MANAGING AGRICULTURAL RISK
1. Why Agricultural Risk Management is important
2. Agricultural Risk, Food Security, and Resilience
3. How to Identify, Quantify, and Prioritize Risks
4. How to develop a Risk Management Strategy
Agricultural risks: Defining the limits

**Risk:** Uncertain, events, leads to losses
- Caused by: droughts, flood, pest and disease outbreak, etc.
- E.g. Symptom: *yield volatility*.

**Distinguishing** it from:

**Constraint:** Conditions, certain, leads to sub-optimal performance
- Caused by: lack of access to inputs, poor technology etc.
- E.g. Symptom: *Low yields*

**Trend:** Longer term patterns (reversible or irreversible)
- Caused by – structural changes in agriculture, changes in climatic patterns etc.
- E.g. Symptom - *declining yield*
1. Why Agricultural Risk Management is important?
Growth: Strong correlation between GDP growth and Ag. sector growth

Importance of the Agriculture Sector

GDP growth (annual %)
Agriculture, value added (annual % growth)
Food security: Ag. Risk principal cause of transient food insecurity

FIGURE ES.2. ACUTE FOOD INSECURE POPULATION IN MOZAMBIQUE
Poverty: Agricultural risk biggest rural poverty trap
High need to address risk in a comprehensive manner
2. Resilience of Agricultural Systems and Food Security

How to go manage volatility?
Risks affecting resilience of agricultural systems are numerous . . . .
... so are the risk management options.
Characteristics of current risk management approaches

- Ex-post (panic mode)
- “Christmas tree” approach
- Vested interests dominate the agenda
- Interrelationship between different instruments is missing
- Big picture and long term goal (i.e. resilience) is often missing
Advantages of Resilient Supply Chains

Better Managed Risks = Improved Incomes & growth

**SHORT TERM**
- More stable input and output markets
- More empowered & responsive farmers
- More dependable production and food security
- Increased quality & traceability

**MEDIUM / LONG TERM**
- Better management of resources
- Reduced emissions and improved environmental impact
- Development of local markets
- Positive brand (including country) impact from leadership

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POVERTY  PROSPERITY
3. Ag Sector Risk Assessment:

How to identify, quantify, and prioritize risks
The World Bank’s Agricultural Risk Management Framework
Risk Assessment Process Flow (per supply chain)

- Step 1: Desk data assessment
  - Risk profile
  - Risk quantification

- Step 2: Stakeholders interviews
  - Frequency of events
  - Intensity of events
  - Capacity to manage
  - Special vulnerable farming groups assessment

- Step 3: Prioritization matrix

- Step 4: Risk solutions
COMPONENTS OF RISK PRIORITIZATION

- Frequency of events
- Potential to produce losses (intensity)
- Stakeholders' capacity to manage risk (women and men)
- Special vulnerable farming groups risk assessment (women and men)
Risk: Example of loss estimations by crop
Risk prioritization matrix for cotton

<table>
<thead>
<tr>
<th>Probability of Event</th>
<th>Negligible</th>
<th>Moderate</th>
<th>Considerable</th>
<th>Critical</th>
<th>Catastrophic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly probable</td>
<td>Sudden change in orders for chemicals.</td>
<td>Weather (droughts, floods, and so on).</td>
<td>Farmers’ credit default (chemicals).</td>
<td>International cotton price volatility.</td>
<td>Crop substitution.</td>
</tr>
<tr>
<td>Probable</td>
<td>Port delays.</td>
<td>Ginters’ credit default. Transaction tax default and payment delays by ginters.</td>
<td></td>
<td>Pests (aphids, worms, and so on).</td>
<td></td>
</tr>
</tbody>
</table>

FROM SUPPLY CHAIN RISKS TO SECTOR RISKS

AGRICULTURAL COMMODITIES

PRIORITIZED RISKS ONLY!
4. How to Develop a Risk Management Strategy
Risk solutions: layering approach

**Layer 1**
High Frequency, Low Losses

**Layer 2**
Low Frequency, Medium Losses
Risk Mitigation + Risk Transfer

**Layer 3**
Very Low Frequency, Very High Losses
Risk Mitigation + Risk Transfer + Risk Coping
SUMMARY OF LESSONS LEARNED

• RM is a process, not a product

• Resource limitations (both capacity and finance) forces prioritization of activities

• RM requires an integrated approach involving multiple complementary activities from a number of stakeholders

• Risk mitigation provides “multiple” benefits

• Ample room for market based solutions to agricultural risk.
Outcomes:

- Niger: $111 million CSA operation, PAGRA (10 year Action plan, and informed CPS)
- Kenya: $200 million CSA operation and informed the Govt. of Kenya CSA program (2015-2030)
- Vietnam: Informed $230 million sustainable agriculture transformation project to include coffee replanting
- Paraguay: Informed CPS and currently an operation under discussion
- Nicaragua: IDA project on Resilient Ag in the Dry Corridor (USD 50M) to operationalize policy recommendations.
- Mainstreaming ag risk management agenda
- Replication: IFAD’s Platform on Ag risk Mgmt. (PARM) to undertake risk assessment in 9 countries,

Holistic risk assmt. and mgmt. approach to help prioritize ag. resilience agenda
ADDITIONAL RESOURCES

- http://www.agriskmanagementforum.org/
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Risk Mitigation (*ex-ante*): Risk mitigation strategies are actions taken prior to a risk event to reduce the likelihood of risk or the severity of losses.

Risk transfer (*ex-ante*): Risk transfer tools and mechanisms transfer the potential financial consequences of particular risks from one party to a willing third party, usually for a fee or premium.

Risk coping (*ex-post*): Some risks cannot be mitigated or transferred, so risk coping strategies are needed to help stakeholders better absorb and recover from their impacts. These instruments improve the affected population’s resilience to withstand and cope.