Addressing On-Farm Risks for Resilient Food and Nutrition Systems
Addressing on-farm risks makes food and nutrition systems more resilient

- Farmers’ ability to mitigate simultaneous risks has compounding effects on food system resilience and economic stability

- Smallholders make critical contributions to global food security and economic and political stability
Farmers face simultaneous risks

- Production, price/market, financial, institutional, and human risk
- Outcomes of risks have compounding effects
- On-farm outcomes cascade beyond the farm and affect global food systems
Risk and vulnerability

Smallholders typically have less capacity to manage risks

- Food-insecure
- Less capital (including human)
- Poor infrastructure
- Land tenure
- Informal markets/institutions
- Little market power
- Poor information
- Poor social safety nets
Global change as a risk multiplier

Climate
- Changing climate/weather patterns
- More variable & volatile weather events/shocks
- New pests and diseases
- Water quality and quantity

Economic volatility
- Conflict
- Globalisation and trade

Urbanisation
- Labour shifts
- Off-farm income
- Gender
- Food demand changes
Individual circumstances matter

Determined by
- Resource endowment
- National economy
- Political economy
- History and culture

Compounded by
- Gender
- Ethnicity
- Education...

Options for smallholders
- Stepping up
- Hanging in
- Stepping out
- Stepping in
How can research and capacity building contribute?

Management tools to **mitigate** risk and build **resilience** for the family farm

Options to **adapt** the family farm business to changing circumstances
Reducing production variability (yield and quality)

- **Small holder irrigation schemes** – Maize in southern Africa
- **Pests and diseases** – Wheat blast in Bangladesh, Coffee Berry Borer in PNG
- **Farming systems** – Conservation agriculture in the Eastern Gangetic Plains
- **Sustainable intensification** – Africa and the Pacific
Diversifying options

Products | Resources | Technologies | Markets | Policies | Business Models
Addressing constraints to building resilience

• **Information**  
  IndoDairy milk quality

• **Expertise**  
  Plant Doctors

• **Capital**  
  Mobile financing in Cambodia

• **Labour**  
  Mechanisation

• **Natural capital**  
  Restoring coral reefs, fishways on the Mekong
System change and global shocks – from risk to uncertainty

Can a smallholder farmer in the Mekong Delta risk-manage their way out of being under water?

The problem:
- Most of 40,000 km² Mekong Delta less than 2m above sea level
- Globally significant exporter of rice, shrimp and fruit
- Home to 18 million people
- 40% of Mekong Delta may be under 1m of sea water in a matter of decades
Beyond business as usual?

Big challenges for agriculture: climate, water, food, nutrition, energy, gender, resource competition, biosecurity, One Health, social license

**Innovation system** requires integration of research, technology development, private sector value chains, extension, education and governance

**What** do we invest in?
**Where** do we invest?
**Who** do we work with?
**How** do we partner differently?