

SURVIVAL AND INNOVATION IN SMALLHOLDER AGRICULTURE

Enhancing the adaptive capacity of sub-Saharan
African production & marketing systems

IADG, May 4, 2010, Rome

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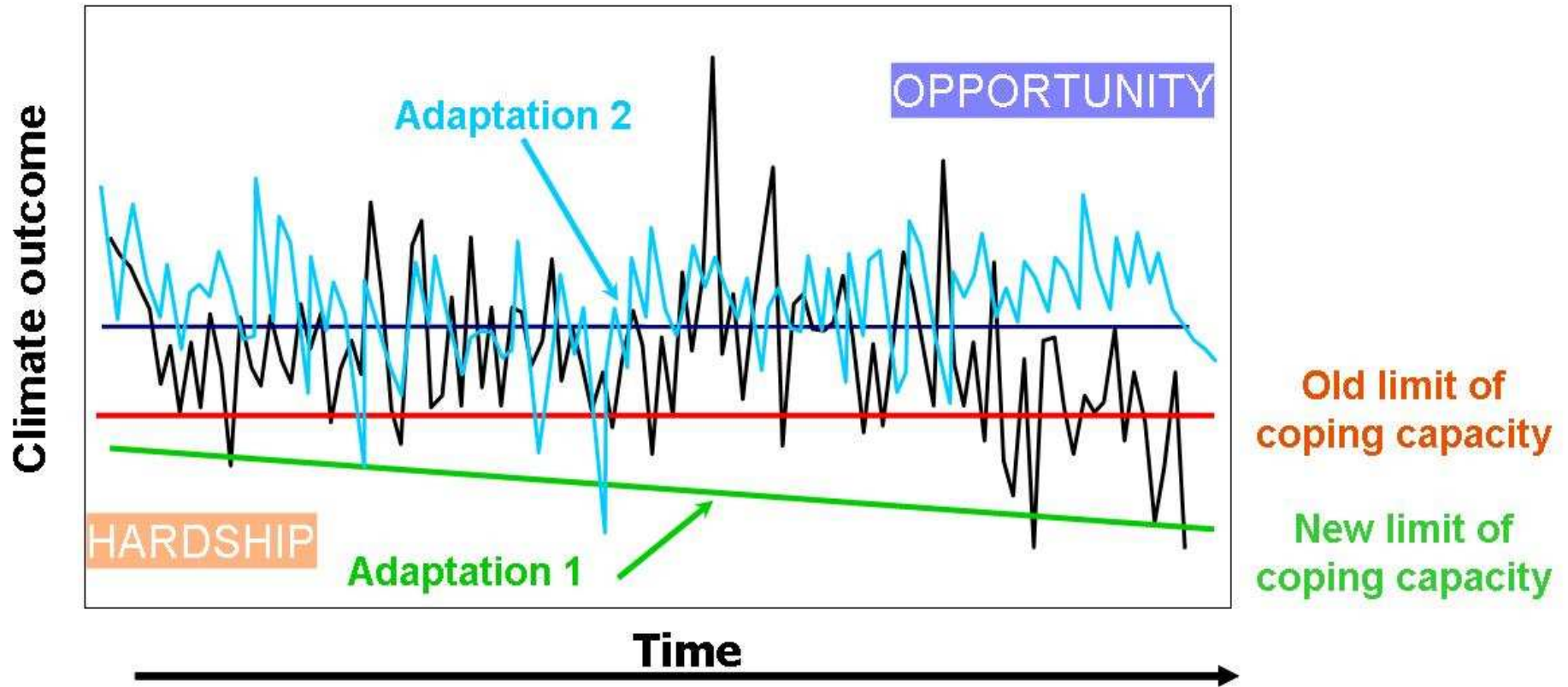
Wageningen Livestock Research & Centre for Development Innovation



Context

- Increasing need for food under increasing challenges:
 - Climate change - adaptation
 - Competition for land & water - cropping, livestock, other functions
 - Globalization – demand, price volatility
- **Sub-Saharan Africa: How to meet the challenge of higher agri-food productivity under increasing risks and uncertainty? (climate, market)**

Two approaches to climate change adaptation



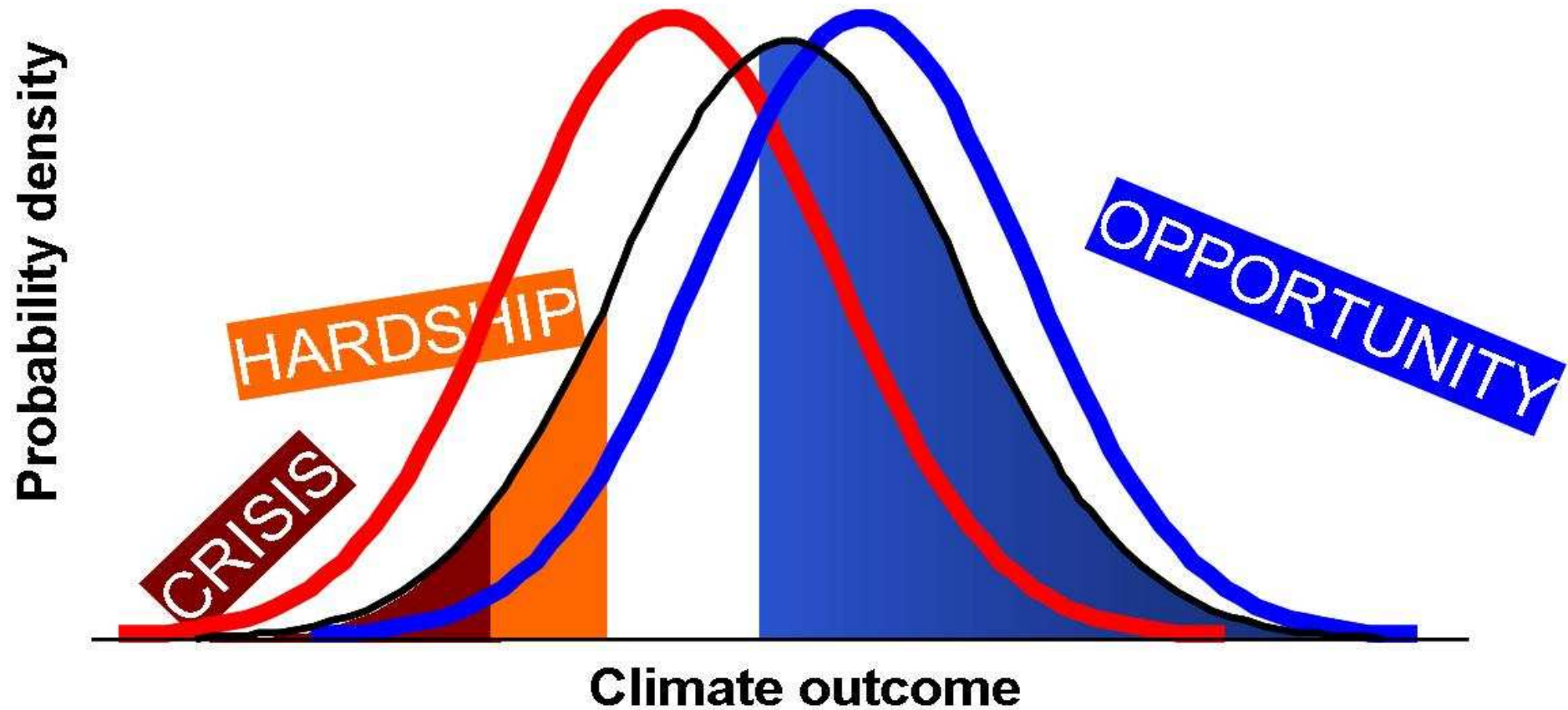
Smallholder risk management strategies

- Much is known about
 - bio-physical relationships, value of crop-livestock interactions
 - economic processes at higher levels
- Much less about
 - trader's risk management strategies and consequences of strategies of buyers and sellers
 - interactions between the social institutions of community and the local market system
- Prevailing local level systems inhibit adoption of innovations that would be individually attractive
- How could new forms of information provision, of technology and infrastructure fit in existing institutional social and market frameworks?

Goal:

To increase the adaptive capacity of sub-Saharan African smallholder agriculture production and market systems in order to reduce vulnerability to environmental risks.

How to utilize opportunities?



Without adaptation

With adaptation

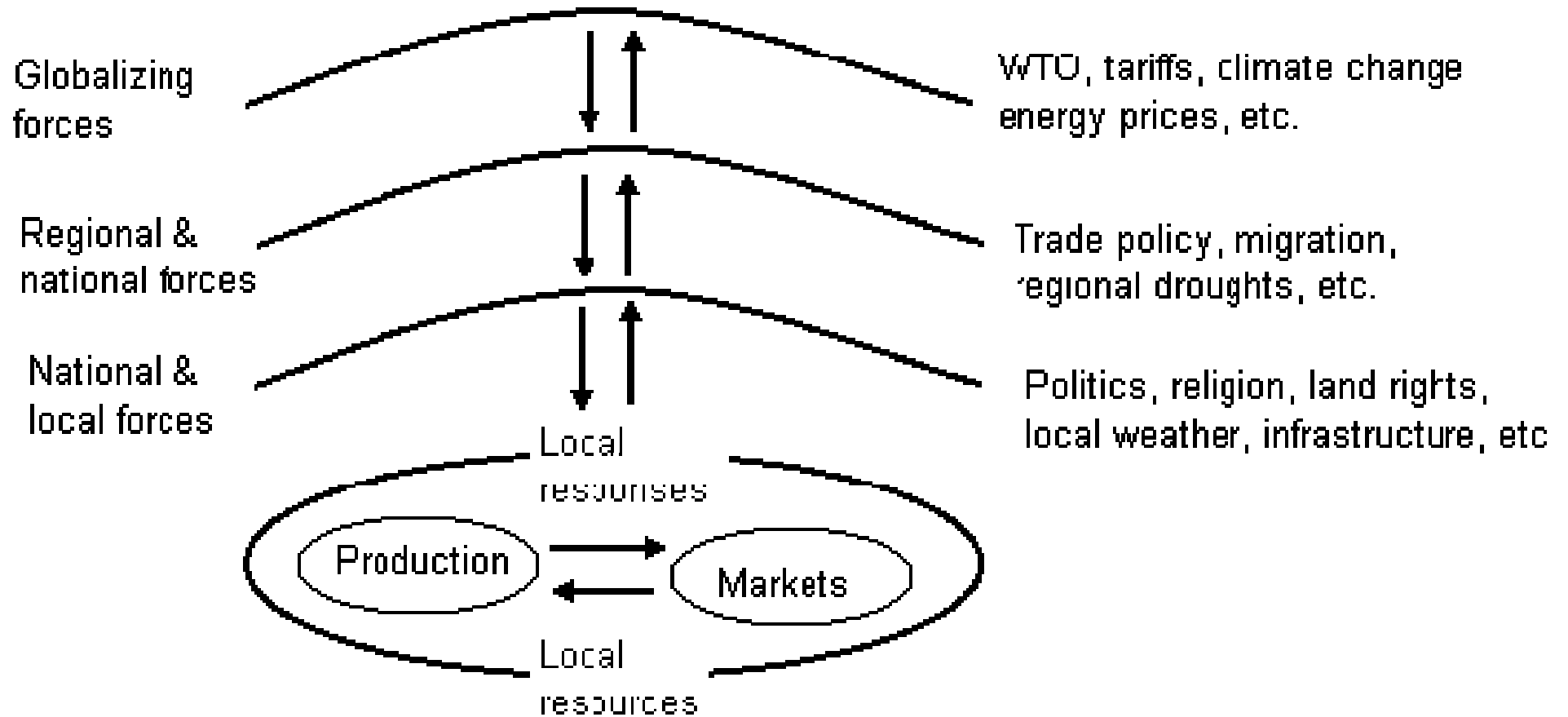
What are we starting from?

- productivity of many African agri-food systems governed by risk aversion strategies for production and market risks (high variability)
- not availability of technical interventions is main bottleneck for productivity increase, but set of bio-physical and socio-economic co-limitations
- more needs to be done on meso-level interactions of bio-physical and socio-economic systems, addressed by integrated systems approach

What are we starting from? - continued

- focus should be on mixed crop-livestock systems in semi-arid and sub-humid zones of sSA
- linking smallholders up to the market
- possible to identify attractors that can lead to better interaction and productivity/efficiency gain
- sufficient foreseeability of inter- and intra-seasonal weather (intertropical convergence zone, ENSA)
- space for better risk management through
 - better availability of information on context factors – weather, demand, prices
 - sequential decision making on production inputs
 - use of opportunities when they arise

Focus: Local production & market systems



Research questions

1. How optimal are current survival strategies to the status quo? (*i.e. market and production systems analysis*)
2. How can we use market and climate knowledge to improve risk management at household / community level?
(flow of information, mobile phones etc;
bad years: optimise water use; good years: optimise nutrition)
3. What innovations can improve risk management?
(marketing & infrastructure; production)
4. How can we enhance the ability to smooth risks over time, households, communities and markets?



Strategies / Research components

- **interdisciplinary approach** (animal, plant, soil sciences; sociology, economics, communication & innovation; human nutrition, logistics & marketing)
- **systems analysis, identifying status quo**
- **additional data collection and surveys over space and time** (producers, traders; cross-section and longitudinal)
- **study introduction of innovations and evaluate their performance over time** (e.g. mobile phone information dissemination, changes in husbandry practices and infrastructure)
- **study effect of innovations on adaptive capacity**

Study locations

- Based on set of criteria to be discussed and agreed with partners
- Initial selection
 - East Africa – Ethiopia/Kenya?
 - West Africa – Ghana/Nigeria?
 - Southern Africa – South Africa?

Wageningen UR core team

- Animal Science Group (LR)
 - Theun Vellinga, Jan van der Lee
- Plant Science Group (PRI, PPO, Uni) –
 - Holger Meinke, Huib Hengsdijk
- Environmental Science Group (Alterra)
 - Koen Roest, Madeleine von Mansfeld
- Social Science Group (Uni, CDI, LEI)
 - Kees Burger, Jan Helder, Gerdien Meijerink

Our interest:

- Local partners (research institutes, practitioners, policy makers)
- International and Western partners
- Funding partners

Your interest?

THANK YOU

comments welcome

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