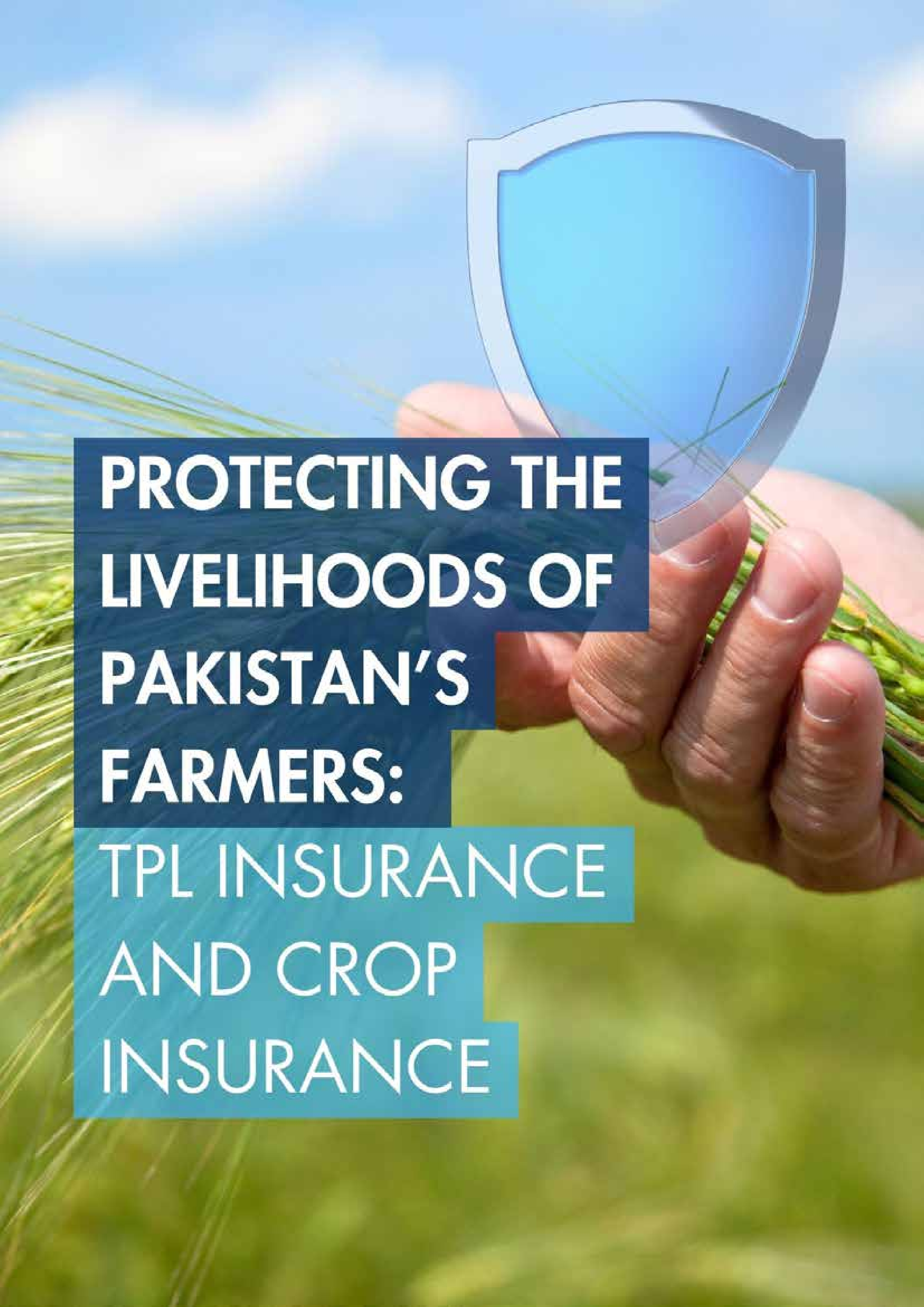

PROTECTING THE LIVELIHOODS OF PAKISTAN'S FARMERS: TPL INSURANCE AND CROP INSURANCE

Protecting the livelihoods of Pakistan's farmers: TPL Insurance and Crop Insurance

Climate impacts and biological perils have been impacting Pakistan's agriculture with greater frequency. And farmers have little protection from the serious financial impacts of these disasters. After crop insurance schemes introduced by the federal and provincial governments, the private sector led by TPL Insurance has demonstrated with three pilots that robust crop insurance is now available in Pakistan.

What the 2022 floods taught us about crop insurance

In 2022, much of the country experienced record-breaking heat waves, which adversely affected the nation's wheat crop in March and April, followed by catastrophic flooding in July and August, which resulted from 500% of historical average rainfalls and caused large-scale flooding across the provinces of Sindh, Punjab and Khyber Pakhtunkhwa (KP). In the wider context, Pakistan's 7.4 million smallholder farmers face increasing risks due to the impacts of climate change. The changes include flux in average temperature and precipitation as well as increases in the variability of weather and climate events. These changes have been developing for some time. For example, the number of heat wave days per year in Pakistan increased by 31 days from 1980 to 2007, and rainfall in plains and coastal areas decreased by 10% to 15%. The province of Sindh in particular experienced two hundred-year floods in the past fifteen years (2010 and 2022) for which extensive relief and rehabilitation efforts had to be undertaken.

The aftermath of the 2022 floods highlighted the urgent need for strong climate-resilient mechanisms to address these risks and help Pakistan's farmers adapt to the changing climate. In the absence of such mechanisms, not only do farmers suffer, but the government may also end up allocating more resources to post-disaster efforts than would require with appropriate risk-transfer mechanisms. The Government of Sindh allocated significant funds for flood relief efforts: between October 2022 and January 2023, the Sindh Flood Emergency Rehabilitation Project (SFERP) project utilized PKR 5.7 billion to repair critical infrastructure while the Kissan Package announced in late 2022 allocated Rs. 1,800 billion in loans and subsidies designed to reduce the cost of fertilizers and provide loans for farmers affected by the climate events. In addition to this, 1.2 million bags of wheat seed and Rs. 5 billion in interest-free loans were disbursed to landless farmers.

While these efforts were necessary to address the immediate aftermath of the floods, such funding often proves reactive and insufficient in addressing the recurring nature of climate-induced disasters. Proactive measures like crop insurance could potentially offer a more sustainable solution since it transfers the risk associated with climate-related and biological perils from farmers and the Government to the insurance community.

Crop insurance can provide a more effective solution by mitigating the financial risks faced by farmers due to climate-related disasters. But the current state of crop insurance provides inadequate protection to farmers. The Crop Loan Insurance Scheme (CLIS) of the central bank (State Bank of Pakistan, SBP), launched in 2008, made crop loan insurance mandatory for all crop loans issued by regulated banks. The federal government subsidizes the insurance premium for farmers with landholding below 25 acres. But less than 20% of smallholder farmers access formal financing from banks. This Crop Loan Insurance Scheme covers the main perils typically included in crop insurance schemes globally but has two major constraints:

a) the trigger for insurance pay-out in an area is a declaration of calamity by the government (which can be a subjective decision, not linked to an accepted scientific method), and

b) the maximum insurance pay-out is capped for each bank at three times the insurance premium paid by the bank (this is usually a very small amount compared to the losses incurred by both farmers and banks).

As a result, in the first fifteen years of this scheme, the insurance pay-out to small farmers is about half of the insurance premium paid out by the federal government for small farmers. The Government of Punjab introduced Area Yield Index-based Insurance scheme titled Punjab Fasal Bema in 2018 but crucial design changes within a couple of seasons made the scheme ineffective as an insurance mechanism to support farmers.

Where the private sector comes in successful pilots The type of crop insurance best suited to protect farmers is Area Yield Index-based Insurance (AYII).

Area Yield Index Insurance (AYII) covers all natural catastrophes, pests/diseases and related perils that could influence the reduction of crop yields. It covers the entire crop period, from sowing to harvesting crops. It is an insurance cover that insures farmers against a published pre-set historical benchmark. The perils covered in this product are windstorm, frost, excessive rainfall, heatwave, hail, flood, drought, pest and diseases.

At the end of the season, trained enumerators' measure yield levels for each area through a method known as crop cuts. This process involves measuring the harvest of sampled representative farmers. If the yields measured on the sampled farms are lower than the historical benchmark, then all the insured farmers in that area receive an insurance pay out.

AYII eliminates the administrative cost of going to each individual small farm for a survey which would be prohibitively expensive in any country. The average yield realized in a season is determined by a third party through modern statistical methods, satellite data, and crop cuts on a random selection of the area's farms.

Area Yield Index-based Insurance (AYII) was piloted purely in the private sector in Pakistan by TPL insurance and the Pakistan Agricultural Coalition in four districts of Punjab in the Rabi season of 2021-2022 on wheat crop. The Bank of Punjab and HBL were the participating banks. Pula Advisors of Switzerland was the insur-tech company which performed on-ground crop cuts and corroborated the data with satellite data. To complete the offering, TPL Insurance had an insurer-reinsurer agreement with SCOR-Re, a global reinsurer to split the insurance risk. The total sum insured in District Sheikhupura was over PKR 47 million, while the premium paid was PKR 1.7 million. No government calamity was declared; however, Pula crop cuts revealed the onset of pseudo black chaff (a bacterial disease that affects the wheat heads and can cause up to 40% loss in yields) in farms in District Sheikhupura. This resulted in wheat yield falling below the designated AYII threshold of 70% of the historic yields in the area and resulted in a pay-out of PKR 306,169. As for government operated insurance programs, no insurance pay-outs were disbursed to wheat farmers.

In accordance with its National Financial Inclusion Strategy (NFIS) policy objectives, the government has experimented with insurance as a mechanism for agricultural risk management and post-disaster loss compensation. A Government of Pakistan task force under the NFIS led by SECP and with representation by all stakeholders (provincial governments, State-Owned Enterprises involved in insurance, private sector experts, etc.) recommended in 2021 that Area Yield Index-based Insurance is the mechanism that should be adopted for nation-wide scale-up of crop insurance for Pakistan's farmers. The task force also recommended that the insurance premium subsidies for small farmers should be shared between the federal government and respective provincial governments.

Having reviewed the existing crop insurance programs in the country, TPL insurance realized that there was a gap that was big enough to accommodate all major insurance players in the market. The company's strategy was always to collaborate with the sector's major players instead of competing, however no other major insurance company was willing to penetrate the crop insurance market purely in the private sector with an innovation like AYII. Given that TPL insurance was backed by an impact investment-oriented management team, crop insurance seemed to be a natural next step for the company. The company leveraged partnerships with the most established and relevant players in the financial and insurance ecosystem with the support of Pakistan Agricultural Coalition and managed to achieve success through its initial pilots for AYII.

The Kharif Season Rice AYII pilot in 2023: The Kharif season AYII pilot involved insuring rice farmers in 2023 in the district of Pakpattan, Punjab province. The total sum insured was just over PKR 59.9 million, while the premium paid was over PKR 2.2 million. Rice yields of 42 farmers were impacted by the heavy rains causing River Sutlej to overflow in addition to the disease known as leaf blight affecting rice crops. While no government calamity was declared to trigger the CLIS-based insurance, the yields fell below 70% of the historic yields resulting in a pay-out of PKR 17.4 million to these farmers of Pakpattan who were Bank of Punjab borrowers. TPL Insurance was the domestic insurer with SCOR-Re as the global reinsurer.

The Cotton AYII project for a corporate farming project in 2023: The corporate cotton cultivation project involved the insurance of the cotton crop for a large farm of over 500 acres in district Rahimyar Khan under a Pakistan Agricultural Coalition project supported by leading textiles players like Mahmood Group, Indus Home, Dynamic Sportswear, and Textile Marketing Company. The total sum insured was PKR 100 million, while the premium paid was PKR 5 million. The project's sponsors are now considering scale-up. No government calamity was declared in the project area under the CLIS arrangement despite a severe white fly attack unseasonably in the month of September. However, since the cotton yield fell below the 10-year average production history (APH) due to the onset of pest attacks (mainly white fly), a pay-out of PKR 10.5 million was triggered based on AYII calculations done by Pula Advisors. Once again, TPL was the local insurer with SCOR Re as the global reinsurer.

Area Yield Index Insurance (AYII) vs Crop Loan Insurance Scheme (CLIS) Historically, AYII provides better coverage, taking account of more perils more comprehensively, and has a higher chance of pay-out compared to other insurance programs. For farmers under climatic catastrophes, timely and adequate payout is the key. The pay out under AYII is timelier and is made within two weeks of the independent advisor, Pula, issuing their report. Whereas in CLIS, the calamity declaration by the Government can take a longer time.

With CLIS as the sole risk mitigator, restrictive payout of 3 times the insurance premium paid is insufficient for farmer support in terms of compensation. Looking at the numbers, the monetary value of the farmers' loss of yield is significantly greater than the CLIS pay out, Hence, AYII (which pay more) is a superior product.

Finally, CLIS is only triggered in mass destructions and catastrophes while AYII triggers for these perils as well as the more frequent perils faced by farmers. The table below lists the perils where CLIS is likely to be triggered in comparison with AYII.

Existing Crop Loan Insurance Scheme		Proposed scheme (AYII)
Risks covered on paper	Is Government likely to declare calamity for this risk?	Is risk covered and is payout likely?
Windstorm	Likely	Yes
Excessive rain	Likely	Yes
Flood or drought	Likely	Yes
Locusts	Likely	Yes
Hail	50/50	Yes
Frost	Unlikely	Yes
Heatwave	Unlikely	Yes
Pests/insects	Unlikely	Yes
Viral/bacterial attacks	Unlikely	Yes

Looking Ahead The recurring pattern of floods in Sindh along with the frequency of cyclones every few years underscores the need for a proactive approach to disaster management. Instead of relying solely on post-disaster relief, which can be both costly and reactive, investing in crop insurance can offer a more resilient and cost-effective strategy for managing climate risks. This approach provides timely support to farmers (pay-outs disbursed typically within four weeks of harvest). Instead of irregular pay-outs by the Government to compensate farmers for such impacts every year, risk transfer mechanisms are now available at a predictable cost to shift this burden to local and global insurers using 21st century tools.

Climate unpredictability is only expected to rise. Climate risks are first and foremost risks to agriculture. With 93% of Pakistan's freshwater resources going to agriculture, climate risks such as floods, droughts, excessive rain, heatwaves, etc., are all risks to livelihoods in agriculture. Based on successful pilots conducted by Pakistan's private sector with global firms for insure-tech services and re-insurance, the Government of Sindh is considering a similar program for crop insurance after the historic floods of 2022. Today, there is also broad consensus in banking and insurance circles that Pakistan's agri-insurance regime needs serious upgrade and scale-up. Therefore, it is imperative that provincial governments and other private sector players collaborate with companies like TPL Insurance and its partners to scale up crop insurance projects as a means to deliver social protection to all smallholder farmers of the country.

Based on the unique experience it has garnered through its pilots, TPL Insurance is now looking to explore the opportunity presented in corporate agriculture as well, and is planning to collaborate with major corporations delving into corporate farming under the SIFC initiative. Under SIFC, Pakistan is also seeking large-scale investments from Saudi Arabia, the United Arab Emirates (UAE), Qatar and Bahrain over the next three to five years for corporate farming, with the aim of cultivating 1.5 million acres of previously unfarmed land and mechanizing the existing 50 million acres of agricultural lands across the country—a prospect TPL Insurance plans to capitalize on.