



TECHNICAL REPORT ON FISP INDEX INSURANCE PRODUCT IMPROVEMENT



World Food
Programme

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International Research Institute
for Climate and Society
EARTH INSTITUTE | COLUMBIA UNIVERSITY

June 2021

Summary

The Ministry of Agriculture, IFAD and WFP, with support of the International Research Institute for Climate and Society (IRI) and financial partners Mayfair, Zep Re and ACRE, collaborated on the design of an improved index insurance product for the Government of Zambia's Farmer Input Support Program (FISP) for the 2021/22 season.

This improved product incorporates best practices from both the current FISP insurance product and WFP's Rural Resilience Initiative (R4) project. A key aspect of this "blended" index is incorporating the perspective of farmers to ensure that the product accurately reflects local patterns of vulnerability and risk. To this end, WFP and IRI supported MoA in the collection of focus group data from almost 1,000 agricultural camps across the country, the largest such exercise IRI has ever supported. This data was then used by the inter-ministerial technical working group to tune the index, using interactive tools developed by IRI.

This document presents an update on milestones, workshops and activities related to the FISP index insurance program in 2020/21, as well as a summary of the inter-ministerial technical working group on index insurance recommendations for the 2021/22 index.

Background

In 2014, World Food Programme, in partnership with the Ministry of Agriculture, launched the R4 smallholder support programme with a focus on resilience across 5 districts (namely Gwembe, Mazabuka, Monze, Namwala, and Pemba in southern Zambia), supported by the Swiss Agency for Development and Cooperation's (SDC) Regional Office for Southern Africa, the Korea International Cooperation Agency (KOICA) and the Green Climate Fund. The intervention has reached 18,083 farmers with an integrated risk management approach, including conservation agriculture, risk transfer (index insurance) and risk retention (savings services). Following five consecutive seasons of offering insurance, practical and technical

lessons learned on index insurance in Zambia have been gained and recorded to inform the expansion of such initiatives.

In a bid to support Government systems, WFP, with support from the International Fund for Agricultural Development (IFAD) under the Adaptation for Smallholder Agriculture Programme - II (ASAP II) and the International Research Institute for Climate and Society (IRI) at Columbia University, has partnered with the Ministry of Agriculture to support the strengthening of national capacities, systems, and partnerships with private sector for climate risk financing and risk transfer.

Within the scope of partnership, the Ministry of Agriculture, IFAD and WFP agreed to the following:

- Support capacity building efforts on index design
- Kick start the activities around improving product features of the existing FISP weather index product
- Support the formation of a technical inter-ministerial working group on index design
- Development of a detailed training roadmap for the technical inter-ministerial working group on index design

To this end, WFP and IRI supported the Ministry of Agriculture in conducting the first ever inter-ministerial working group on weather index design. The workshop attracted participants from various organizations including Smart Zambia, Remote Sensing, Central Statistics Office, Meteorological Department, State Insurance Company, Pensions and Insurance Authority (PIA), Professional Life Insurance and Madison Insurance).

It was agreed to use the WFP supported approach to develop new windows to target the most vulnerable timings across the FISP portfolio. This is because, although the current FISP product has smooth coverage across the growing season, it does not have a mechanism for tuning coverage to target the times that have the most vulnerability, and this happens to be one of the strengths

of the WFP supported index. IRI provided its tools and processes to support the Zambian Government and local stakeholders to map out zones across the country, assemble official data sources, perform strategic sampled site visits, and support the “technical working group” perform the parameter optimization to reflect the most vulnerable periods and hence best windows

(and perhaps other parameters) for each zone. This process was undertaken in early 2021, resulting in potential indexes for the whole country developed by the technical working group. Now that the product is developed, the technical working group will be able to make informed decisions about what commercial rollout choices to make.

Objectives

- Provide support and recommendations towards WFP’s engagement with the newly formed Index Design Working Group and risk takers;
- Provide support in assessing key parameters that can help optimize the burning cost for Zambia;
- Initiate training of index design working group, including: i) Introductory training on index design and (ii) training on newly developed index design building blocks. Development of a detailed training roadmap, including a workplan for the current year, with an objective of final handover of the index design process to the working group in the coming years will be required;
- Support efforts to operationalize tools for digital data collection for design and monitoring, as required;

Milestones

- Finalised ODK forms for index design data collection
- Completed operational index drafts and description
- Completed joint workplan for blended index design developed together with GRZ’s technical service provider
- Held capacity building training for Index Design Working Group and kick-off of blended product development
- Completed draft blended index and description



Key Achievements and Findings

Crowdsourced Data Collection

In early 2021, IRI supported WFP and the Government of Zambia on a crowdsourced data collection exercise spanning almost 1,000 camps over the entire country of Zambia. In this exercise, focus groups of farmers were asked about their cropping practices and historical risk years - critical data which informed the improved design of the index insurance product.

Thanks to the Ministry of Agriculture's support, this crowdsourcing exercise was among the largest ever conducted, with an estimated ~300 MoA extension officers carrying out the surveys. With their support, the FISP programme was able to gather data for the entire country - including many remote rural areas - in a matter of weeks.

This crowdsourced data has been reviewed twice, first by the Inter-ministerial technical working group in Lusaka and again by the original MoA district staff who collected the data. This rigorous review process, which used IRI's interactive tools, ensured that the farmer data used for index design was of high quality.

Trainings and Workshops

IRI conducted a week-long workshop in March 2021 on index insurance design principles, which included key stakeholders from the Government of Zambia as well as FISP's insurance partners. At the conclusion of the workshop, participants agreed on a way forward for the design of the 2021/22 FISP index insurance product.

IRI also held a week-long workshop for the inter-ministerial technical working group team in April 2021, in which participants worked through key design decisions related to the index. The technical design team has also held biweekly meetings as the project progresses.

IRI's cloud-based interactive design tools - described below - were embedded into these training and workshop exercises, so that participants could work through key aspects of the index design process themselves.

Insurance Index Improvements

IRI has worked with the inter-ministerial technical working group to create a "blended" insurance product

for the 2021/22 season, reflecting both the successful aspects of the current product as well as best practices that IRI and WFP have developed over years of the R4 project.

Specific design principles that IRI and the technical team have applied to improve the index include:

1. Using crowdsourced data from farmers to tune the index to better reflect local conditions,
2. Combining satellite data, farmer reports and MoA agroecological zone classifications to identify the dominant perils in each district: Drought, excess rainfall, or both,
3. Introducing a more transparent, uniform structure for pricing the index and calculating triggers and exits,
4. Building simple, open-source interactive design tools to help local experts work through key decisions on all of the above.

Seasonal Monitoring

Moving forward, IRI will work with the inter-ministerial technical working group to develop regular processes for seasonal monitoring that can work on a national scale. The goal is to build processes which can be integrated into existing MoA activities and which keep

the cost of seasonal monitoring financially sustainable. For example, IRI is developing Whatsapp-based tools to collect key seasonal monitoring data from farmers and extension officers.

Tools Developed

To support the activities described here, IRI developed a number of open-source, cloud-based data collection, management and visualization tools for the FISP technical team. These tools include:

1. **Mobile survey instruments** for collecting crowdsourced data from farmers,
2. A web **platform for visualizing and cleaning farmer data** on historical bad years,
3. An interactive map which allows users to visualize various sources of climate and agroecological data, and designate their preferred zones of coverage for insurance accordingly,
4. An **index insurance design tool** which allows users to tune the parameters for the insurance product for each district of Zambia and compare the results against multiple sources of risk exposure information,
5. A **consolidation tool** to view many users' proposed index parameters and arrive at a consensus decision.

WEATHER INDEX INSURANCE ENHANCES THE RESILIENCE OF ZAMBIAN FARMERS

*Mr Borniface Haweza, a smallholder farmer
from Pemba District in Southern Province*



As climate change takes hold, increased erratic weather patterns are negatively impacting agriculture and threatening livelihoods and food security in Zambia. The most vulnerable are the 1.5 million smallholder farming households who are predominately dependent on rain-fed agriculture.

Mr Borniface Haweza, a smallholder farmer from Pemba District in Southern Province, is one of the many smallholder farmers that suffered a total loss of crops due to climate shocks. "In the 2018/19 farming season, we had very little rain. I planted my crops in December, but there was no rain until the end of January. Every day, I would go to my field to weed with the hope that it would rain. Unfortunately, it didn't," said Mr Haweza.

"It was painful to see our little maize crops dry up in front of our eyes. I had invested over ZMW 8,000 worth of inputs, only to recover ZMW 200," explained Mr Haweza.

Following the drought in the 2018/19 agricultural season, each eligible smallholder farmer received an average pay-out of ZMW 620, facilitated digitally through MTN mobile money wallets. In total, ZMW 5,489,567 was distributed.

"Weather index insurance helps stabilize smallholder farmers income – allowing them to continue farming regardless of disaster and weather uncertainties. As



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