

Reducing cost and regulating different forms of crop insurance: Issues and way forward

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Outline

- Introduction and current trends
- Different forms of crop insurance
- Issues for scaling up and key challenges
- The way forward

Present scenario

- **Continued demand-supply gap**
 - Demand for food
 - *Growing population, changing diet, urbanization, shift to bio-fuel*
 - Supply of food
 - *Constrained natural resources and conditions, shrinking labor force, low inventories, severe weather events*
- **Governments intent to increase production**
 - Intensified agriculture production
 - Rebuilding grain inventories

Role of crop insurance

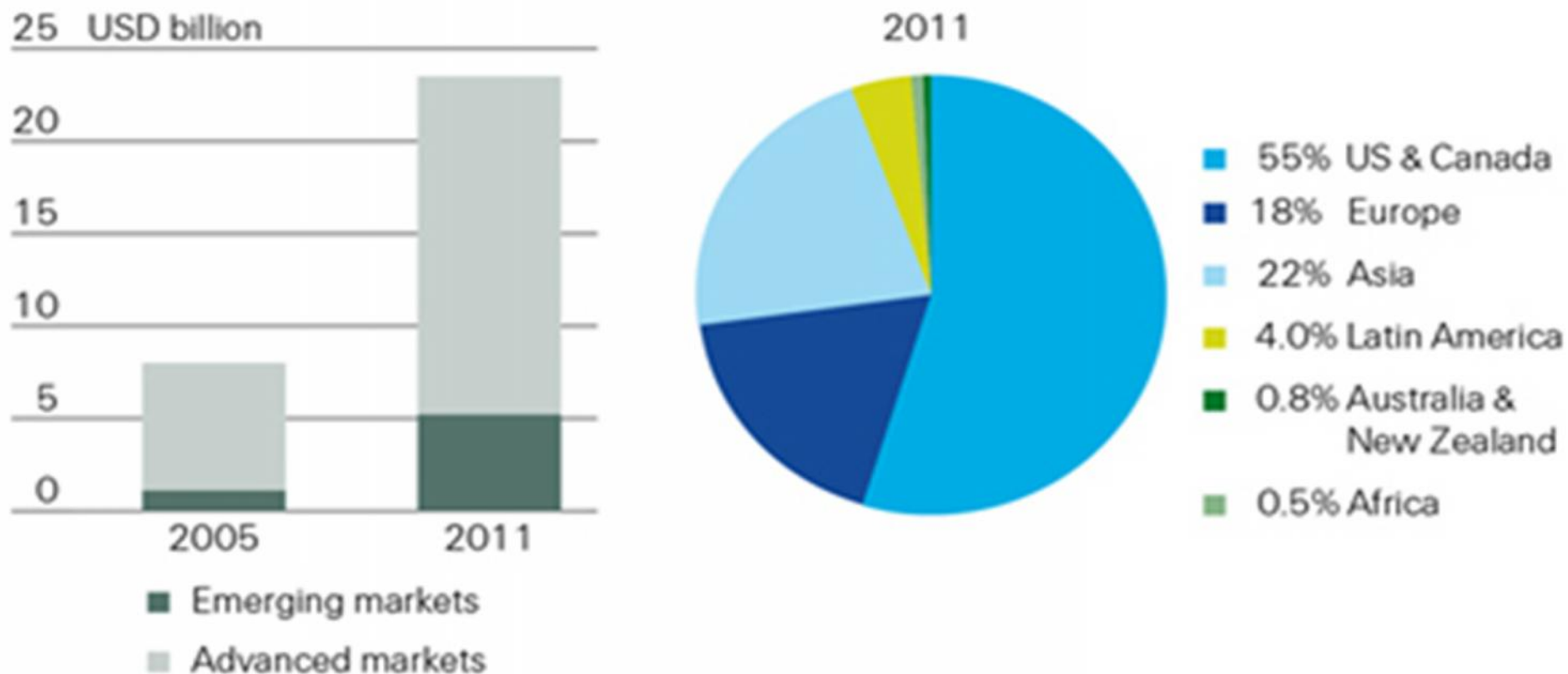
- Risk transfer/ management solutions to protect the production and financial risks of farmers
 - protects farm income
 - increases investments/ production
 - aligns production incentives
 - raises awareness about of mitigation
 - encourages investment in agricultural efficiency
- Supports shift from subsistence to commercial farming
- Supports risk governance

Governments' perception of crop insurance

- Shift from ex post (post-event) ad-hoc financing to ex ante (pre-event) risk financing
- Developed markets: Strongly support farm-based agriculture insurance through premium subsidies
- Emerging markets: Commission and support the implementation of insurance schemes and alternate distribution channels

Agriculture insurance premium

Estimated agricultural insurance premiums worldwide, 2005 and 2011



Sources: The World Bank; Swiss Re Economic Research & Consulting

In 2011, global agricultural insurance premiums were estimated at \$ 23.5 billion. Around \$ 5 billion was generated from emerging markets (62% by PR China and India).

Different forms of crop insurance

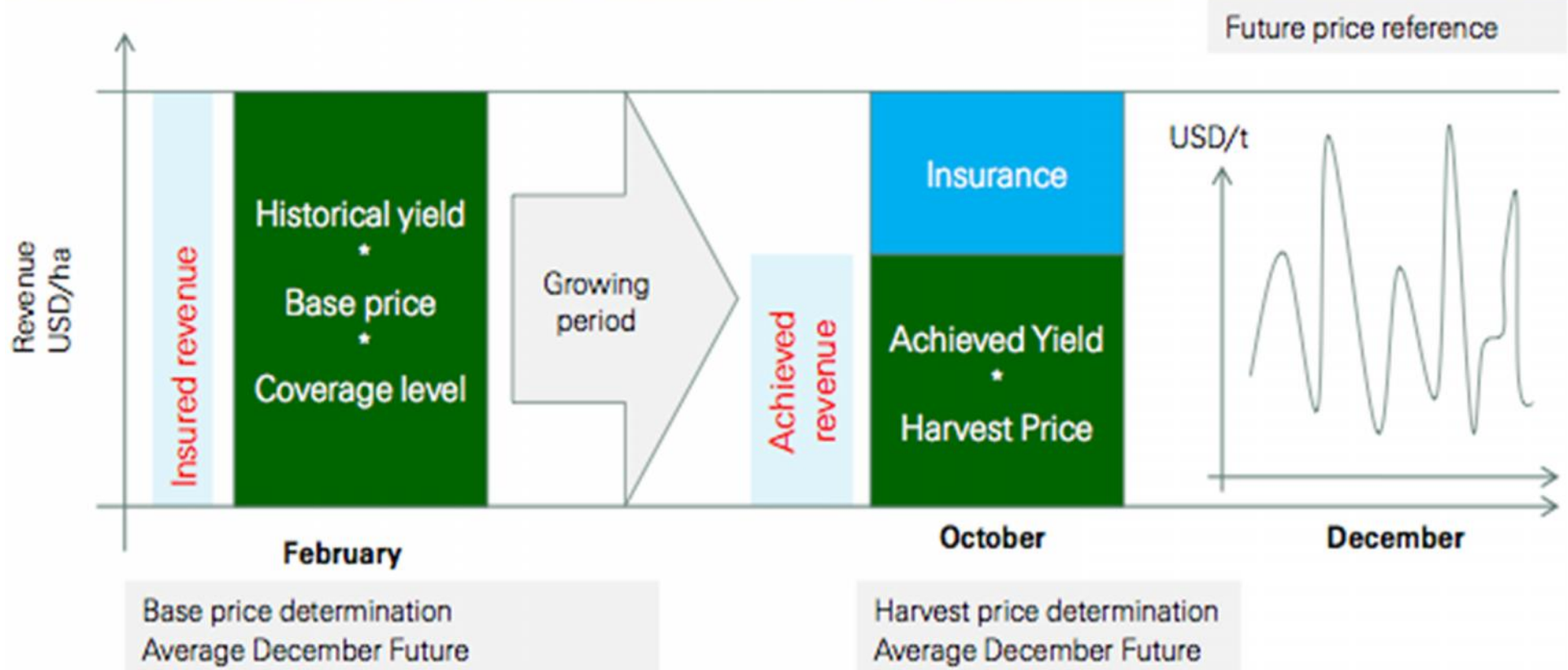
- Indemnity based crop insurance
 - Named peril
 - Multi-peril

| | Hail | Fire | Storm | Flood | Frost | Excessive Rainfall | Landslide | Drought | Price |
|-------------|--|------|-------|-------|-------|--------------------|-----------|---------|-------|
| | Crop Hail | | | | | | | | |
| Multi-peril | Hail + named perils | | | | | | | | |
| | Multi-peril crop insurance / Yield insurance | | | | | | | | |
| | Revenue insurance | | | | | | | | |

Different forms of crop insurance

- Revenue insurance

- Covers yield and/or price drop during growing period
- Requires a representative reference future exchange



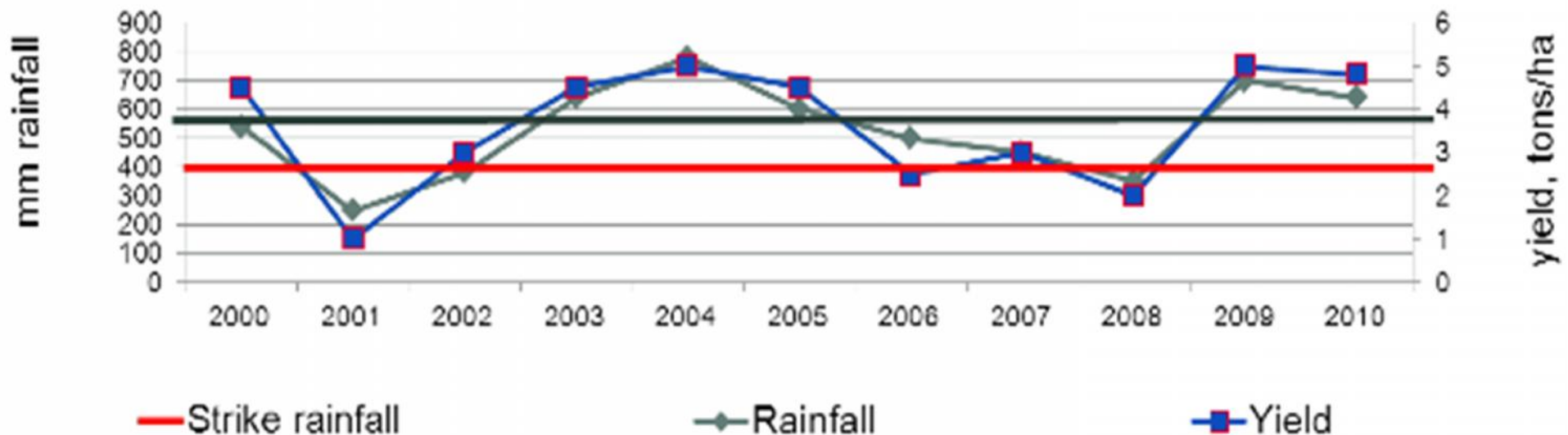
Different forms of crop insurance

- Index insurance

- Use of an index for loss settlement in lieu of on-farm assessment

- area-yield index (average yield per geographical unit)
- weather index (rainfall, temperature, ...)
- remote sensing index (e.g. NDVI for crop)

Drought index insurance



Comparison of different forms of crop insurance

| | Indemnity Insurance | Area-Yield Index Insurance | Weather Index Insurance |
|-------------------------|--|---|--|
| Perils | <p>Named perils: hail, fire, frost (production costs)</p> <p>Multi peril: drought, flood, frost, storm, pests & diseases (future value)</p> | <p>All perils that reduce yield over larger area (eg, districts)</p> | <p>Perils measurable by a weather station (drought, excessive rainfall, frost, wind speed) or extracted from satellite images (drought, flood)</p> |
| Loss Measurement | <p>At farm level; trained loss adjustor assess loss at occurrence and confirms loss at harvest</p> | <p>Farms within a defined area; deviations of current yield from guaranteed yield (eg, average last five seasons) as obtained from government statistics</p> | <p>Farms within an area represented by weather station or grid in case of satellite images; deviations of current accumulated temperature and/or rainfall measurements compared to a pre-agreed normal levels</p> |
| Advantage | <p>Individual farm production history is considered; local perils that affect single farms (e.g., hail, landslide) are insured</p> | <p>Low costs, impacts of systemic perils that affect larger areas (drought, flood, typhoon, pests & diseases) are well assessed, very limited anti-selection</p> | <p>Low costs, impacts of systemic perils (drought, flood, typhoon) that affect larger areas are well assessed, very limited anti-selection</p> |
| Disadvantage | <p>High costs for administration / loss adjustment; operationally difficult to implement for small farmers; often government subsidies (>50-70%) are needed to make insurance affordable; high anti-selection risk (unless compulsory cover)</p> | <p>Basis risk (farmer in a district is affected by local peril but receives no loss payment as long as district yield is above guaranteed)</p> | <p>Local perils (eg, hail, landslide) are not insurable and only perils measurable at weather station are insurable (eg, excludes pest and diseases); basis risk (same as area-yield insurance)</p> |
| Application | <p>Europe, North America, Latin America, China, South Korea</p> | <p>Vietnam, USA</p> | <p>India, Mexico, Canada, some African countries (small programs), Serbia</p> |

Issues for scaling up

- Socio-economic developments
- Agriculture practices
- Infrastructure
- Government policies
- Structure of insurance programs:
 - Type of coverage (compulsory/ voluntary)
 - Players (Government, private, or both)
 - Government support (ex post vs ex ante)
 - Kind of product

Key challenges

- Supportive policy and regulatory frameworks
- Credible high quality data
- Crop insurance awareness
- Alternate distribution channels
- Affordability (cost efficient business models)
- Consumer protection

Policy and Regulation and Supervision

- Can be potent drivers of demand

- creating the necessary preconditions for developing crop insurance and influencing the operating environment of the industry

Also threat

Price regulation

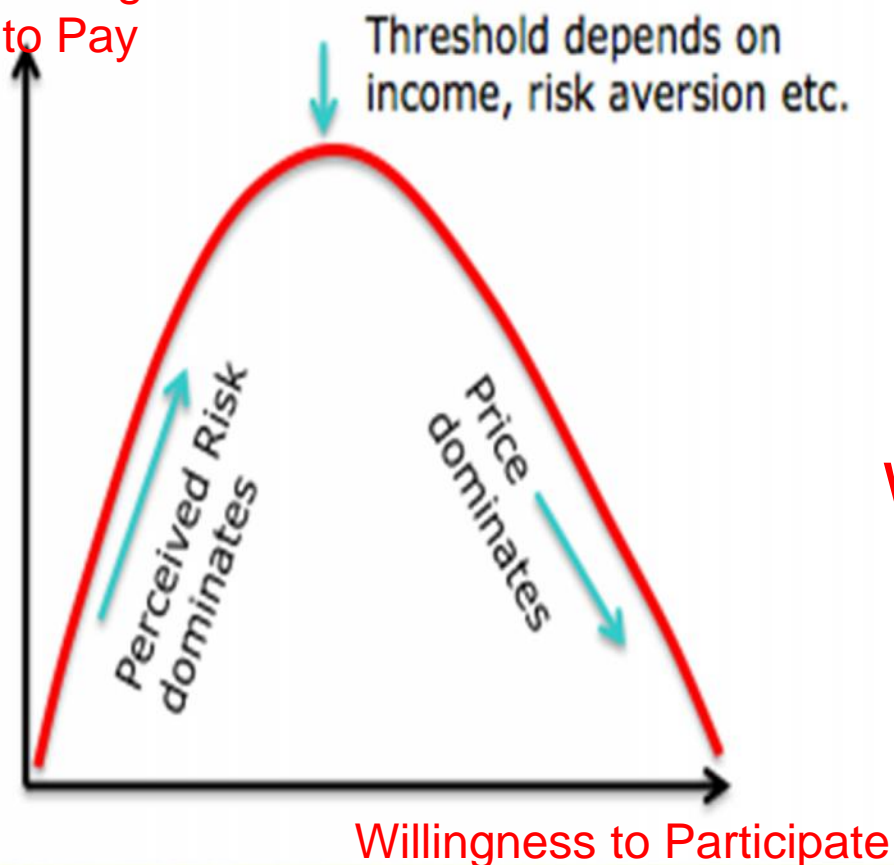
| Policy / regulatory driver | Insurance Penetration |
|---|-----------------------|
| Market Liberalization | + |
| Tax (tariffs) on crop insurance | - |
| Tax incentives for crop insurance | + |
| Premium subsidies | + |
| Price regulation | +/- |
| Compulsory crop insurance | + |
| Introduction of public insurance | +/- |
| Regulation of (re) insurance | +/- |
| Introduction of alternative delivery channels | + |

Regulatory issues with index insurance

- Legal Risk
 - Legal risk can be difficult to mitigate
 - Difference between common law and civil law frameworks
 - Determining Insurable interest
 - Application of indemnity principle
- Regulatory risk
 - Provisioning and reserving
 - Alternate delivery channels

Willingness to pay decision

Willingness to Pay



Only residual risk is transferred

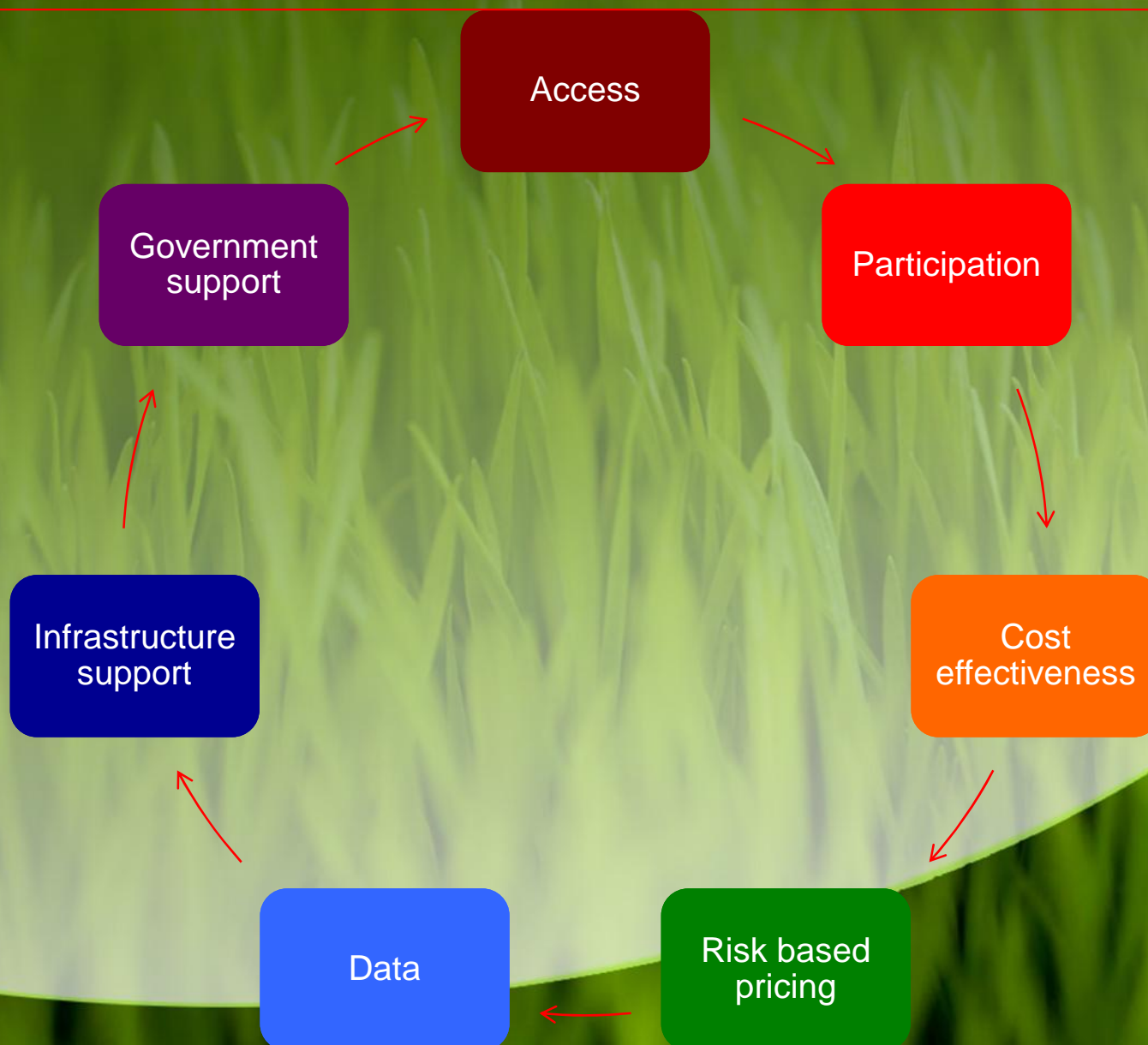
Willingness to participate

- Household wealth
- Risk attitudes
- Product Literacy
- Basis Risk

Willingness to pay

- Other risk coping mechanisms
 - Savings
 - Borrowings
 - Diversification
 - Community based risk pooling
- Trust
- Affordability

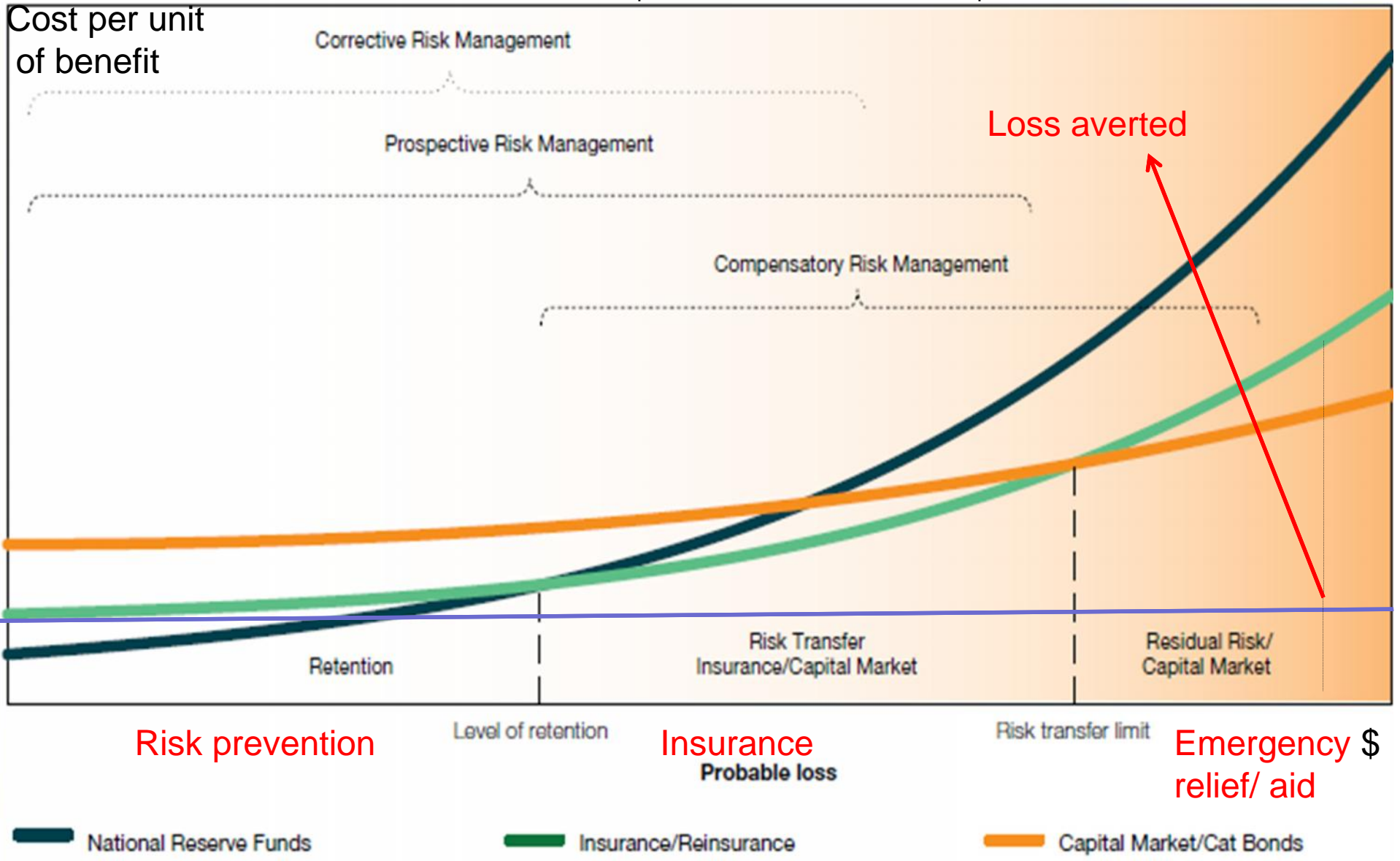
Overcoming the challenges



Evaluating options to prioritize action

Cost of the instrument

Adapted from Global Assessment Report on Disaster Risk Reduction 2011



The way forward

- Alternate crop insurance arrangements
- Public Private Partnership
 - Commercial viability
 - Ensure adaptation measures address vulnerability
 - Nature of engagement is important
 - Elaborate desired adaptation outcomes
- Meso level institutional arrangements
- Technology
- Microinsurance