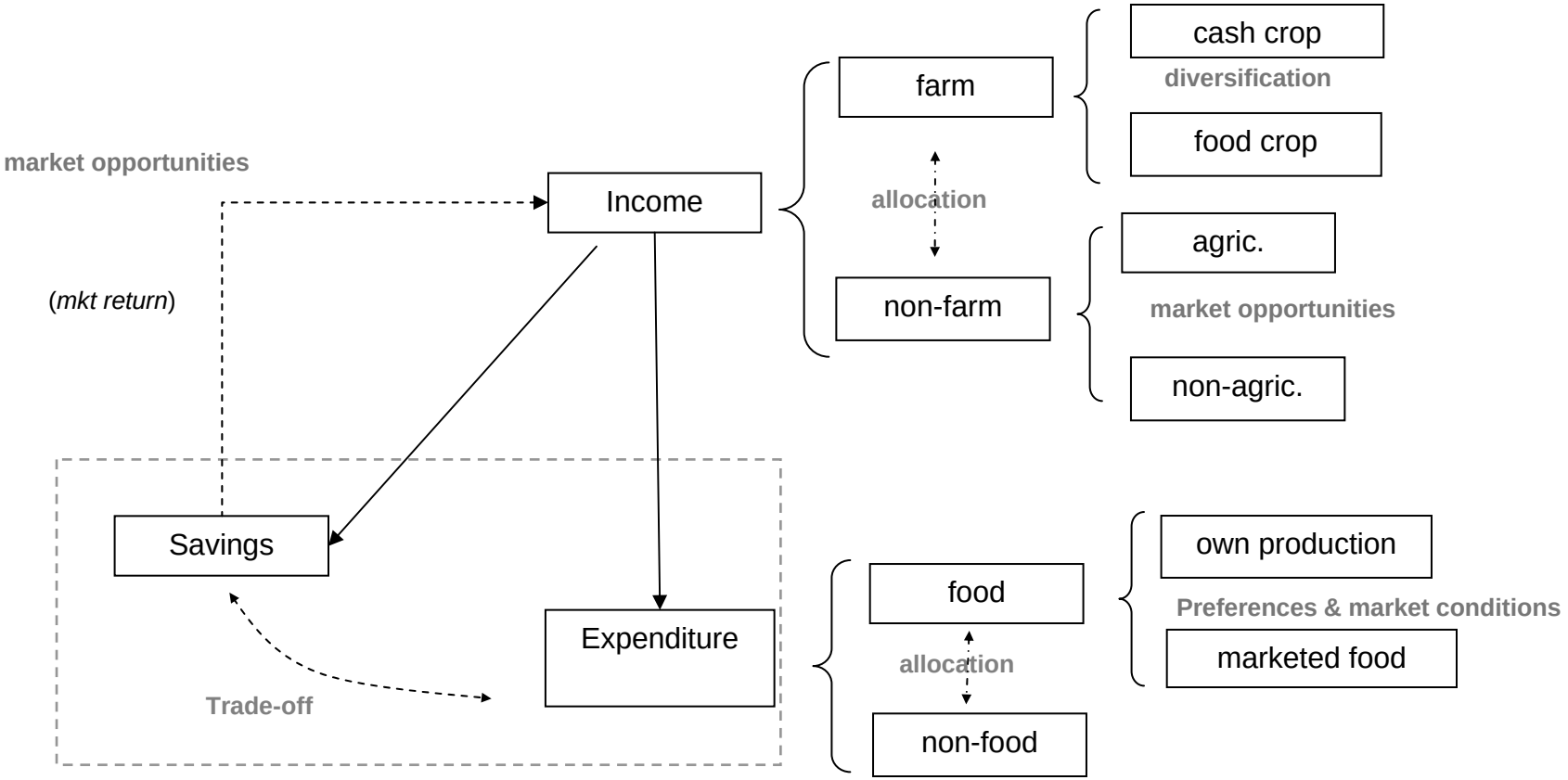
	Percent of children malnourished (2015)	Total children malnourished 2015 (millions)	Share of all malnourished children (2015)	Change in malnourishment 2005-2015 (millions)	share of total change in malnourished
Central W Asia & N Africa	22	19.9	13%	1.6	45%
E & S Asia & Pacific	29	86.6	55%	-5.3	-151%
L America & C	15	83.0	5%	0.08	2%
SS Africa	31	42.1	27%	7.2	204%

IMPACT model projections (Feb 2009)

Micro-level connections to hunger

- These projections give a rather macro-level view – there are important underlying micro-level factors
- The market-level prices for food and non-food products affects hhold –level decisions/outcomes
- Food security hinges around issues of availability, access, utilization and stability
- Access and utilization have strong micro-components which must be considered
- Market- and household-level constraints can become binding
- Distributional implications become important

Key Trade-offs within the Household



The welfare impacts of volatile prices

- Even though price increases generally favor net producers over net consumers – fast spikes are not as beneficial as slow rises for most
- Those producers able to mobilize capital and resources quickly can take the most advantage of output price increases – otherwise credit and labor constraints can get in the way
- Consumers faced with price increases usually cut back first on food expenditures (since some are quasi-fixed in short run – e.g. housing) which means falling nutrient intake – especially for poorer hholds

Savings, credit, insurance and buffer stocks

- Savings and assets are important for consumption smoothing for consumers are– but poorer households can be rationed out of these markets
- Producers use credit to weather the ups and downs of markets – and need insurance to protect against shocks. But not all can get access
- Communal risk-sharing mechanisms are common in many parts of the developing world – but can be inefficient and less effective at protecting against non-idiosyncratic types of risk
- Other institutions are needed to cover risks not provided by the market (role for government)

The Road Ahead…

The Dangers of a “Fortress World”

The MEA pointed out the difficulties of living within the “Fortress World” scenario where there is little cooperation or innovation:

- Technology diffusion is slow
- Trade policies are protectionist
- Investments in agriculture research are low
- Ag prodn expansion relies more heavily on extensification rather than yield improvements (which has implications for land use cover & habitat)
- Leads to higher food prices and slower improvements (or worsening) of nutrition status

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Moving towards Openness and Innovation

The alternatives to the "Fortress World" scenario lead to better outcomes – but are not without issues either

- More innovation and sharing/diffusion of tech.
- Greater yield improvement and lower food prices
- Increased irrigation contributes towards this improvement – and also has implications for water resource availability and quality (salinity)
- Trade-offs b/w access to fresh water & food
- Some regions run up against these constraints sooner than others

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Required Actions and Responses

Action needed both at the global, national and local levels – with coordination between all of them

- Global orchestration is needed for those policies which require coordination on international level (trade and climate policy, enactment of regulation & law) – establishing certain strategic funds or reserves
- National-level action to protect vulnerable areas and make necessary investments in agriculture and build up strategic stocks
- Local-level monitoring, interventions, enforcement of regulations and implementation of best practices

Some specific policy actions that can help

Policies and institutions

1. Trade: Eliminate agricultural trade barriers, and export bans; establish international facility to finance food imports for most needy countries
2. Protection of the vulnerable: Expand food and nutrition related development aid, including safety nets, child nutrition, employment programs
3. Innovation sharing – move away from “fortress” world – and keeping all technological options on the table
4. Global grain banking: Help calm markets with a virtual grain bank that can respond quickly to shortfalls and emergencies

Concluding Thoughts

- Impacts of price volatility can be mixed and food system-specific – both positive and negative – needs careful assessment to understand who's affected the most
- Need better assessment tools that can assess the key vulnerabilities of food systems and which can link to micro-level data so the welfare impacts are better understood
- Information systems can play a role in providing early warning
- Micro-level analysis can also help highlight other constraints to productivity, which might limit the ability of producers to respond to (and benefit from) higher prices
- In an era of higher price volatility, we need more responsive and flexible institutions that can intervene where most needed

Thank You!