

## Mind the Gender Gap in Farmers' Preferences for Weather-Index Insurance

Sonia Akter, Timothy J. Krupnik, Frederick Rossi and Fahmida Khanam

September, 2015

### Background

Weather-related risks are major sources of farm income fluctuations for rural households in low-income countries. To buffer against such risks and to encourage investment in intensified and high-value production, weather-index insurance (WII) is increasingly suggested for smallholder farmers in Bangladesh. In a WII scheme, payouts occur when a specified weather parameter is surpassed, for example if seasonal rainfall falls below a specified threshold indicative of drought status. The chosen threshold must be objective, reliably measured and strongly positively correlated with the insured's losses.

With relatively less access to resources and assets to cope with disruptive storm events, women in Bangladesh tend to be among the poorest and the most vulnerable to weather shocks. Relative to their male counterparts, women experience gender gaps with less access to finance, inputs, education and associated agricultural extension services, indicating a lack of access to services and information that could help buffer against the negative impacts of weather-related production shocks. Eliminating gender gaps in agriculture by ensuring women farmers' adequate and equal access to agricultural finance, while also reducing investment risks, is thus paramount to achieving Bangladesh's development goals to eliminate extreme poverty and hunger and to promote gender equality through women's empowerment.

### Objective

The objective of this study was to explore the ways in which gender influences the uptake of inclusive WII schemes to de-risk crop production and encourage cropping intensification in the coastal south of Bangladesh, where many donors are now focusing their investments.



*The Cereal Systems Initiative for South Asia (CSISA) is a research-for-development partnership implemented jointly by five CGIAR institutions – the International Maize and Wheat Improvement Center (CIMMYT), International Food Policy Research Institute (IFPRI), International Livestock Research Institute (ILRI), International Rice Research Institute (IRRI) and World Fish – in close partnership with public and private sector organizations across South Asia.*

## Methodology

An attribute-based choice experiment survey was conducted between 10-28 June 2014 with 303 men and 130 women maize farmers from three sub-districts of Bhola Island, including Bhola Sadar, Burhanuddin and Daulatkhan (Figure 1). The experiment constructed a hypothetical market by presenting respondents with a series of choice sets comprised of paired alternative plans or profiles (Figure 2), such as Plan A, Plan B, etc. Each profile consisted of the same attributes, typically 3-5 in number, which defined and described the topic of interest, for instance a WII plan. Each attribute was defined by two or more levels and could be represented by either

a qualitative or a quantitative variable. All listed maize farmers, men and women, in the three sub-districts of the study area were considered as the sample frame. To complement the quantitative data, a semi-qualitative study was also conducted in October 2014 with 72 men and 49 women farmers randomly selected from the initial sample of 433 respondents.

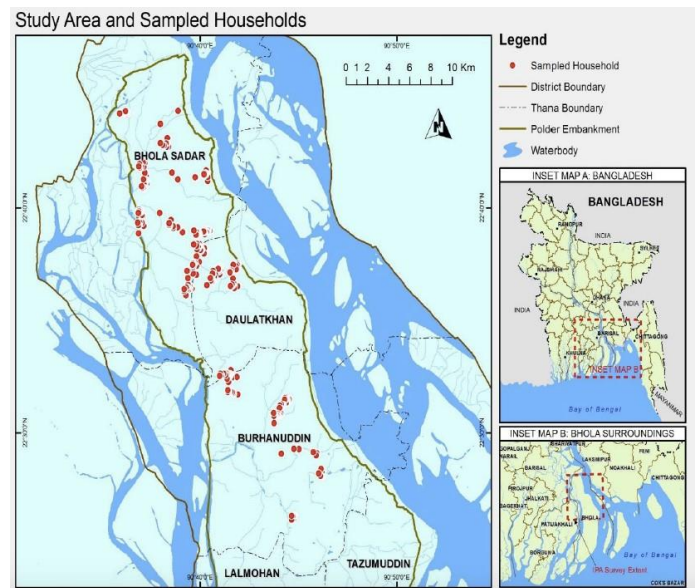


Figure 1: Map highlighting study area and sampled households.

## Farmer Characteristics

Households where women were listed as farmers were more likely to belong to minority religious communities and on average they owned significantly smaller parcels of land and non-land assets than male farmers. Households with women farmers were relatively new to maize cultivation. Although their costs of production were not significantly different, they earned significantly lower revenues – and thus profit – than farms where women were not listed as farmers. The significant difference in revenue reflects a lack of market access for the households that were represented by a woman. Women farmers' households had significantly higher access to institutional credit than the male farmers' households. However, no significant difference was observed between the male and female represented households with respect to prior insurance ownership or formal savings accounts. Compared to men, a significantly smaller proportion of women had higher education and a significantly larger proportion of women farmers were unfamiliar with the concept of insurance. The sampled women were, on average, significantly more risk averse and had a significantly lower discount rate than the sampled men.

## Findings

The study found evidence of a substantial gender gap in WII demand. Female respondents were significantly more likely to be insurance averse than the male respondents. To understand the drivers of such a gap, the study tested men and women farmers' insurance choice with respect to personality

traits such as risk and time preferences, level of financial literacy and the level of trust in insurance institutions. Although women were significantly more risk averse and had a lower discount rate, these factors could not fully explain the gender gap. The findings do, however, indicate a significant difference across genders with respect to institutional trust, for example trust in banks, NGOs, or other organizations that lend money or provide micro-credit, which helps explain the gender difference in WII choice. Women who were the victims of financial fraud in the past were more likely to be skeptical about the credibility of the proposed insurance scheme in delivering payouts in the event of an extreme weather event that could damage their crops than men who had a similar experience. These women further affirmed their lack of trust in local financial institutions by stating a strong preference for government banks as their preferred insurance provider.

Both men and women found WII to be conceptually complex. As in many developing country contexts, especially those in risk-prone coastal environments, the study location in Bangladesh is an area where even conventional insurance packages are rare, with more than half of the respondents reporting no experience with any type of insurance whatsoever. While women were significantly less familiar with insurance, which is indicative of a low level of financial literacy, men were also relatively unfamiliar with insurance – although most of them understood the mechanism after enumerators had adequately briefed them. Women on the other hand, struggled to comprehend both the trigger levels and compensation mechanisms in particular. Most women (75%) implied that since they are not very active outside the household and because they lacked higher education, they customarily rely on male household members to make most financial decisions. A lack of self-confidence with respect to financial matters was clearly self-evident when interviewing women throughout the study. Although in some cases male family members were present during the initial interviews and thus occasionally helped women understand WII, most women farmers still found the concept to be abstract and complex and hence avoided making decisions in favor of WII investment.

### Trigger level for flood and water logging insurance



You will be eligible to claim compensation when your maize field remains inundated up to 15 cm (ankle height) for 3 or more days after plantation.

Question 1			
Insurance type	Deposit (per bigha)	If hazard strikes	If no hazard
Option A: Wind	₹ 300	₹ 2000	₹ 0
Option B: Flood	₹ 1500	₹ 3000	₹ 1200
None			

Figure 2: Graphical information used to explain choice experiment questions to farmer-participants (top) and English translated examples of a choice experiment trigger level for index insurance (bottom).

## Policy Implications

The findings highlight the importance of investment in institutional credibility as a precondition to attract women farmers to sign up for WII, particularly in an investment environment characterized by poor governance and weak institutional accountability. In addition, the findings indicate the importance of continued investments to boost women's agency and financial literacy, as a necessary precondition to enable WII schemes to work. Lastly, it is imperative that a WII scheme must be as realistic and simple as possible for the intended clients, particularly women, to understand the insurance product. Without these three key interventions, the study indicates that farmers' interest in WII, particularly among women, is likely to remain low in Southern Bangladesh.

---

## Author Details

**Sonia Akter** led the Gender Research Team at the International Rice Research Institute (IRRI) when she conducted this research. She is currently Assistant Professor at the Lee Kuan Yew (LKY) School of Public Policy of the National University of Singapore. [sonia.akter@nus.edu.sg](mailto:sonia.akter@nus.edu.sg)

**Timothy J. Krupnik** is a Systems Agronomist with the International Maize and Wheat Improvement Center (CIMMYT) based in Bangladesh.

**Frederick Rossi** is an Agricultural Economist with CIMMYT based in Bangladesh.

**Fahmida Khanam** was a Research Associate with IRRI when she conducted this research. She is currently a freelance consultant based in Bangladesh.