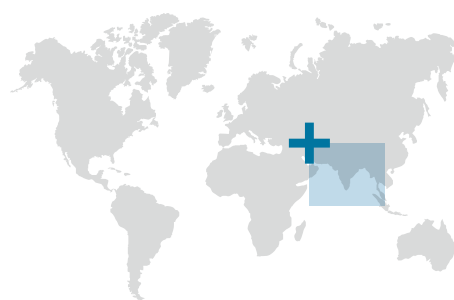


IN FOCUS:

INNOVATION & TECHNOLOGY



SUBJECT

The high transaction costs of serving low-income clients in developing and emerging market economies demand innovative approaches and technological advancements. Challenges that inflate operational costs include data collection, processing and management, premium payment mechanisms as well as claims verification and settlement. Index insurance products, mobile payment devices or more accurate weather and agricultural-yield information based on satellite data are examples of innovative approaches that can help to overcome these challenges.

CHALLENGES IN INDIA

India has a longstanding history of agricultural insurance. Since the introduction of the Comprehensive Crop Insurance Scheme (CCIS) in 1985 different approaches have been applied over the years: The National Agricultural Insurance Scheme (NAIS) in 1999 (discontinued in 2013), weather-based crop insurance scheme (WBCIS) since 2007, and the Modified NAIS (mNAIS) since 2010. These insurance schemes were successful in reaching out to millions of farmers and, in 2014, already covered 22 percent of the gross agricultural farmlands in the country. This is largely due to the compulsory nature of these schemes for farmers that access agricultural loans.

On behalf of

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH



Federal Ministry
for Economic Cooperation
and Development

However, the success of these schemes remained limited among farmers who did not take out loans. Key factors contributing to this were:

- Insurance schemes were largely supply-driven. As the products were compulsory for agricultural loan beneficiaries, farmers perceived them as safety nets for banks against crop loan defaults. The product design was mainly decided by the insurance underwriter and the public sector that subsidized the premiums. The farmers had little say in the design and delivery of these products.
- The insurance schemes comprised a broad-based (one-size-fits-all) design of products and operational processes without considering the diversity in the regions and their phenology. As the insurance schemes were originally designed for grain crops, such as cereals, product and process features were often found unsuitable for other crops, such as fruits and vegetables.
- Products did not consider idiosyncratic factors – such as farm attributes, management practices, and risk mitigation actions – that are equally important in determining the crop loss potential.



- Both weather and area-yield index products showed significant levels of basis risk. The insurance sector focused mainly on technology to tackle these issues, for example by increasing the number of weather stations, or the sample size for Crop Cutting Experiments (CCEs). But as the focus was mainly on technology, little innovation was undertaken in other areas of product and process design, e.g. concerning trigger structures.

SOLUTIONS

Combining the benefits of indemnity and index insurance

The Rural Insurance Services programme (RISP) applied its demand-oriented approach to high-value crops such as mango, pomegranate, and grapes. In Karnataka, the GIZ Risk Reduction through RISP in partnership with the Agriculture Insurance Company of India Limited (AIC) as well as Karnataka State Department of Agriculture (KSDA) and Horticulture (KSDH) designed products that centred on farmers' needs:

Strong involvement of farmers in product design. The product development exercise engaged farmers at all stages of the design process. The starting point was a peril classification exercise based on ('5C') criteria such as controllability, conduciveness, conclusiveness, computability, and covariance. Based on the inputs provided by farmers and technical inputs by crop experts, basic product features and parameters were designed. The project conducted real-time product structuring exercises with farmer groups in the hoblis (village clusters) in the pilot area. The exercise demonstrated different scenarios that enable farmers to appreciate the trade-offs intrinsic to the design of crop insurance products, for example relating to parameters such as frequency of payouts, average size of payouts, basis risk, coverage of perils, premium levels, etc.

Reducing basis risk through hybrid insurance products.

Through this farmer-centric process, an innovative product concept ('weather index plus') was developed, which combined the benefits of both indemnity and index insurance solutions: small losses are compensated based on a pre-determined payout schedule tied to a weather index. All losses in excess of the index exit point are calculated based on a loss assessment. This index/indemnity approach applies only to certain weather risks, e.g. droughts, which can be modelled through an index. Other localized risks, e.g. hail, are covered purely on an indemnity basis.

Transparent and efficient loss assessment. For the indemnity element of the product, the project established a loss assessment process based on the collection of videos and photographs recorded during farm visits. To ensure objectivity and transparency, the process of loss (damage) recording and loss estimation has been separated. As part of this approach, loss estimation is done by a group of highly trained crop experts supported by a high-level stakeholder committee with decision-making abilities in case of disputes. Crop experts visited farms themselves but also relied on the documentation collected by field staff appointed by trained service providers.

Monitoring throughout the growing season. In order to gather as much feedback as possible from their customers, the project also conducted periodic farm monitoring, carried out after-sales support through a call centre facility, and organized meetings with farmers, for example through the provision of multimedia-based crop insurance trainings.



LESSONS LEARNED

Interacting with the farmers is key during the product development. But depending on the stage of the process, the size and the constitution of farmer groups can vary: a risk prioritization exercise can be carried out with groups of up to 30 farmers that have low levels of understanding on crop production aspects (e.g. agrometeorology), while real-time product structuring exercises require smaller groups (5–15 farmers) with a fair level of technical understanding of parameters critical for crop production.

Participation of farmers in designing crop insurance products improves the trust levels of the products on offer and enables a better understanding of the factors that influence farmers' decision making across different segments (based on landholding, type of farming practice, social standing, education etc.). For example, large farmers with sophisticated farm management practices and better access to protection inputs and techniques were not keen on the inclusion of pests and diseases among perils to be insured, whereas smaller or low-skilled farmers vehemently demanded the inclusion of pests and diseases.

Through a hybrid product, the advantages of both indemnity and index insurance solutions can be offered. The indemnity element allows for the inclusion of localized high severity perils such as hailstorms, as well as pest infestations and major diseases.

In terms of pay-out performance, the weather index plus crop product performs better for both farmers and insurers: while the average pay-out per grape and mango farmer was substantially higher compared to those under mainstream WBCIS, the loss ratios of the insurer were lower compared to weather index products. This demonstrates the existence of spatial basis risk inherent in the current WBCIS product design. Members of the farmer groups involved in product development can be effectively deployed as spokespersons for such demand-driven crop insurance products, thereby increasing trust among farmers.

Local officers' role in visiting project locations to collect feedback from farmers and conduct doorstep enrolment is key in building a strong trust between farmers, insurance staff, and public servants. The project's success in Karnataka is attributed to the strong commitment from local KSDA/KSDH staff and the AIC sales officers.

OUTCOME

With the support from the project, AIC introduced the weather index plus product in Karnataka in 2015. In 2016, the insurance scheme was rolled out to 174 grape and mango growers, insuring a total of 277 acres. KSDA intends to increase the size of the pilot to cover 10,000 acres of horticultural land under each product in the near future.

To show the effectiveness of the new product, a simulation study in Maharashtra for pomegranate growers was carried out. The study shows that during the observed time period the new product had a loss ratio of 22 percent compared to 167 percent of the regular WBCIS. But due to its hybrid nature, farmers witnessing

particularly bad weather had a payout increase of 118 percent compared to existing products.

Scalability of the product remains a major concern. Although KSDH plans to enlarge the outreach of the product to cover 10,000 acres of mango and grape plantations, critical challenges remain: premium levels for horticultural crops specified under the new scheme are difficult to achieve under an actuarial pricing regime. Given the higher production cost for horticultural crops, the premiums for the product are significantly higher than what farmers are willing to pay for insurance.





Name of programme:

Rural Insurance Services Programme (RISP)

Duration:

January 2014 – December 2016

Programme area:

India (countrywide)

Focus Regions:

Karnataka and Maharashtra

Cooperation partner:

Ministry of Finance, Department of Financial Services,
Insurance Division, of the Government of India

Local partner:

Agriculture Insurance Company of India (AIC),
Karnataka State Department of Agriculture (KSDA),
Karnataka State Department of Horticulture (KSDH)

Target group:

Rural households and agricultural enterprises in India

Contact person:

Advancing Climate Risk Insurance plus
E acri@giz.de

Photo credit:

single credits to be checked with acri@giz.de

April 2019

DISCLAIMER

This publication has been prepared by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and the Munich Climate Insurance Initiative (MCI) in the frame of the project "Promoting Integrated Mechanisms for Climate Risk Management and Transfer" funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). The information in this publication is solely based on the project documentation provided by the project implementer(s).