

# Technology and smallholders

## Helping farmers to future-proof crops with satellite data and high-tech seeds

This project implements bundled solutions by integrating seed systems with insurance, climate information, package of practices for agronomy, and water management to reach 100,000 farmers and sensitize over 300,000 farmers through these interventions.



Over 750 million people in South Asia are vulnerable to natural disasters. Climate change - induced factors such as erratic rainfall and severe floods, extended droughts, tropical cyclones or saline water intrusion, are making the situation worse.

Smallholder farmers are amongst the most vulnerable to climate shocks. Lack of education and technical skills, poverty, risks inherent to agricultural investments, limited assets and financial capital are major reasons for low investments in enhancing adaptive capacity. Now, technology could be the key to improving smallholder resilience to disasters and their opportunities for recovery.

## How can smallholders manage agricultural risks?

Seeds, index-insurance and climate information - these are some of the new technologies being developed to help smallholders adapt to climate change. Seed varieties that better withstand climate risks such as droughts and floods, is one such technology. Another is the use of financial instruments such as index insurance, enabling speedy compensatory payouts when extreme weather occurs and agricultural production collapses.

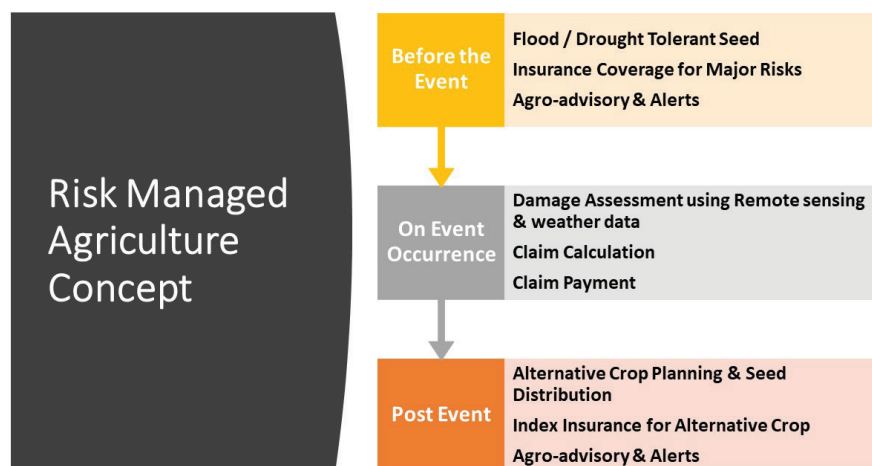
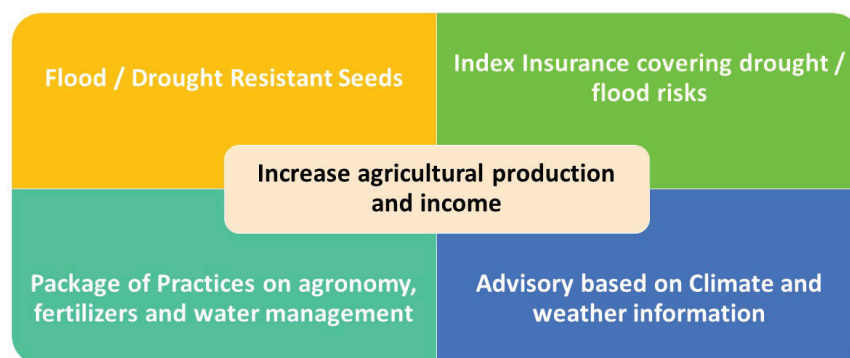
However, these technologies cannot work in isolation. While stress-tolerant seeds could protect farmers from moderate weather risks, they provide no insurance from extreme weather events. A risk-averse farmer may therefore, underinvest in such seeds unless extreme weather events are covered by crop insurance to cope with the financial losses from such events. This is where climate information services come in. With access to accurate information, farmers can make informed and timely decisions about investing in the most appropriate seeds.

### 5 facts about floods and drought

- About 90% of all natural disasters are water-related. Over the period of 20 years, floods and drought accounted for 53% of all documented natural disasters, affecting 2.4 billion people, killing 168,000 and causing US\$662 billion in damage. (EM-DAT, 2019).
- Since 1900, more than 11 million people have died as a consequence of drought and more than 2 billion have been affected by drought, more than any other physical hazard (FAO)
- By 2050, rising populations in flood-prone lands, climate change, deforestation, loss of wetlands and rising sea levels are expected to increase the number of people vulnerable to flood disaster to 2 billion.(UNESCO, 2012)
- 700 million people worldwide could be displaced by intense water scarcity by 2030. (Global Water Institute, 2013)
- South Asia is the region most vulnerable to water-related disasters, accounting for more than 45% of fatalities and more than 90% of the people affected by disasters (IWMI, 2017)

- Project:** Bundled solutions with seed systems, index insurance and climate information to manage agricultural risks (BICSA)
- Duration:** 2019-2021
- Location:** India and Bangladesh
- Goal:** To contribute to climate-risk adaptability and post-disaster recovery among smallholders.
- Objective:** To adapt and scale agricultural risk management strategies for vulnerable smallholder farmers through bundled solutions of seed systems, index insurance and climate information.
- Research:** Add-on remote sensing data and flood/plant growth modeling for insurance schemes with high-tech seeds for post-flood agriculture productivity.

## How the project works



## Three-Pronged Risk Management



IMPROVED SEED TO ADDRESS SPECIFIC RISKS



INDEX INSURANCE TO COVER CATASTROPHIC RISKS



WEATHER & CROP ALERTS TO MANAGE OTHER PREVENTABLE RISKS

## Stakeholders roles for scaling bundling agricultural risks management

Partners	Insurance industry	Seed Company	Weather advisory	Govt. Agri Research & Extension
Contribution	<ul style="list-style-type: none"> <li>Insurance product</li> <li>Pilot and business models</li> <li>Coordination with govt.</li> </ul>	<ul style="list-style-type: none"> <li>Seed production, marketing &amp; delivery</li> <li>Coordination with research institutes &amp; Insurance Co.</li> </ul>	<ul style="list-style-type: none"> <li>Agrometeorological advisory for individual farmers</li> <li>Support in index insurance product and damage assessment</li> </ul>	<ul style="list-style-type: none"> <li>Strengthening farmers income and managing risks</li> <li>Technology focus</li> <li>Village outreach</li> <li>Scaling up and institutional coordination</li> </ul>
Benefit	<ul style="list-style-type: none"> <li>Expansion of ag. Sector</li> <li>Build index insurance capacity</li> <li>Build business relationship</li> </ul>	<ul style="list-style-type: none"> <li>Increased product interest by farmers</li> <li>Expansion of new areas</li> <li>Build business relationship</li> <li>Increase sales</li> </ul>	<ul style="list-style-type: none"> <li>Increased product interest by farmers</li> <li>Build business relationship across value chain partners</li> <li>Client increase</li> </ul>	<ul style="list-style-type: none"> <li>Farmers more protected from climate risks</li> </ul>
Impact	<ul style="list-style-type: none"> <li>Wider acceptance by farmers</li> </ul>	<ul style="list-style-type: none"> <li>Strengthen agricultural producers against loss of crops from climate shocks</li> </ul>	<ul style="list-style-type: none"> <li>Strengthen climate safety program against extreme events</li> </ul>	<ul style="list-style-type: none"> <li>Building climate resilience in ag. sector</li> </ul>



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## Key outputs

- Public-Private Partnership (PPP) based Business Models and marketing strategies are consolidated to adapt Bundling Insurance with Climate and Seeds Systems for Agriculture Resilience (BICSA) in the field
- BICSA is implemented to reduce agricultural risks to farmers in the chronic/severe flood and drought-affected areas
- Capacity across value-chain partners enhanced and knowledge products & tools disseminated to enhance community awareness, interest, and demand
- Process of implementation monitored and impacts evaluated for wider upscaling and out scaling with national/regional level development programs, development partners and donor agencies

A robust marketing plan with public-private partnership-based business models will be developed through the project to reach the targeted beneficiaries, of which 50% are women, youth and disadvantaged groups of farmers.

## Project partners



For more details, contact:

**Giriraj Amarnath**, Research Group Leader –  
Water Risks and Disasters (a.giriraj@cgiar.org)

**International Water Management Institute (IWMI)**  
127 Sunil Mawatha, Pelawatte, Battaramulla, Sri Lanka

Mailing address:

P. O. Box 2075, Colombo, Sri Lanka

Tele: +94-11-2880000, 2784080 Fax: +94-11-2786854 Email: iwmi@cgiar.org

Website: www.iwmi.org



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