Assessing Disaster Risk Reduction and Climate Change Adaptation Synergies of Risk Insurance:

Impact Pathway Framework for Assessing Risk Insurance (IPFARI)

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Introduction

Identifying indicators to quantify the effectiveness of insurance within agriculture in the Asia Pacific region is important for the following reasons:

- Crop insurance has been seen as an effective tool for disaster risk reduction and climate change adaptation (CCA). In light of this, various risk insurance projects within agriculture have been implemented in the Asia and Pacific.
- However the costs and benefits with regard to long term impacts of these interventions are rarely understood.
- Studies on effectiveness are very few and are usually qualitative. There is no common framework available to asses costs and benefits of risk insurance.
- Identifying costs and benefits can help identify insurance product shortcomings which can help in designing effective insurance products for benefiting the most vulnerable.

Objectives

The objectives of the study are:

- To better understand the mechanisms by which financial services work to reduce the vulnerability to disasters.
- To identify a comprehensive set of indicators for quantification of costs and benefits of risk insurance products in agriculture

Following research questions were considered for addressing the above objectives:

- Does the insurance product provide sufficient cushioning to the shock of disasters in the community?
- Can the insurance product assist in the long term adaptation of farmers to climate change?
- How can insurance contribute to the overall goal of sustainable development?

Methodology

- Conceptual framework for the study was developed based on review of existing studies that have discussed synergies between climate change adaptation (CCA), disaster risk reduction (DRR) and development (Figure 1 and Table 1)
- An inductive research methodology was employed in order to identify cost and benefit indicators within agriculture.
- Existing methodologies on evaluating effectiveness of agriculture insurance where reviewed to identify research gaps.

Figure 1 shows the conceptual framework of synergies and differences between DRR, CCA and development. CCA and DRR both deal with climate risk management, CCA focuses on long term strategies, while DRR often focuses on immediate support.

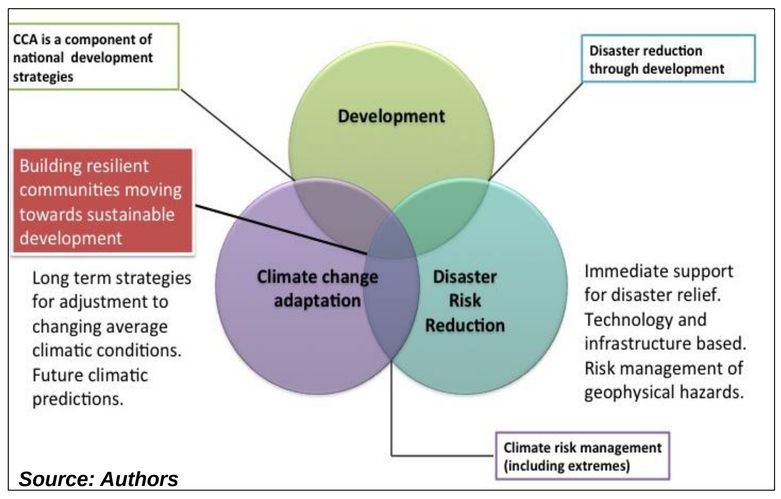

Figure 1: Synergies and differences between Climate Change Adaptation, Disaster Risk Reduction and development

Table 1: Conceptual linkages between CCA and DRR

Author	Context	DRR Elements	CCA Elements
Davies et al., 2011	Combining DRR with social protection for CCA in agriculture	• Immediate disaster compensation • Vulnerability assessment and mapping • Financial social units were used as instruments for resilient economies and livelihoods	• Diversifying livelihoods towards more climate resilient options. • Increasing the economic resilience by introducing micro-insurance and other social protection schemes • Combining DRR and social protection in order to expand time horizons increasing the relevance to long term CCA
Binh, 2010	DRR and CCA to combat salinity intrusion in agriculture	• Infrastructure (e.g. embankments) was built to reduce hazard exposure	• Adaptation projects such as livelihood diversification • Community based approaches such as migration and changes in crop calendar
Holder, 2011	Hurricane preparedness, mitigation and response in agriculture	• Immediate support and relief to farmers (e.g. monetary relief, providing health and housing services) • Provide water and enhance drainage	• Financial risk management tools • Natural resource management with emphasis on soil management • Livelihood diversification
Gero et al., 2010	Reducing disaster vulnerability through poverty reduction	• Immediate relief • Build infrastructure	• Bottom up approaches for resilience building • Climate change elements incorporated into disaster management plans

Results

Using induction based research methodology, the impact pathways of insurance interventions where mapped for three stakeholders: Farmers, governments and insurance agencies (Figures 2 and 3). The insurance impacts where mapped to CCA, DRR and overall development outcomes.

In Figure 2, the benefits of insurance are mapped. Income stabilization and poverty reduction are seen as some of the primary impacts of insurance on farmers which will lead to DRR, CCA and development outcomes. There are clear benefits for communities and governments while the benefits for insurance companies are more nuanced.

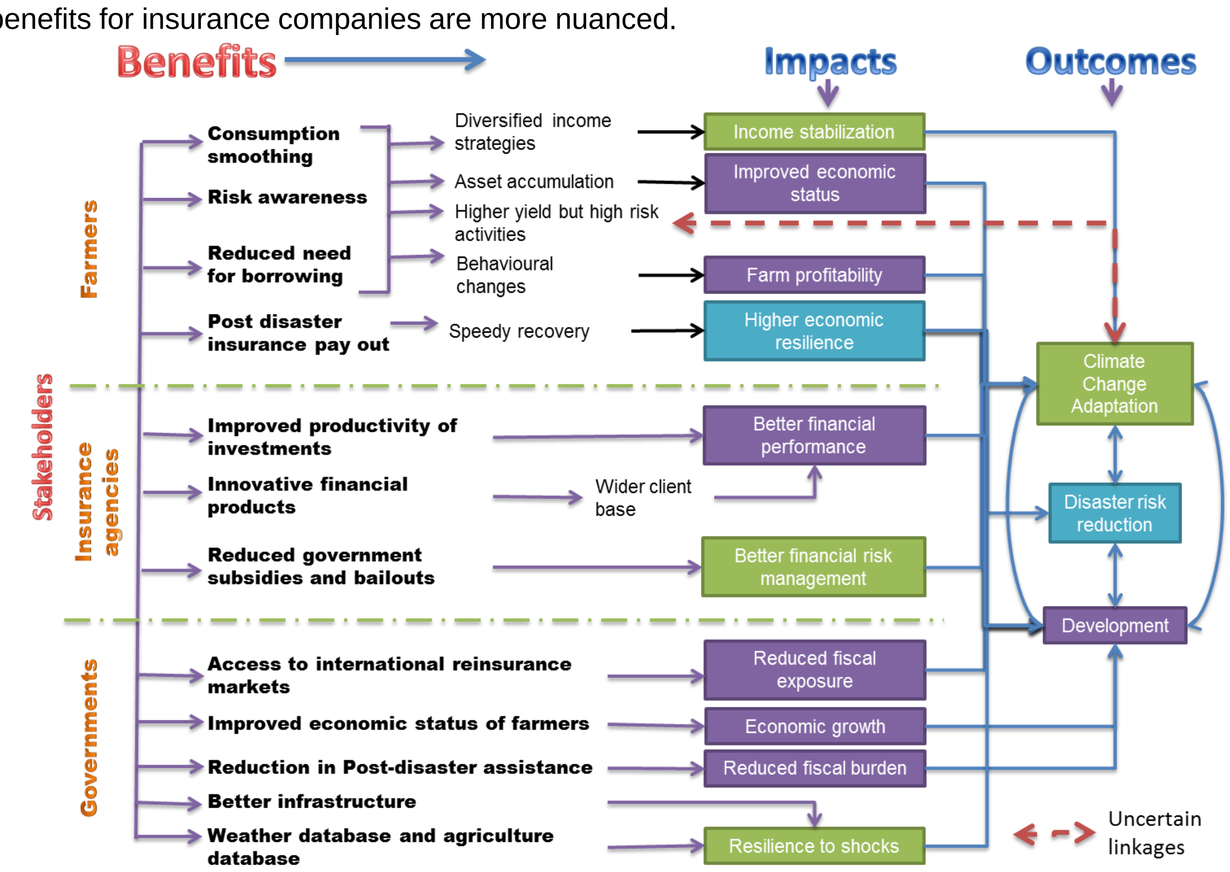

Figure 2: IPFARI Framework: Benefits of agriculture insurance to various stakeholders ***Source: Authors***

Figure 3 maps the costs of insurance and their CCA and DRR outcomes. For farmers, the main costs are opportunity costs and moral hazard which could negatively impact CCA and DRR. Financial feasibility of insurance products have always come into question, the negative externalities are usually borne by governments in terms of subsidies and to a certain extent by the insurance companies.

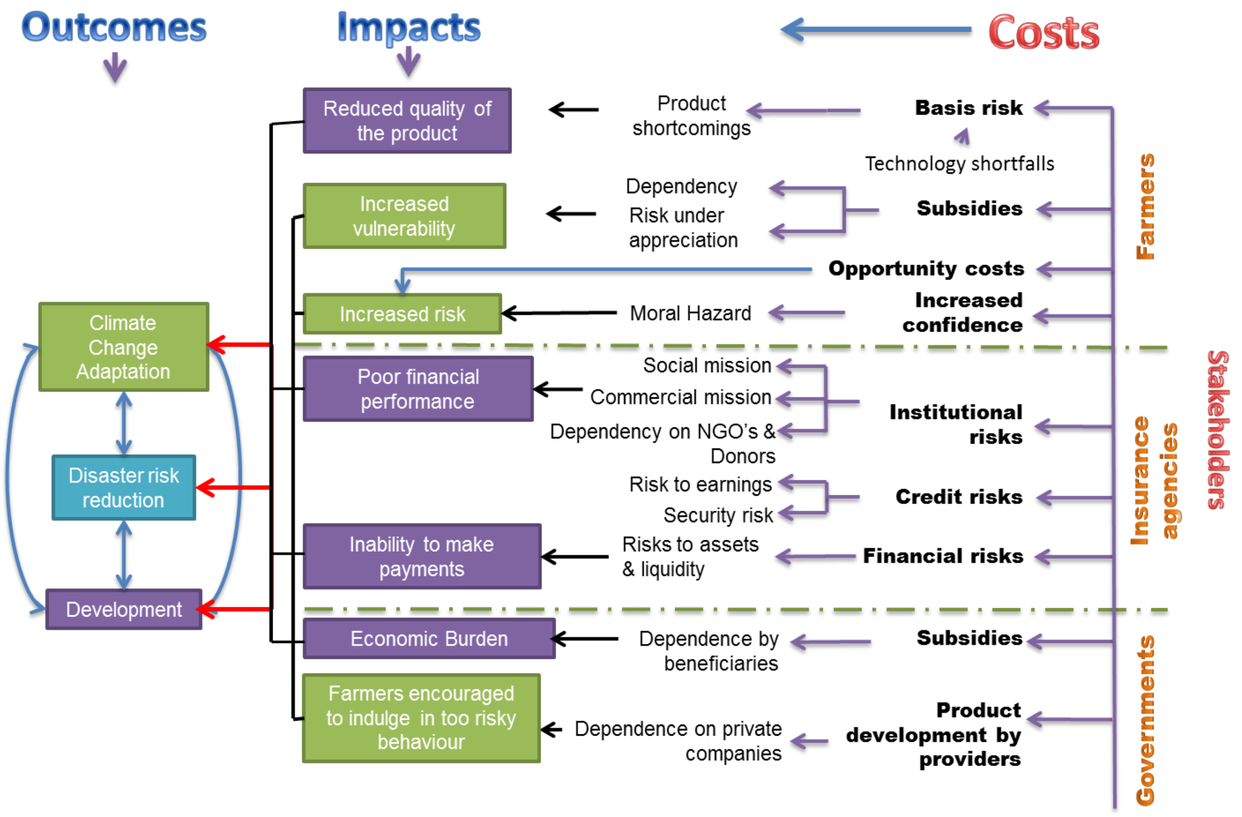

Figure 3: IPFARI framework: Costs of agriculture insurance ***Source: Authors***

Conclusions

- There exists no comprehensive methodology for assessment of costs and benefits of risk insurance within agriculture. It is essential to quantify the costs and benefits in order to prioritize and scaling up of appropriate risk insurance products for the most vulnerable.
- Effectiveness of risk insurance be assessed by taking into consideration the DRR and CCA indicators without limiting to the traditional insurance metrics such as scale and spread..
- Further work is required to strengthen IPFARI framework by
  - identifying exact indicators and weightages for different indicators; perception based indicators could be included in order to appreciate some of the unaccounted effects of insurance, and
  - incorporate vulnerability assessment elements such as exposure, sensitivity and capacity.

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