

# Tilling the soil for a resilient future



The 3rd Asia Agriculture Insurance Conference looked at the possible insurance products that might be able to increase penetration within the agriculture sector where insurance is most needed bearing the risks faced.

By Ahmad Zaki



On average, agriculture accounts for 10% of the GDP worldwide and about 40% of the world's population work in an agriculture-related industry, which highlights the importance of building resilience in global food production.

"Agriculture insurance has three main characteristics that make it special," said Mr Hang Gao, VP of Guy Carpenter China. "There is extensive spatial distribution with a uniform geographical pattern; it is vulnerable to various perils, and once again there is an evident and obvious spatial pattern; and possibly its most unique characteristic is its sensitivity to timing, with differing growth and harvest seasons based on crop and location and even the perils have spatial and timing variations."

This leads to a highly complex situation for which good data is critical, and no one organisation has a complete set of data. Mr Gao elaborated on reanalysis data, currently the most reliable form of data collection, which consists of utilising surface observation and remote sensing data and climate models to create a complete blend of information with which parameters of index-based insurance can be built.



Mr Hang Gao

## Index-based insurance

Mr Jeffrey Khoo VP and Senior Originator of Global Food and Agriculture at Swiss Re Corporate Solutions Singapore, shared some insights in data collection, based on Swiss Re's experience in selling index-based insurance in Asia.

"All the data that a weather station can crank out, which includes historical data – rainfall, temperature, humidity and sunshine hours – is relevant data we can use to trigger a payout. The data source has to come from a neutral third party of government data,"

Index-based insurance is largely agreed upon to be the current best solution for sustainable agriculture insurance. There are several types of indices utilised in agriculture insurance, including weather, area yield and normalised difference vegetation index (NDVI), with each index proving to be the better option based on exposure, geographical location and type of crop being grown.



Mr Jeffrey Khoo

## Basis risk a key drawback to index-based insurance

"The key characteristic of index-based insurance is how simple it is to process – there's no claims management, no loss adjustment and objective claims assessments," said Mr Salah Dhouib, Class Underwriter – Agriculture at Liberty Specialty Markets. "Plus, the pricing is based on weather and yield, which are historical and stable measures – 30 degrees Celsius yesterday will be 30 degrees Celsius tomorrow."

However, there are challenges to index-based insurance, as no system is



Mr Salah Dhouib

perfect. Basis risk is the key drawback, with the divergence between index and reality being a consistent issue. “The relation between yield and weather is complicated and yield is not just about weather,” said Mr Dhoub. Furthermore, temporal and spatial variations also factor into basis risk, leading to a highly complex problem for which there is currently no solution.

### The problem with modelling

All the data that is collected is being utilised to create agriculture risk models for various types of crops, terrain and peril. However, agriculture risk modelling is currently too complex and mysterious for (re)insurers, said Mr Sonu Agarwal, Managing Director of Weather Risk Management Services.



Mr Sonu Agarwal

The industry’s modelling experts need to simplify and demystify the process behind modelling, so (re)insurers can actually make use of those models, he said.

### Existing implementation is not sustainable

Mr Peter Book, Head of Agriculture at Allianz SE Reinsurance Branch Asia Pacific, was more critical of the mod-

ern implementation of index-based insurance and questioned whether classic indemnity insurance was as unviable for agriculture as commonly believed.

He said that a one-size-fits-all insurance rate does not work for the agriculture industry, mainly due to the temporal and spatial variations involved, and that the industry is “distorting agricultural practices with insurance practices.”

A uniform rate leads to certain farmers finding any specific scheme to be not financially sound, while the same scheme might unfairly favour another farmer in a different location, harvesting a different crop. “Don’t distort the truth,” he said. “Have the rate reflect the risk.”

At the same time, Mr Book warned against providing too much coverage in index-based insurance schemes. “Insurance is to protect against the unexpected, not the everyday. That’s why everyone is buying index insurance and that’s not sustainable,”

Mr Book advised insurers to think about rate consistency and longevity, to understand inherent volatility in the agriculture industry, to accept the fact that there will be data gaps which are being substituted by simulated data



Mr Peter Book

### Highlights

- Index-based insurance is a versatile solution, but is not perfect; and
- Insurers are not taking advances in agriculture technology into account.

and to adjust their plans after taking all of that into account.

Additionally, he spoke about the ‘free handouts’ – heavily subsidised government schemes which no private insurer can compete with. “Shift your focus to pre-event funding and on qualified post-event funding,” he said.

### Widening the net

The highest at-risk group when it comes to agriculture are the rural subsistence farmers, which make up the bulk of the population in nations like Cambodia, India and Indonesia. While microinsurance and government-led premium subsidy schemes are paving the way in closing the protection gap, there are other factors that can go hand-in-hand with such schemes to lead to better overall resiliency.

One of the factors within agriculture itself is how increasing use of technology – improved genetic modification of plants, better pesticides and better hardware – has altered the risks that farmers face. The worry is, said Mr Andres Lorenzana, MAPFRE RE Singapore and Labuan Branch, that agriculture insurance has yet to take this advances in technology into account when designing products.

For Mr Alex Chen, CEO of Asia Risk Transfer Solutions (ARTS), the technological advances that farmers have adopted represents a brand new avenue of distribution and awareness-education that has not been fully taken advantage of. Asia has an incredibly high mobile penetration rate, he said, and connectivity can aid insurers in product design, claims management and dispersion and simply getting in touch with the consumer.

The 3rd Asia Agriculture Insurance Conference drew some 120 delegates and was sponsored by AgRisk, Guy Carpenter and Weather Risk Management Services Pte Ltd. 



Mr Alex Chen

## Agriculture insurance is the most profitable general class in China

With some 2 million policies covering over 400 million farmers and households, China is the largest agriculture insurance market in Asia, and second only to the US worldwide. It is also the most profitable non-life line of business for primary insurers in China, said Mr Wen Chen, Sales Director of Asia at AgRisk Limited.

The nation pulls in CNY6.5 trillion (US\$964 billion) worth of premiums a year, and has seen rapid growth since 2007, with a y-o-y growth of about 25%. As for profitability, much of this comes from the heavy involvement the government has in protecting its people and their livelihood. The central government offers 15 protection schemes and the various provincial governments offer over 100 schemes combined.

All of these schemes are heavily subsidised as well, with the central government providing up to 40% subsidy and the provincial or county-level governments offering another 40%, leading to a massive discount for the policyholder.

Government involvement does not stop there, however. They are also active in the operations of the schemes, from distribution to claims management, going so far as to submit claims on behalf of the farmer.

