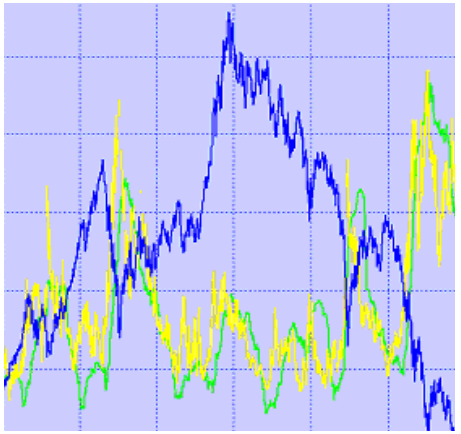
Formulating An Agricultural Risk Management Framework to Respond to Increasing Volatility

The World Bank's Experience



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Åsa Giertz, Agriculture Specialist
Agricultural Risk Management Unit
Agriculture Global Practice
The World Bank

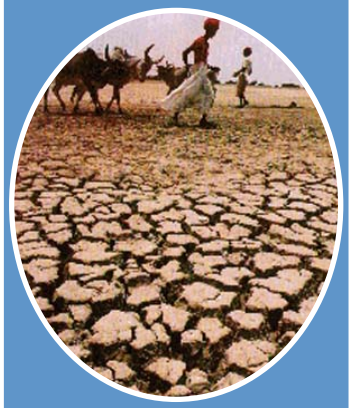
Agricultural Risk Management at the World Bank

- The World Bank has a dedicated Agricultural Risk Management Team in its Agriculture Global Practice
- **Works with systemic risks for the agricultural sector through sector-wide risk management**
- Works with commodity-specific risks through supply chain risk management
- Works to enhance global knowledge through capacity building, training, FARMD, etc.
- Activities in Africa, Asia, Central Asia, and Latin America

A Risk Management Framework to Manage Volatilities

- Volatilities imply risks for countries and stakeholders in that they create uncertainty
- Price volatilities are often symptoms, not causes
- Risks are complex and multi-layered and are therefore most effectively addressed from a systems approach
- Countries must manage volatilities from their own specific context

Agricultural Risks: A Broader, Cross Cutting Agenda

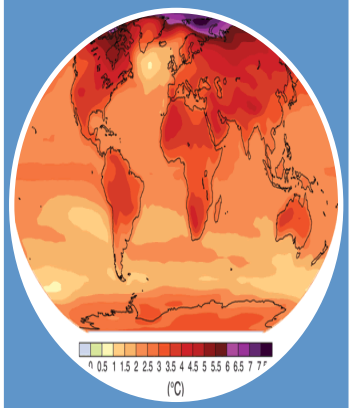


Disasters

Productivity

Social protection

Food security



Climate change

Agricultural Risks

Sector-Wide Agricultural Risk Assessments

- Approach developed by the World Bank to identify impediments to agricultural growth in countries
- Done in countries all over the world

  - **Africa**: Niger, Ghana, Tanzania, Kenya, Senegal, Rwanda

  - **Latin America**: Haiti, Paraguay, Brazil

  - **Eur-Asia**: Mongolia, Kazakhstan, Kyrgyzstan, Tajikistan
- Support the implementation of countries' general agricultural strategies
- Allows countries to better target often limited resources and to minimize losses from risks

Defining Risk

Risks: Uncertain events that lead to losses

- Symptoms: yield volatility, price volatility, etc.
- Causes: droughts, pest and disease outbreak, input price spike, etc.

Different from:

Constraints: Certain contextual conditions that lead to sub-optimal performance

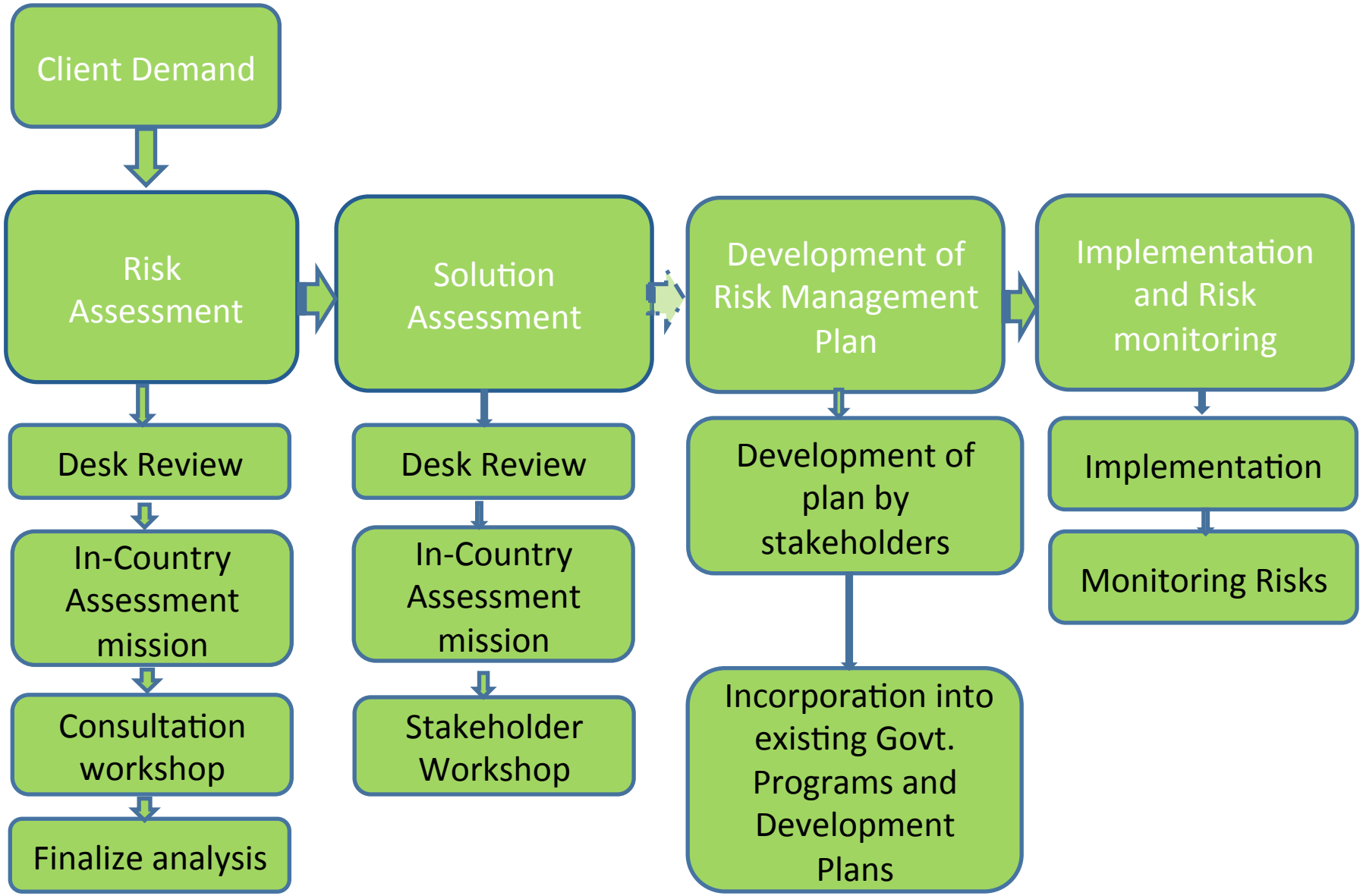
- Symptoms: low yields
- Causes: lack of access to inputs, poor technology, depleted soil, etc.

Trends: Longer term patterns (reversible or irreversible) that provide context

- Symptoms: declining yields, reduction in area, increases in prices, etc.
- Causes: structural changes in agriculture, changes in climate patterns, increasing fuel prices, etc.

=> There are linkages between these three concepts

Agricultural Risk Management Process Flow



Why Risk is Important: The Point of View of Our Clients

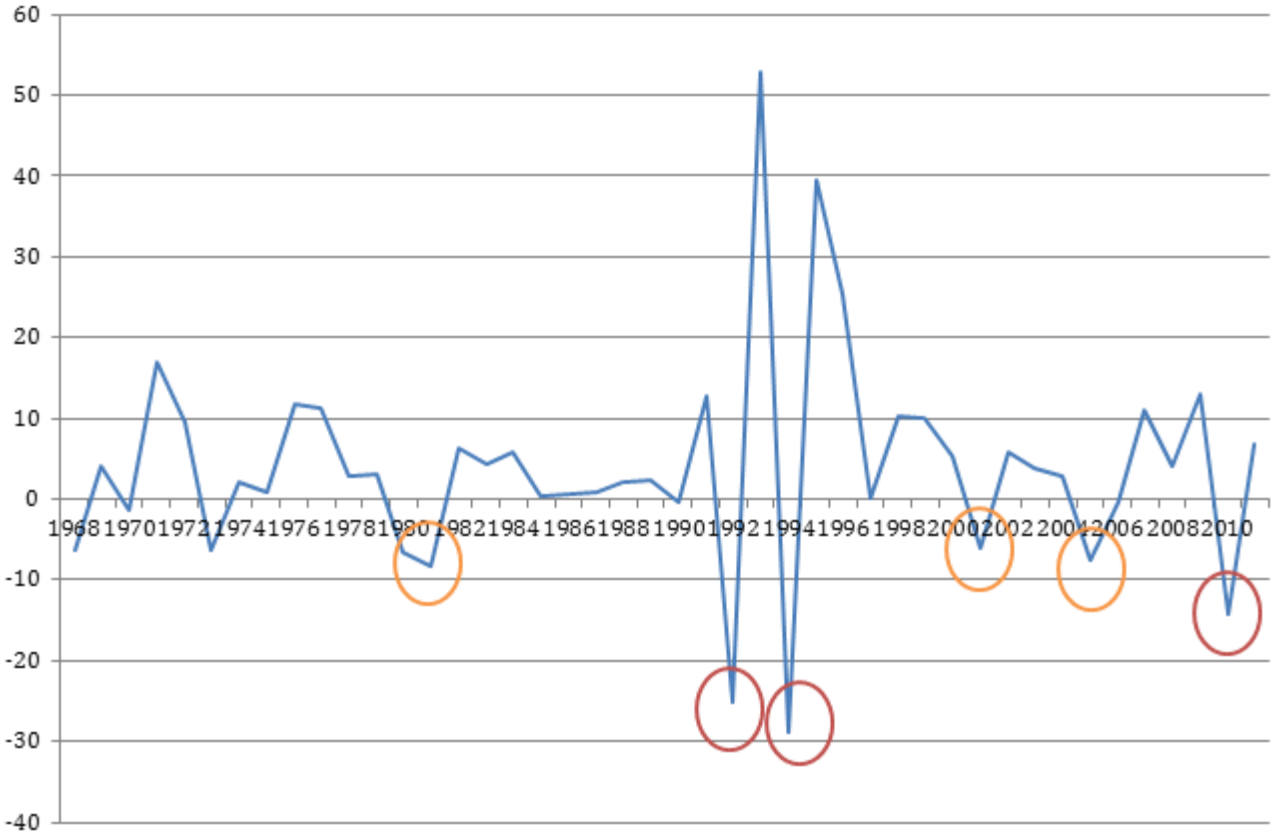
- Governments' main concern is often food security
- Limited fiscal space to manage coping mechanisms
- Domestic political economy => rural vs. urban, farmers vs. processors and traders

Other Areas Affected

- Household incomes and poverty
- Malnutrition
- Sustainability and economic growth
- Government's fiscal balance, tax and foreign exchange receipts
- Etc.

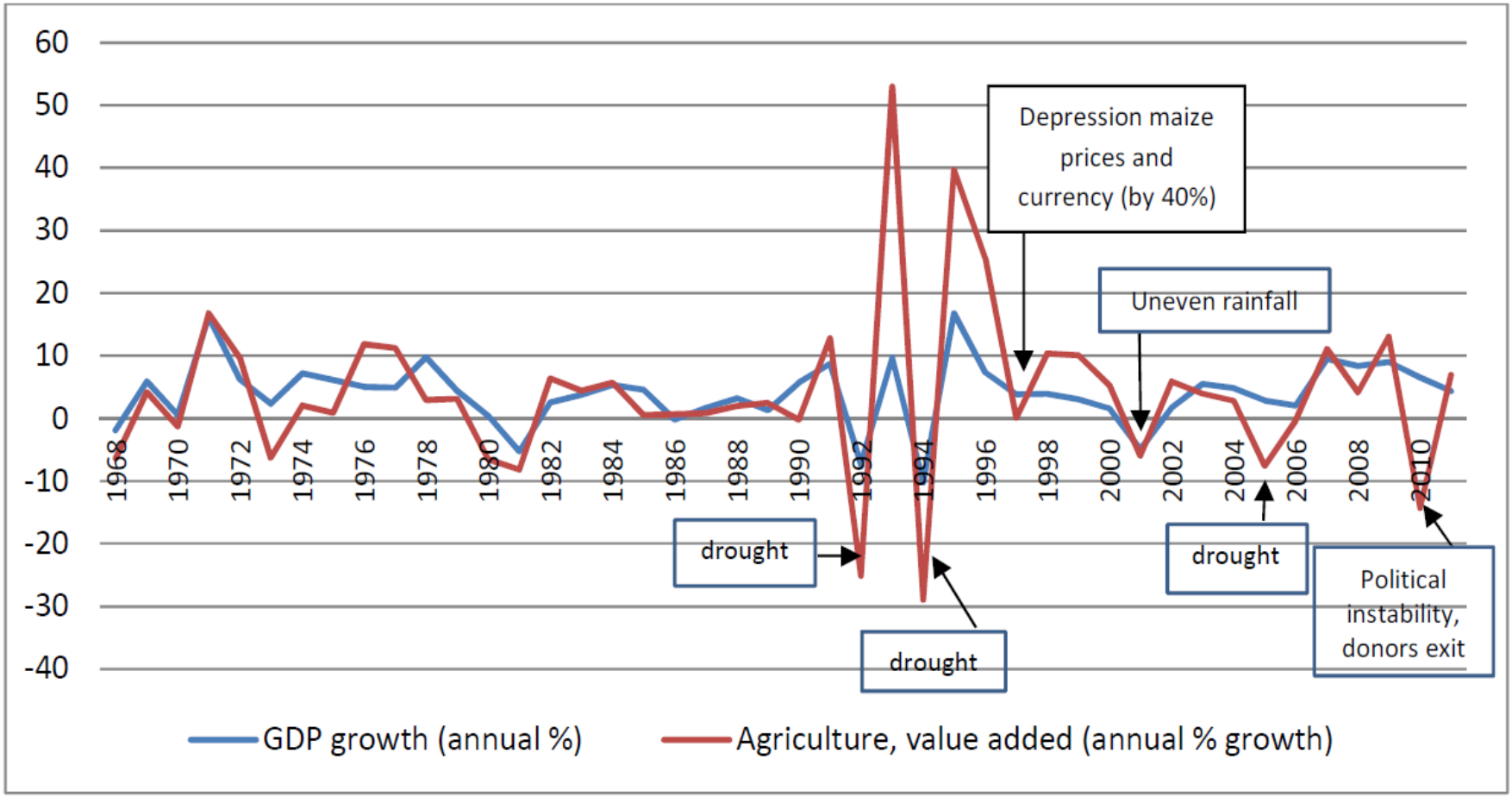
Malawi: Growth in Agricultural Value Added (1968-2011)

=> Growth was negative six times since 1980



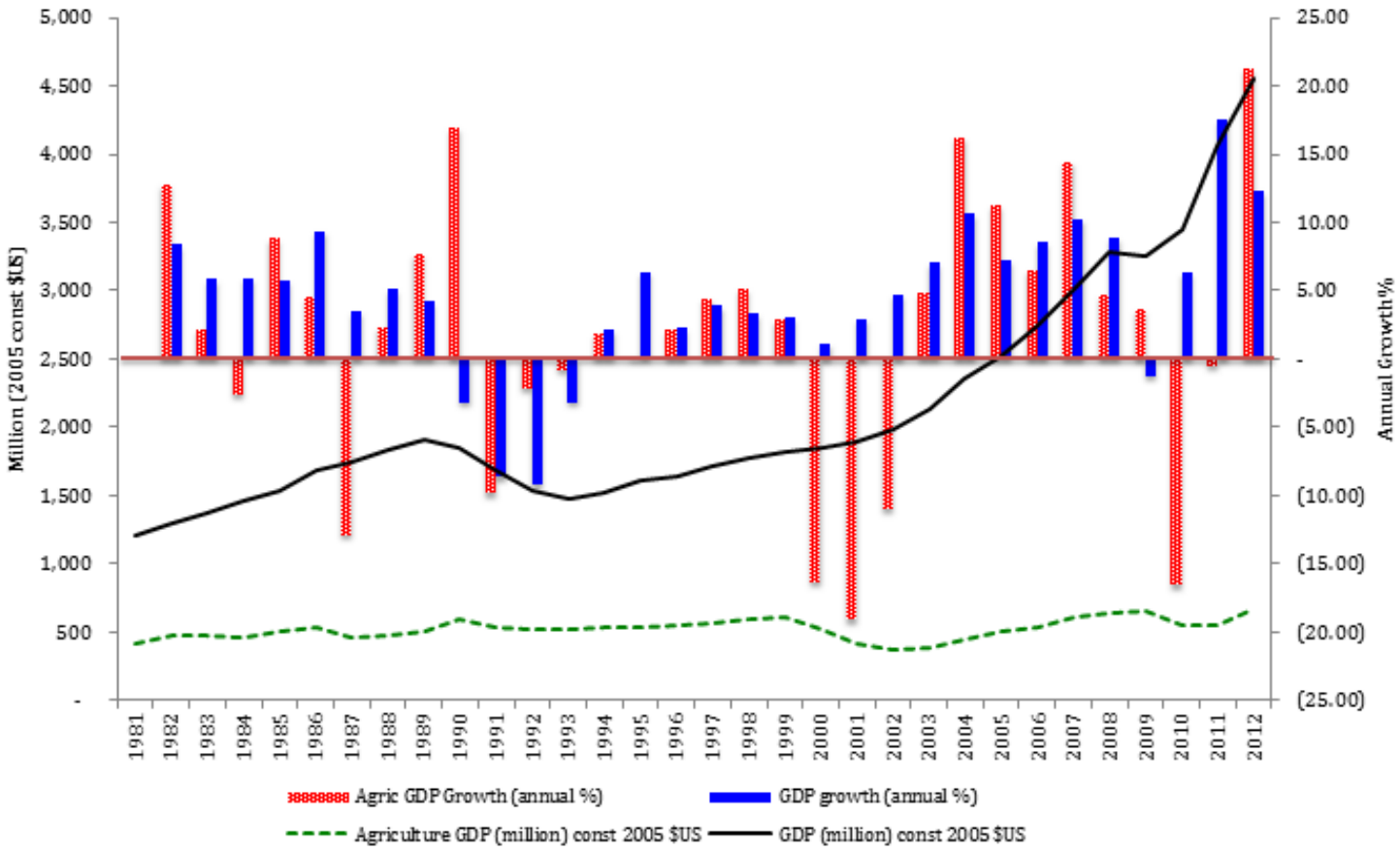
Source: WDI, 2014

Malawi: Growth in GDP and Agricultural Value Added (1968-2011)



Source: WDI, 2014

Mongolia: Growth in GDP and Agricultural Value Added (1981-2012)



Source: WDI, 2013

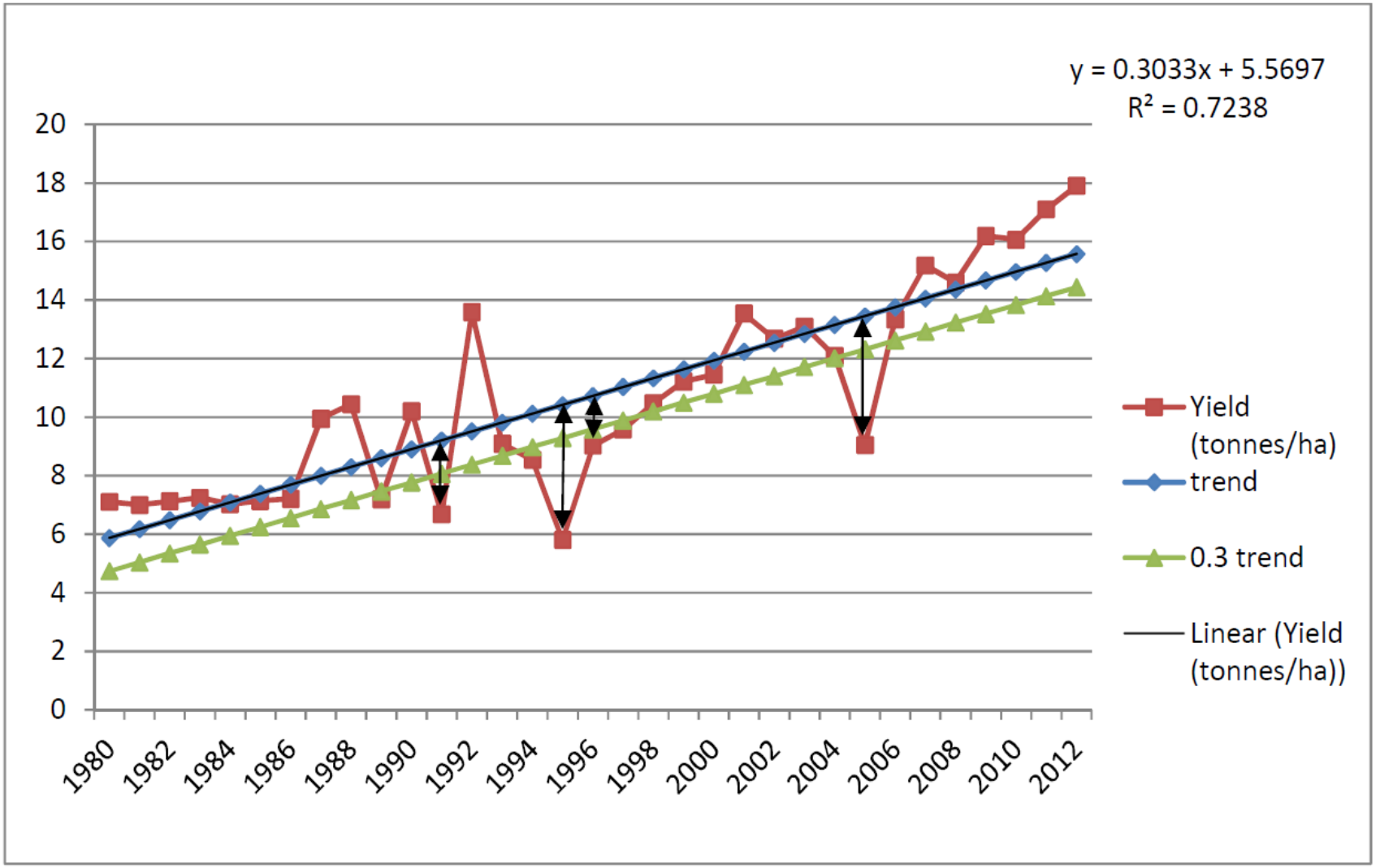
Three Types of Risks in the Sector Wide Risk Assessment

- Production risks
- Market risks
- Enabling environment risks

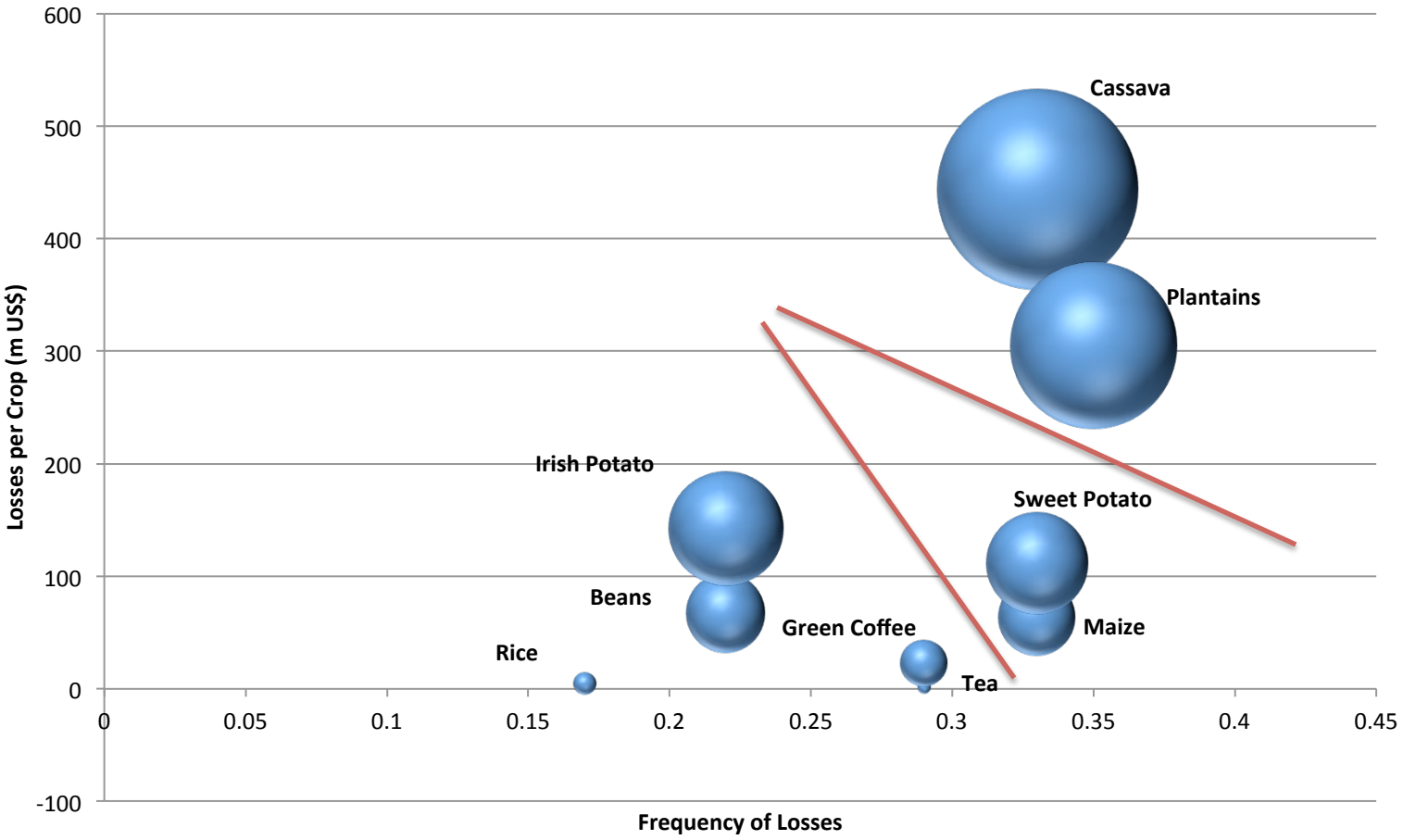
⇒Assess the impacts on biggest commodities

⇒Qualitatively and quantitatively

Example of How to Calculate Production Losses – Potato Malawi

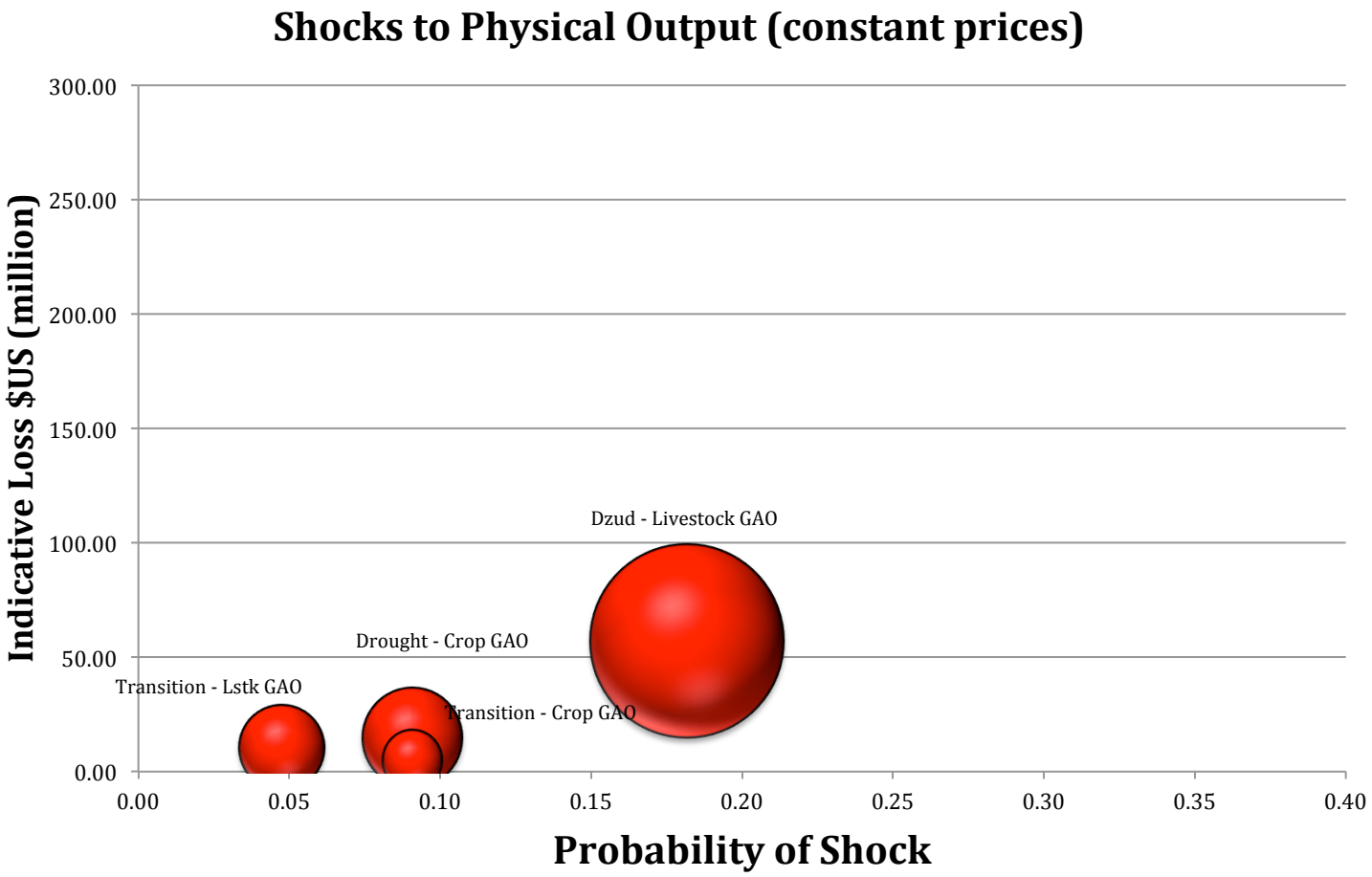


Rwanda's Risk Prioritization According to Crop Vulnerability



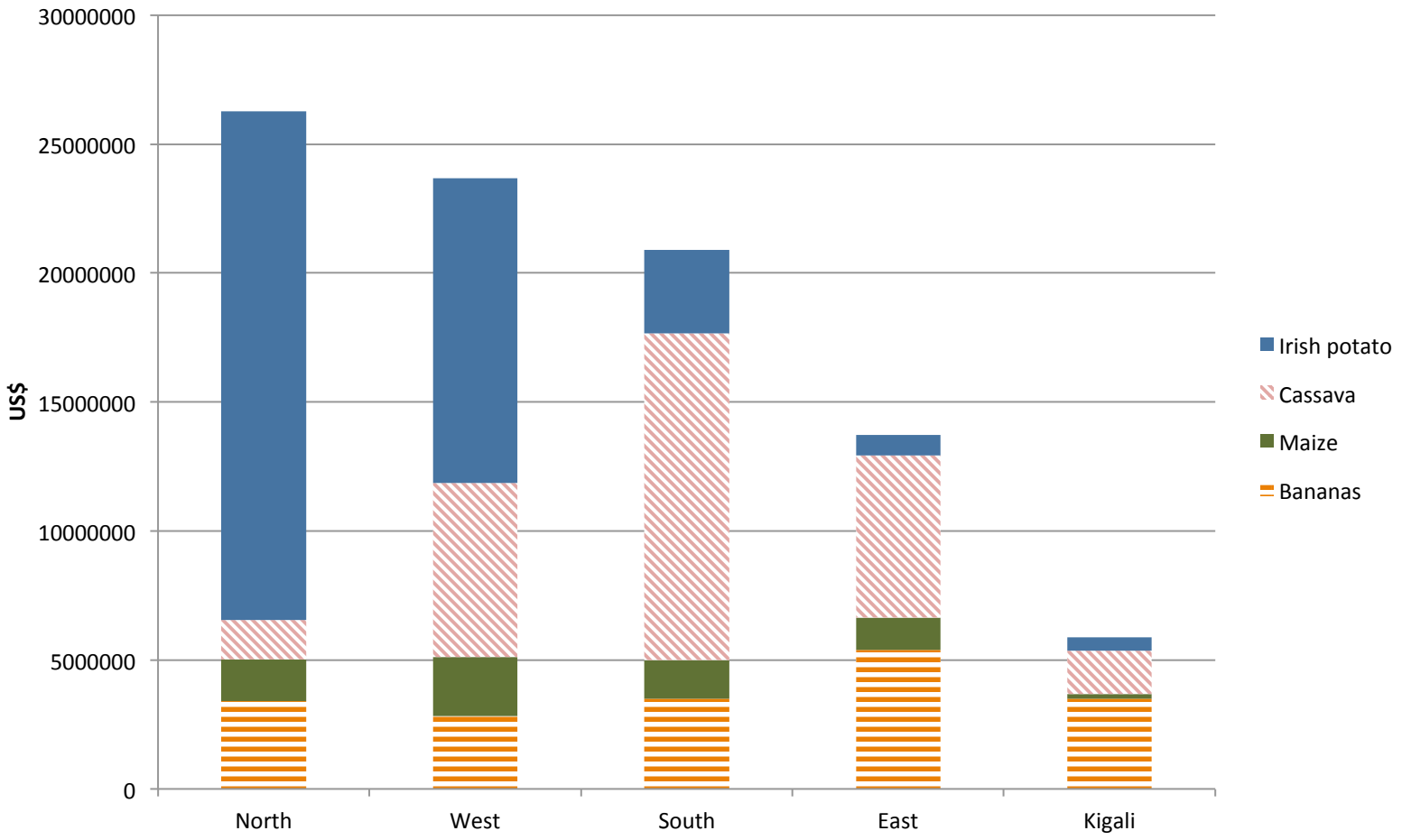
Source: FAO STAT, ARMT's calculations

Mongolia's Risk Prioritization According to Peril



Source: FAO STAT, ARMT's calculations

Annual Regional Losses in Rwanda According to Main Crops

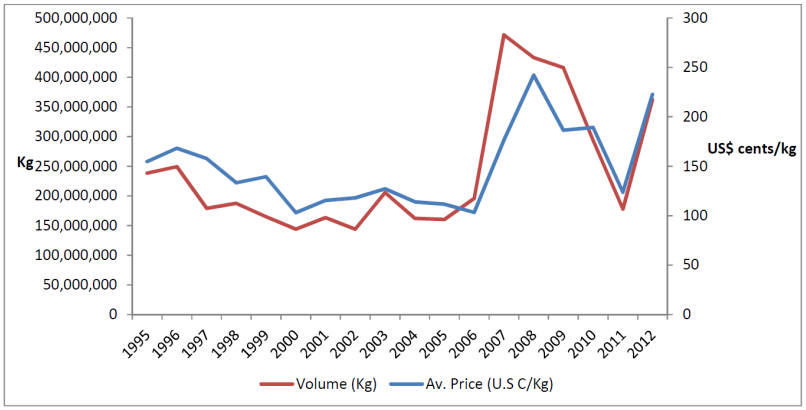


More Difficult to Assess Impacts of Price Risks

Who bares the cost of increases vs. decreases?

- Output price volatilities can be off-set (or even caused by) by changing input prices.
- Producer prices and retail prices/international prices don't always change. equally, which may decrease the impacts on the economy as a whole, or even provide opportunities for certain actors.
- Additional layer of complexity is that even self-sufficient farmers sell and buy at different periods in the season and may therefore not benefit from high prices.
- Decreased commodity prices will, all other things equal, be beneficial for consumers, and thus may have a positive impact on the over-all economy.

Important to assess volatilities to understand uncertainties in the sector and what are the root causes of these volatilities.



Source: Tobacco Control Commission

Other Market Risks and Enabling Environment Risks

- SPS and food safety related unpredictable trade restrictions
- Volatile exchange rates
- Erratic export and import regulations
- Erratic sector policies (e.g. subsidies, market interventions)
- Etc.

=> All of these are disincentives to production and ultimately contribute to market volatilities

Other Aspects of the Risk Assessment

- Recent risks – even though long term trend may have on average little volatility, recent changes needs to be paid attention to
- Future risks according to climate change projections (risks vs. trends!) – what does this mean going forward?
- Potential future risks given existing policies and strategic vision for the sector – are policies or structural changes foreseen for the sector implying new or increased risks? If so, how can these be mitigated?

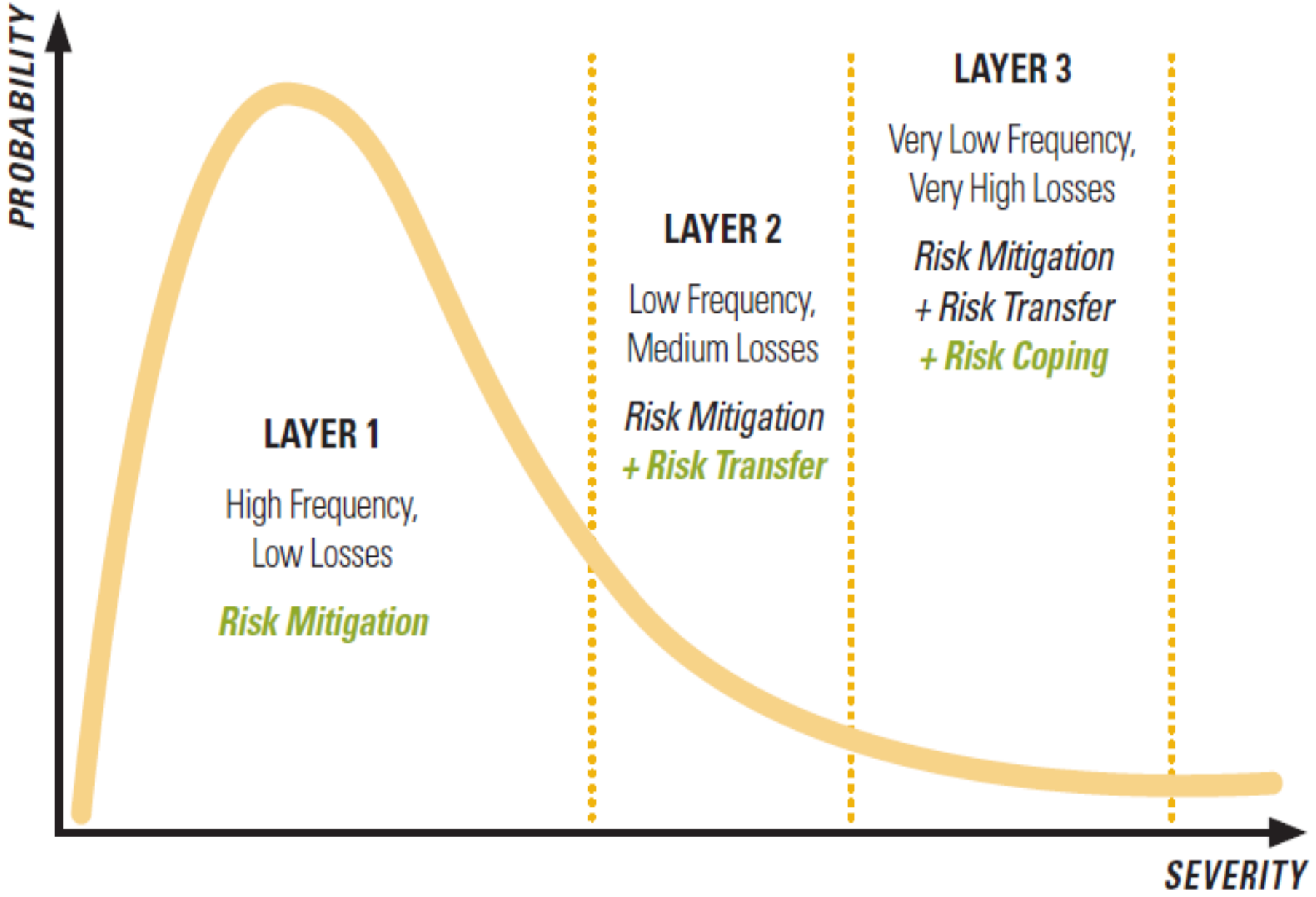
Next Steps: Identifying Root Causes and Vulnerable Groups

After national and regional risks have been assessed, losses estimated, and crops and perils prioritized, next steps are:

- Identify root causes of losses
- Make stakeholder assessments
  - Stakeholders in supply chain
  - Different income groups among producers
  - Gender roles in the sector – who is involved in what?
- Map current risk management mechanisms in the sector, including GOV Institutions and Public Expenditures

=> Ready to identify risk management instruments

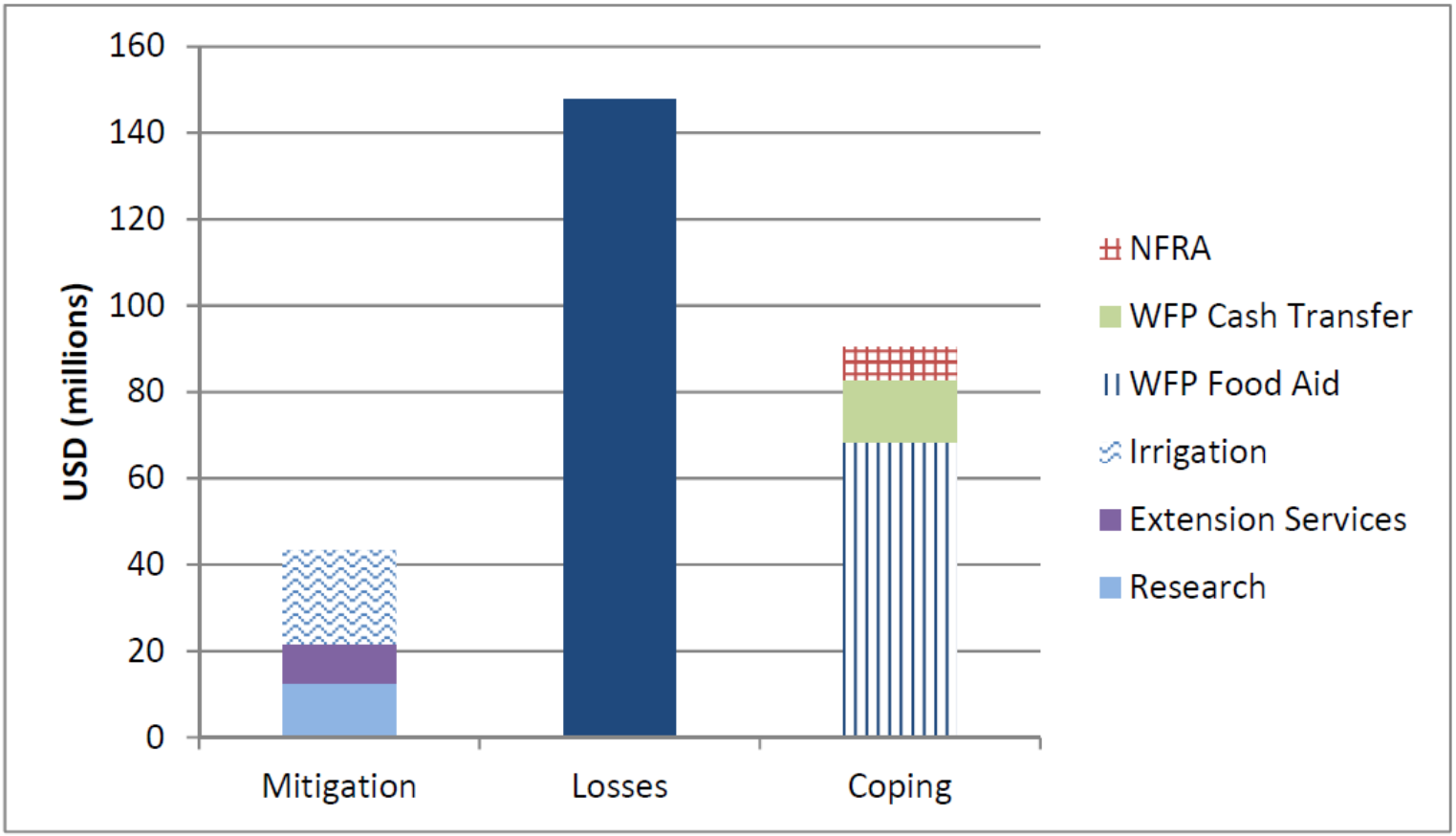
Risk Management Through a Layering Approach



Why Is Effective Risk Management Important for Our Clients?

- Production losses imply lost investments in the sector, both private and public
- Costs of coping mechanisms mean diverting resources from more long-term objectives
- Often big wins from investing in mitigation measures
- Risk management is often conducted ad hoc and through a piecemeal approach and sometimes through contradictory policies -> helps streamlining and prioritizing interventions through a systems approach

Example: Current Costs of Risks and Risk Management in Malawi

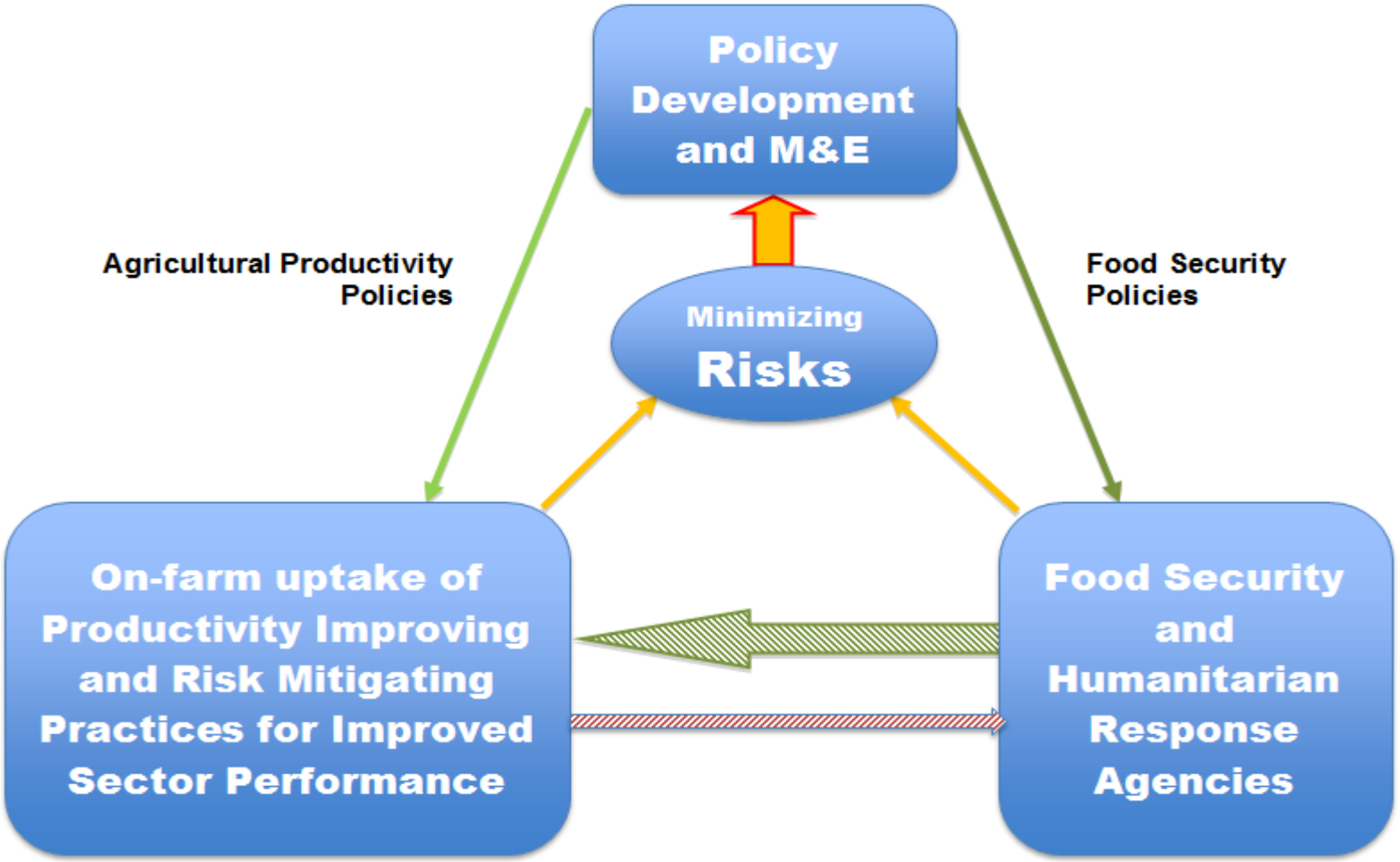


Source: World Bank Ag. PER, 2014. Mitigation is calculated using an annual average of government expenditures from 2008-2012. Losses are an annual average from 1980-2012. Coping is an annual average of NFRA expenses to the WFP, DODMA, and ADMARC, as well as the amount spent in 2014 (the only year for which information was available) for WFP food aid and cash transfer expenses.

Note: The accuracy of cassava production data is debated and losses may therefore be lower than shown in figure

Importance of Streamlining Risk Management Policies

=> Price risk management through food security policies will directly affect the effectiveness of productivity enhancing policies and thus longer-term risk mitigation.



Choices Depend on The Type of Country

Risk assessments conducted in diverse countries from Kazakhstan and Brazil to Malawi and Niger -> very different challenges and options depending on:

- Overall economy and income levels
- Natural resource environment
- Available resources, donors
- Other systems in place like social safety nets, registers, M&E systems
- Rural vs. urban economy
- Net consumers vs. net producers
- Political economy and windows of opportunity
- Etc.

=> Risk management is a process, not a one-time intervention – will evolve with the environment in which the sector operate.

Challenges

- Data – inaccurate and even debated within country; often difficult to get for subnational levels
- Difficult to measure price volatility impacts – whose losses are we measuring?
- Climate change projections – beyond our scope and often not conducted at subnational/AEZ levels
- Implementation:
  - in-country systems and resources
  - political economy

Thank You!

Åsa Giertz
Agricultural Specialist
agiertz@worldbank.org