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## Executive Summary

This brief presents selected material from the Fourth African Agricultural Markets Program (AAMP) policy symposium, *Agricultural Risks Management in Africa: Taking Stock of What Has and Hasn't Worked*, organized by the Alliance for Commodity Trade in Eastern and Southern Africa and the Common Market for Eastern and Southern Africa that took place in Lilongwe, Malawi, September 6-10, 2010. We draw almost exclusively from Rashid and Jayne's summary, "Risk Management in African Agriculture: A review of experiences." This article summarizes across the background papers, with major findings grouped into three broad categories: cross cutting, government-led policies, and modern instruments. We describe these findings below:

- Cross cutting:
  - "More attention should be given to addressing the sources of risks, rather than managing the manifestation of risk."<sup>1</sup> For example, the ultimate solution to drought is not weather insurance but developing irrigation or drought-resistant crop varieties.
  - "There is *no single policy instrument* that can address the risk mitigation needs of all income groups in a given country." As *Table 2* illustrates, there is no "one-size-fits-all" risk policy. For example, the poor cannot afford premiums for weather insurance, while those above the poverty line are excluded from social safety nets.
- Government-led Policies:
  - Research shows that government interventions pursuing food price stabilization have been counter-productive. The authors refer to a study showing that Mozambique and Uganda, two more liberalized countries, have experienced a greater than 100% increase in maize production by maintaining stable maize marketing and trade policies. In comparison, Malawi and Zambia have both engaged in frequent and serious interventions and report the highest degree of price volatility and price uncertainty.<sup>2</sup>
  - Strategic grain reserves (SGR) are useful due to the difficulty in importing food for a food crisis and the increased frequency of natural disasters, civil strife, and the HIV-AIDS epidemic. An IFPRI research project shows that those countries with simple, autonomous SGR organizations that involve NGOs and are integrated with food security programs are successful. Additionally, if stocks are kept low (e.g. a three-month supply), price depressing effects are moderate.<sup>3</sup>

NOTE: The findings and conclusions contained within this material are those of the authors and do not necessarily reflect positions or policies of the Bill & Melinda Gates Foundation.

- Modern Instruments
  - Warehouse Receipt Systems (WRS) are an essential part of commodity exchanges and can alleviate liquidity constraints. While WRSs have been instituted in most AAMP countries, they have found limited success scaling up operations or reaching the poor. WRSs rely on credible grades and standards, strong regulatory and financial institutions, and large volumes of deposits, which are serious constraints in Sub-Saharan Africa (SSA).<sup>4</sup>
  - Weather Index Insurance, while attractive, remains nascent. Eleven pilot programs have been initiated in AAMP countries since 2005, only covering 75,000 households. Of those 11, the two largest have been discontinued.<sup>5</sup>
  - Commodity Exchanges have frequently failed in Africa. Only the exchange in South Africa functions independent of donor support. Exchanges in Zambia, Zimbabwe, and Uganda have failed because of unusual price hikes, government intervention, and insufficient trade volume.<sup>6</sup>

Below, we present and explain two tables from the conference summary paper.<sup>7</sup> The symposium summary paper and a table displaying background papers and several presentations by the principal topics are included in appendices.

#### Sources of Agricultural Risks and Available Policy Options

The table below describes various policy responses to different sources of risks.<sup>8</sup> The authors provide a useful division of policy options: public investment, traditional and government-led policies, and modern instruments. The authors suggest public investment, such as developing infrastructure or new crop varieties, can go the farthest towards addressing the sources of risks. However, these investments remain low due to their long-term, resource intensive nature. Traditional means, such as kinship networks, can provide for smaller scale events, but are limited in dealing with large shocks. Government-led efforts often prove costly, inefficient, and even counter-productive. Finally, modern instruments show the potential to mitigate risks, but rely on market infrastructure to truly thrive.

Table 1: Sources of agricultural risks and available policy options

Risk Types*	Sources	Policy Options		
		Public Investment	Traditional & Gov.-led Policies	Modern Instruments
<b>Production risks</b>	Drought	Investment in R&D for drought tolerant varieties; development of irrigation, if possible	Kinships & social network; Prices and grain reserve policies;	Weather index-based insurance, crop insurance
	Floods	Investment in flood prevention measures (e.g., building dams)	Kinships & social network; Price stabilization; and grain reserves; flood reliefs	Flood insurance
	Disruption in input supplies	Developing supply chains for all key inputs	Kinship (e.g., sharing among farmers); and public input distribution programs;	N/A
	Infestations	Investment in R&D; supply chain development for insecticides	Public insecticides supply programs	N/A
<b>Price / marketing risks</b>	Inadequate physical Infrastructure	Investments in road and other infrastructure	Social network & public policies are unlikely to address this.	Social network & public policies are unlikely to address this.
	Inadequate market infrastructure	Develop market infrastructure	Social network & public policies are unlikely to address this.	Social network & public policies are unlikely to address this.
	Inadequate access to credit & insurance	Develop credit/insurance markets	Subsidized credit program	Warehouse Receipt System (WRS); weather insurance; crop insurance, etc.
	Weak price / market information	Promote development of information technology; develop market information systems	Kinships & social network; Price stabilization; and grain reserves	Commodity exchange if feasible

Rashid and Jayne, 2010, p. 3

## Risk Management Options and Relevance to Income Groups

This table describes the relevance of different policy options to different income groups.<sup>9</sup> The authors suggest that the poorest benefit most from traditional and government-led options. Larger agricultural households benefit most from more modern, market-based policies. The authors suggest that those hovering around the poverty line are most vulnerable to risks: not eligible for most emergency aid, nor able to engage in more modern instruments. Additionally, the private sector increasingly becomes an important actor in modern risk management policy options.

*Table 2: Risk management options and their relevance by income groups*

Policy options for	Income groups			Key Actors
	Below Poverty Line	Above poverty line, but vulnerable to risks	Large agricultural households or commercial farms	
Social Safety Nets	Very Relevant	Not so relevant (they're generally excluded from Social Safety Net programs)	Not directly relevant	Government, NGOs, CBOs, & international agencies
Distribution from food reserves	Very relevant	Not so relevant (they're generally excluded from relief programs)	Not directly relevant	Primarily Government, but NGOs and CBOs can play a role
Reliefs / emergency assistance	Very relevant	Not so relevant (they're generally excluded from relief programs)	Not directly relevant	Government, NGOs, CBOs, & international agencies
Warehouse Receipts System	Not directly relevant	Somewhat relevant, (through coops or farmers' organizations)	Very relevant	Private sector with legal and regulatory supports from the government
Weather Insurance / Crop insurance	Not directly relevant	Relevant, but not commercially viable. That is, program needs subsidy	Very relevant	Private sector with legal and regulatory supports from the government
Commodity Exchange	Not directly relevant	Somewhat relevant if it improves price discovery	Very relevant	Private sector with legal and regulatory supports from the government

*Rashid and Jayne, 2010, p. 5*

*Please direct comments or questions about this research to Leigh Anderson, at [eparx@u.washington.edu](mailto:eparx@u.washington.edu)*

## **Appendix 1. Agricultural Risk Management in Africa: A Summary Issues and Experiences, Lilongwe, Malawi, September 6-7, 2010**

### **Agricultural Risk**

Agriculture is an inherently risky business. Drought, floods and wide swings in fertilizer prices and world food prices translate into high variability in domestic production and staple food prices.

In the absence of risk management institutions, farmers adopt less risky and less profitable land uses that lower overall productivity. Available studies suggest that farm incomes would be as much as 30% higher than current levels if farmers had the option of effectively mitigating risks. Given the high costs these risks impose – on national incomes, vulnerable household welfare and political stability – managing these risks remains central to achieving rapid agricultural productivity and growth.

Policy makers, practitioners, and food policy researchers have long debated means of managing these risks. While traditional *marketing board-centric* policies proved expensive, dismantling of those policies under the structural adjustment of 1980 and 1990s has not been fully effective either. Modern, market-based risk management options—such as commodity exchanges, weather insurance, warehouse receipts—remain in their infancy across much of Africa. The resulting lively debates have focused on finding the right mix of short term interventions for managing risk while the countries find ways to solve underlying causes (*Table 1*).

### **Long-Term Solutions**

Agricultural risks result from underlying agro-ecological, infrastructural, and institutional bottlenecks, the ultimate sources of agricultural risks. Hence, long-run risk management policies need to focus on curing these problems at the source (*Table 1*). These efforts will require substantial increases in long-term public investment in agriculture. Yet in recent years, public investments in agriculture have averaged about four to six percent for Africa, and only a handful of countries have reached or exceeded the CAADP target of ten percent. As a result, public investments in building basic market fundamentals (e.g., rural roads, rural electricity, telecommunications, etc.) continue to remain low. Investments in rural roads, electricity, telecommunications and irrigation will need to be stepped up in order to reduce or eliminate sources of production and price risks.

### **Short-term Mitigation**

#### Traditional, government-led efforts

Reviews of past experience indicate that traditional food reserves and buffer stock schemes for staple food price stabilization have often proven costly, inefficient and sometimes even counter-productive. Indeed, available studies suggest that countries intervening in these ways have generally experienced lower agricultural growth and higher price variability. This suggests that many governments' well-meaning attempts to stabilize prices may actually destabilize them.

Strategic grain reserves (SGR) seem to work best where governments manage small stocks, with a lean organization, transparent management rules and links with safety net and emergency operations. Most reviews likewise recommend that government-led price stabilization policies be reformed to contain potential market destabilization and instead adopt clear, transparent intervention rules that help to stimulate market development.

## Modern instruments for managing risk

### *Agricultural commodity exchanges*

Agricultural commodity exchanges, such as the SAFEX exchange in South Africa, provide modern machinery for transparent price formation and future price forecasting and thus provide the foundation for a host of modern risk management options, including call forward contracts, call options, and price hedging. However, such initiatives have had limited success in Africa. Investments in data, information, logistics, awareness, human capital, grades and standards and market institutions needed for modern instruments to take-off.

### *Warehouse Receipt Systems (WRS)*

Given their inter-linkages, WRS and commodity exchanges have faced some common problems, including lack of enforceable grades and standards, size of transactions, enabling regulatory environment, and public interventions in grain markets. Despite these challenges, WRS have shown signs of success in some AAMP countries.

### *Weather Index Insurance*

Our review suggests that these programs are in their infancy, with very limited reach and insurance coverage. Total beneficiaries under all pilots in AAMP countries covered about 75,000 households, which is minuscule compared to the size of the farming community. These pilots, however, offer the following valuable lessons: a) Many countries in the region do not have the necessary infrastructure (e.g., weather stations) and hence data to construct the indices. Thus, investment in the necessary infrastructure is critical. b) Implementation of weather insurance requires highly skilled human capital, which again is limited. Large resources spent on some expensive pilots can go towards that end.

## Appendix 2. List of Conference Background Papers and Presentations

Topic	Background Papers	Presentations and Training Materials
<b>General Risk Management</b>	<i>Risk management in African agriculture: a review of experiences.</i> Shahidur Rashid and T.S. Jayne	<ul style="list-style-type: none"> <li>• <i>Risk management in Africa agriculture: workshop objectives and organization.</i> Shahidur Rashid.</li> <li>• <i>Towards an agricultural risk management framework.</i> Carlos Enrique Arce</li> <li>• <i>Risk management in African agriculture: overview of production risks.</i> Shahidur Rashid</li> </ul>
<b>Food Price Stabilization</b>	<p><i>NEPAD study to explore further options for food-security reserve systems in Africa.</i> June 2004</p> <p><i>Food price stabilization: lessons from eastern and southern Africa.</i> Nicholas Minot</p>	<ul style="list-style-type: none"> <li>• <i>Food price stabilization: lessons from eastern and southern Africa.</i> Nicholas Minot</li> <li>• <i>Role of the National Cereals &amp; Produce Board (NCPB) in producer price stabilization in Kenya.</i> David M. Nyameino</li> <li>• <i>Risk management in African agriculture: price policies in Ethiopia.</i> Shahidur Rashid and Solomon Lemma</li> <li>• <i>Price stabilization and strategic grain reserves: the case of Malawi.</i> Paul Thangata and Solomon Lemma</li> <li>• <i>Food price stabilization: concepts and exercises.</i> Nicholas Minot</li> <li>• <i>Model of food price stabilization</i></li> </ul>
<b>Crop Production Forecasts</b>	<i>The value of accurate crop production forecasts.</i> T.S. Jayne and Shahidur Rashid	<ul style="list-style-type: none"> <li>• <i>Crop forecasting accuracy and price instability.</i> T.S. Jayne and Shahidur Rashid</li> </ul>
<b>Warehouse Receipt Systems</b>	<i>Implementing warehouse receipt systems in Africa: potential and challenges.</i> Gideon Onumah	<ul style="list-style-type: none"> <li>• <i>Implementing warehouse receipt systems (WRS) in Africa: potential, challenges, and prospects.</i> Gideon Onumah</li> </ul>
<b>Commodity Exchanges</b>	<i>Purpose and potential for commodity exchanges in African economies.</i> Shahidur Rashid, Alex Winter-Nelson, and Philip Garcia	<ul style="list-style-type: none"> <li>• <i>The purpose and potential for agricultural commodity exchanges in Africa.</i> Alex Winter-Nelson</li> <li>• <i>Setting up agricultural commodity exchanges in Africa.</i> Ian Goggin</li> <li>• <i>Commodity price hedging and supply/price stabilization in Malawi: SAFEX call option.</i> David Rohrbach</li> <li>• <i>ZAMACE: Zambia Agricultural Commodities Exchange. Experiences and Constraints.</i></li> </ul>

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**Agricultural Insurance**

*Agricultural insurance in Sub-Saharan Africa: can it work?* Ruth Vargas Hill

- *Weather index insurance for agriculture: lessons learned.* Carlos Enrique Arce
- *Index-based weather insurance: a case for Malawi.* Eric Emmanuel Chapola.
- *Use of weather index as a tool to reduce food insecurity and vulnerability: a case for Ethiopia.* Almza Demessie
- *Index-weather insurance for farmers in Malawi.* David Rohrbach

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Source: AAMP, 2010

**References**

Rashid, S., & Jayne, T.S. (2010). *Risks management in African agriculture: A review of experiences*. Paper presented at African Agricultural Markets Programme's seminar "Agricultural Risks Management in Africa: Taking Stock of What Has and Hasn't Worked." Retrieved from <http://aec.msu.edu/fs2/aamp/index.htm>

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<sup>1</sup> Rashid and Jayne, 2010, p.18

<sup>2</sup> Rashid and Jayne, 2010, p.7

<sup>3</sup> Rashid and Jayne, 2010, p.9

<sup>4</sup> Rashid and Jayne, 2010, p.12-13

<sup>5</sup> Rashid and Jayne, 2010, p.14, 20

<sup>6</sup> Rashid and Jayne, 2010, p.16-17

<sup>7</sup> Rashid and Jayne, 2010

<sup>8</sup> Rashid and Jayne, 2010, p.3

<sup>9</sup> Rashid and Jayne, 2010, p.5