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# **Managing Risk in the Context of Climate Change**

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**I4 Technical Meeting, May 13, 2011**



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## Climate change exacerbates development challenges

- Developing country economies are concentrated in climate sensitive sectors like agriculture and tourism.
- Many of these communities are already dealing with climate variability and extreme events, but climate change will mean they have even less time for recovery. Their traditional coping mechanisms will be insufficient.





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## Climate change impacts expected in 14 countries

### Kenya

- Increased total annual rainfall, but falling more often in heavy events

### Ethiopia

- Increase in rainfall variability and frequency of both severe flooding and droughts

### Mali

- Shorter rainy season; Increased intra-seasonal variability  
= Greater seasonal drought risk for rice and maize and increased runoff from greater storm intensity
- But high levels of uncertainty in the model simulations





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## Climate change impacts expected in 14 countries

### Guatemala

- Reduced precipitation in July-September
- Expansion of semi-arid areas due to increased evapo-transpiration, rising temps
- 30% net loss in land suitable to farm coffee in Central America and Mexico by 2050



### Peru

- Andean glaciers expected to disappear in about ten years
- Precipitation decreases by 2050: 10% in the north, 19% in the central region, 14% in the south



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**Adaptation:** Building capacity in vulnerable countries and communities to prepare for, reduce, or cope with the negative impacts of climate change.

- **Reducing exposure**
  - Zoning (e.g., avoid building in floodplains)
  - Economic diversification to reduce dependence on agriculture
- **Reducing sensitivity**
  - Choose crops with wide temperature or drought tolerance
  - Build more resilient infrastructure
  - Increase access to irrigation
- **Increasing adaptive capacity**
  - Insurance, savings
  - Access to forecasts, early warnings
  - Crop/livelihood diversification





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## Climate variability vs. climate change

- **Addressing climate or weather risks does not automatically make it an adaptation program**
- **Build on vulnerability assessments that:**
  - Consider historic climate variability, recent trends, and future scenarios, and how climate change magnifies other stresses
  - Are participatory, aligned with development concerns, and identify priority actions and the necessary enabling conditions
- **Places to look for existing assessments:**
  - Adaptation country profiles on [www.adaptationlearning.net](http://www.adaptationlearning.net)
  - National climate change policies, and National Communications
  - National Adaptation Programs of Action (NAPAs) for Least Developed Countries (Ethiopia, Mali)



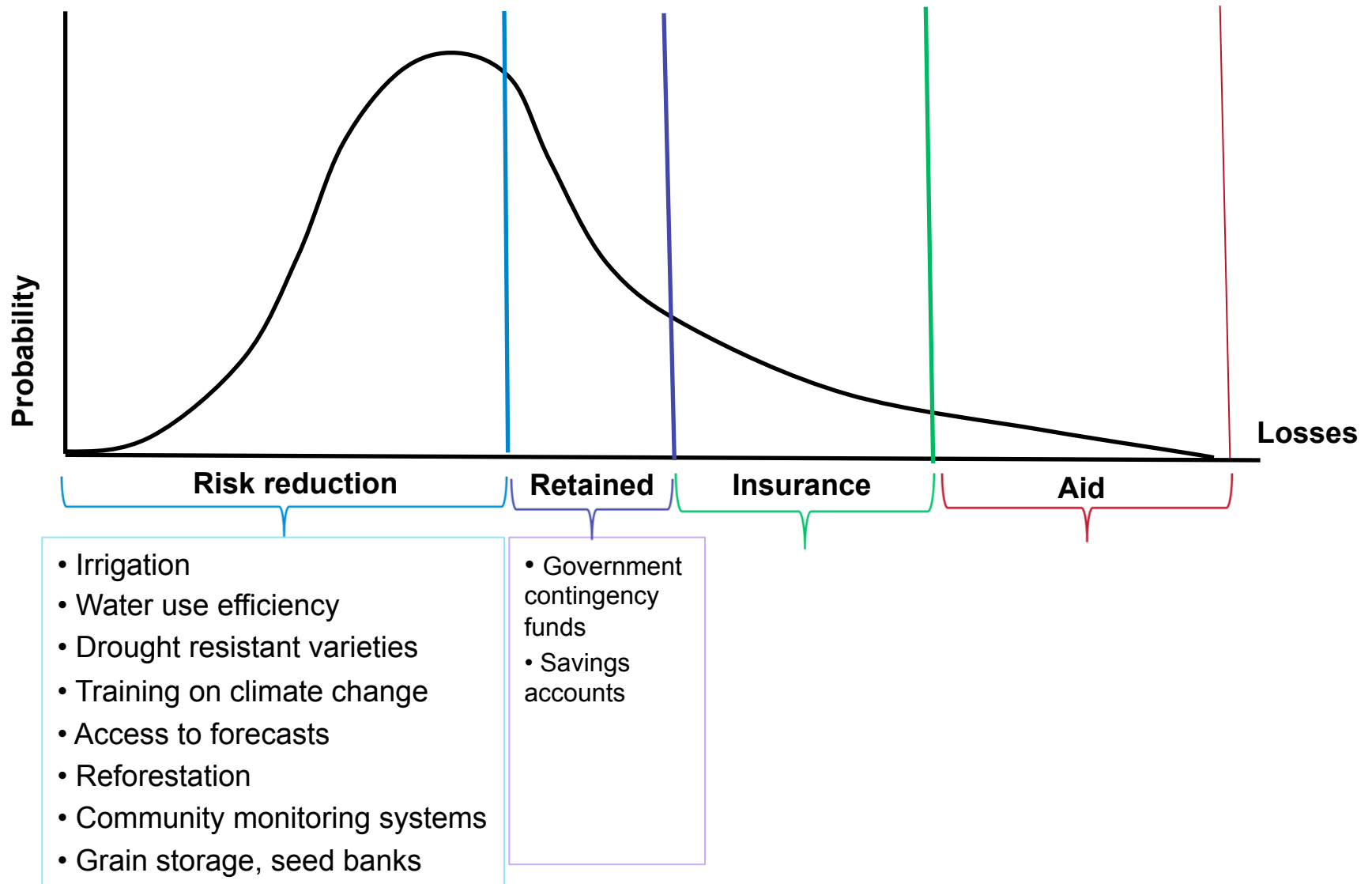
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## Using insurance to facilitate adaptation

- **Insurance can be a useful tool for adaptation.** It can counteract an increase in agricultural income variability, increase adaptive capacity, and also provide a price signal for transition to more resilient crops or livelihoods.
- **It is not a stand-alone solution.** Not all climate risks are insurable, or most cost-effectively addressed through insurance.
- **Complement other adaptation measures like risk reduction.**
  - Target residual risks that are left after doing risk reduction.
  - Design the different interventions simultaneously.
  - Take advantage of insurance outreach to educate clients about climate change and adaptation options.
  - Consider pricing that takes into account climate risks as well as clients' efforts to reduce their risks.



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## Designing insurance in this context

### Questions the pilots can help us answer:

- How can insurance products catalyze risk reduction efforts (e.g., increase farmer uptake of adaptive technology, or more resilient building design)?
  - Insurance-for-work tied to community risk reduction activities?
  - Price signals through varying premium rates?
  - Conditioning coverage on risk reduction efforts?
- How can insurance products sold on an annual basis consider changes in climate, and factor these in to risk analysis and pricing?