The assessment of the socio-economic impacts of climate change at household level

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Overview of challenges and macro impacts

- Global and local trends (demographic pressures, etc.)
- Natural resources pressures
- Climate change (gradual onset and weather shocks)

- Loss of GDP in tropical vs. possible gains in temperate regions
- Relatively marginal increases in poverty and food insecurity
The socio-economic impact of climate changes

Source: Skoufias and Vinha (2012)
Household groups vulnerable to food insecurity as a result of risks

Vulnerability of different groups to types of instability

- Food price rises
- Loss of income
- Food production risks
- Loss of access to natural resources

- Self-sufficient households without access to markets
- Food producing households that are net sellers of food
- Food producing households that are net buyers of food
- Rural landless and non-farm rural households
- Poor urban households

Source: McMahon, Lipper and Karfakis, (2011)
Vulnerability to food insecurity resulting from risks and shocks

Vulnerability as a function of household characteristics, exposure to risks and shocks

- Household survey data
- Weather data at community-district-regional level
- Model: direct impact of climate shocks to farm productivity and then to food insecurity

- Outputs:
  - Channels of transmission of shocks to food insecurity are identified
  - Profile vulnerable population groups (e.g. chronically vs. temporarily food insecure)
  - Explore the relative efficiency of different policy tools in reducing vulnerability

- Countries: Nicaragua, AMICAF: Philippines and another APEC country, Tanzania (poverty), Malawi (gender)
Resilience analysis

Source: Alinovi et al (2009)
Empirical evidence

• **2 major research strands:**
  – Impacts on farmland revenues
  – Welfare impacts (poverty, consumption, health)

• **Evidence** (Brazil, India, Philippines, Mexico, Nicaragua, Indonesia and elsewhere):
  – Heterogeneity (by location, assets, land, gender and other)
  – Poorer expected to suffer more (weak gender bias)
  – Adaptation strategies assist in smoothing some of the impact
Adaptation and vulnerability to food insecurity in Nicaragua

Source: Karfakis et al (2011)
Policy Implications

agricultural innovation systems & (climate) smart agriculture

– Identifying vulnerable populations is not a straightforward task
– Major attention should be paid to net buyers of food
– Adaptation practises remain the principal policy priority
– Policy measures beyond the agricultural sector are also important
– Safety nets for vulnerable groups remain key policy priority
– Exit from the agricultural sector should be a crucial policy concern
Policy Implications

agricultural innovation systems & (climate) smart agriculture

– Technical innovations (research and development) in agriculture are required
– Lifting organizational constraints in agricultural markets can increase food efficiency savings
AMICAF: Overview

Project Title: “Assessments of Climate Change Impacts and Mapping of Vulnerability to Food Insecurity under Climate Change to Strengthen Household Food Security with Livelihoods’ Adaptation Approaches”

– Funded by Japan (MAFF), four step approach, 3 years, 2 countries, 2.5 million USD

• Step 1: Climate Change Impacts Assessment (national, sub-national levels)
• Step 2: Food Insecurity Vulnerability Analysis and mapping (household level)
• Step 3: Livelihood Adaptation to Climate Change (community)
• Step 4: Awareness Raising and Institutional Mechanism (national)

✓ Analytical approaches to inform adaptation actions in the field, and to support policies
✓ Capacity building
✓ Country and global Products
AMICAF: Food Insecurity Vulnerability Analysis and mapping (Step 2)

Step 2 will be built upon past work on analysis and mapping of food insecurity by incorporating climate change-related factors.
Project Title: “Climate Smart Agriculture: Capturing the Synergies among Mitigation, Adaptation and Food Security”

- EC funded 3-year project implemented in Malawi, Vietnam and Zambia

• **Outcome:** Agricultural policies aligned with climate change policies that enhance food security and adaptation (possible mitigation benefits).

• Strengthen country capacity for:
  1. early action on Climate-Smart Agriculture (CSA)
  2. evidence-based input into UNFCCC processes
  3. country-specific synergies-tradeoffs between pillars of CSA

• **Expected outputs:**
  1. Evidence base for identifying, developing and implementing practices, policies and investments for CSA.
  2. A strategic framework to guide action and investment on CSA.
  3. CSA investment proposals and possible financing sources, incl. climate finance.
Thank you