

Issue 61 • Nov/Dec

HarvestA

Securing South Africa's Food Resources

Minimising risk

Index-based
crop insurance

**Sustainable
investment**

Dairy deal paves way
for regenerative growth

**Women
farmers inspire**

Meet the next
generation of growers

**Reduce waste,
feed others**

OneFarm Share makes it happen

RSA R29.95

ISSN 2305-0551



9 772305 055108

South Africa's top international award winning agricultural magazine

Optimising insurance

New crop insurance index developed by the ARC

For more than a decade, researchers and insurers in developing countries have been investigating the feasibility of using insurance to reduce the impacts of adverse weather on agriculture. In Africa, most studies and insurance programmes were concentrated in east Africa and focused on livestock and crop insurance. In contrast, in developed countries, agricultural producers have been

purchasing insurance for many years to cover their crops against natural disasters such as hail, drought, floods and diseases. However, traditional insurance schemes involve in-field damage assessments that come with high administrative costs and premiums.

In the event of a loss, the insurer has to send surveyors into the fields to assess the damage to the crops and quantify the losses. This is usually a time-consuming and costly activity.

In addition, traditional insurance schemes are vulnerable to moral hazard and adverse selection. Moral hazard is a situation where the insured parties increase the chances of receiving payouts by deliberately exposing themselves to risks. Adverse selection is a situation in which those who are exposed to high risk take up insurance more frequently than others because they perceive more profits from insurance.

Index-based crop insurance (IBCI), also called parametric insurance, is less susceptible

Only 40% of South Africa's large-scale grain commercial farmers have traditional crop insurance, while smallholder farmers either cannot afford insurance premiums or are unaware of the existing traditional products



to these shortcomings because it indemnifies clients based on an objective index that is known to be associated with crop yields and losses. The index may be derived from weather-related parameters such as rainfall, temperature, soil moisture, evapotranspiration and vegetation indices, which can be measured by weather stations and satellites. In this way, farmers and insurers cannot easily manipulate IBCI because its sources of data are objective and independent. This reduces administrative costs and insurance premiums because damage assessments are not conducted through strenuous, time-consuming and costly field surveys. All that is needed is an index that is associated with crop yields and crop losses from which the compensation can be calculated. This type of insurance is suitable for South Africa's crop farming

systems, which are exposed to production fluctuations and losses due to unpredictable weather. Although many African countries and other parts of the world are running pilot IBCI programmes, there has been little effort by South Africa's insurance industry to adopt parametric insurance. This may be due to a lack of innovation in the industry.

Reports show that only 40% of South Africa's large-scale grain commercial farmers have traditional crop insurance, while smallholder farmers either cannot afford insurance premiums or are unaware of the existing traditional products.

A research team from the Agricultural Research Council (ARC) conducted a series of studies through which they identified the shortcomings of traditional insurance and the lack of access to insurance as gaps for

innovation. They determined that there is an urgent need to develop an IBCI product accommodating both emerging smallholder and large-scale commercial farmers. The development of a crop insurance index is timely as it is informed by lessons learned from similar insurance products piloted in other countries. It seeks to address the problem of low insurance uptake which stems from basis risk and poor product design. However, the product has to be part of a comprehensive risk management scheme. Such a scheme could increase agricultural productivity by encouraging risk-taking among farmers while improving smallholder farming practices. The comprehensive risk management scheme could achieve this by bundling or linking the product with advisory services and input supplies. In Nigeria, for example, a survey showed that bundling insurance with agricultural inputs could attract more farmers.

In other countries, including Bangladesh and Kenya, insurance has encouraged farmers to invest in improved inputs, which has seen crop yields increase significantly.

"Farmers will allocate their resources in a manner that maximizes returns if they are assured of financial compensation for losses arising from factors beyond their control", one study reported.

The first phase of the ARC team's research investigated the insurability of different weather and crop indices. In addition to being a custodian of a large national network of weather stations and climate database, the ARC also tested satellite datasets that could enhance the index's performance. The advantage of the ARC's proposed crop insurance index is that it can be recalibrated continuously based on new experiences, new data and different locations. The next step is for the ARC to partner with government, insurers and other relevant stakeholders and take the product to the intended beneficiaries – the farmers. ■

Dr Wonga Masiza, ARC-Natural Resources and Engineering

E-mail: MasizaW@arc.agric.za

Dr George Chirima, ARC-NRE

E-mail: ChirimaJ@arc.agric.za

