A role for insurance in food security in Asia

Food and water are fundamental necessities for every living being and their security is a serious issue. While food and water security is a global issue, it is particularly important in Asia, where millions of people depend on agriculture for their livelihood. **Allianz SE Reinsurance** branch Asia Pacific agriculture underwriter **Sonia Rawal** discusses the role insurance can play.

A striking paradox of the modern age is that, despite economic and technological progress, we cannot guarantee the provision of food and water to a vast section of the world's population. Even those who have relatively easy access to food and water today, may not continue to enjoy such access in the future as the impact of climate change disrupts traditional agricultural practices.

Looking after the environment

A critical element in promoting sustainable food security is the development of resilience within farming communities and systems that recognises the need for environmental stewardship. This resilience can come in the form of capital improvements (irrigation), working capital (purchase of improved seed varieties and fertilisers), technology (mechanisation) and education (management practices). Many of these actions require considerable investment at the macro or micro level and it is in protecting these investments and encouraging the development of sustainable resilience that insurance can play a unique role.

Many countries in Asia have agriculture-dominant economies. According to World Bank data, in 2015, agriculture constituted 27.3% of employment in the world, while in South Asia it accounted for 44.6% of employment. The net output of the agriculture, forestry and fisheries sectors as a percentage of gross domestic product is almost five times more in South Asia than the rest of the world. Apart from its economic importance, agriculture also holds cultural importance for many communities in Asia.

Agriculture continues to remain the only sector that has a direct combined impact on poverty, rural livelihoods, health and nutrition. Deteriorating conditions for farming can lead to many social and political problems, including large scale urban migration, increasing pollution, social unrest and political instability. Since the lack of food security can

generate such serious issues, it is important to understand why food insecurity may arise and what can be done to avoid it.

Threats to food security in Asia

There are many factors that can potentially lead to food security problems in Asia. One major issue is that farming is often not profitable enough and/or too volatile for farmers, and as a result many leave their farms in search of better employment opportunities despite having no formal or otherwise transferable qualifications. In addition, the agricultural sector is highly dependent on weather conditions, and irrigation systems are often not adequate.

For example, India is still a monsoon-dependent economy with more than 72% of the land area exposed to seasonal drought risk. Even if farmers experience a season with good weather, their ability to capitalise on it is often curtailed by fragmented land holdings. Due to a variety of reasons, farmers have smaller land holdings that can be used for cultivation purposes. This reduces their ability to make viable investments in mechanisation and modern techniques, which adversely affects agricultural productivity.

Moreover, post-harvest losses are often high. In India, roughly 7% of total grain output, 10% of seeds and between 25% and 40% of fruits and vegetables, overall a third of farm harvest spoils, are wasted every year because there is not enough storage and supply-chain infrastructure.

Such constraints exist on the supply side, and the viability of farming is often severely curtailed by underdeveloped agricultural markets. Whilst food prices may be regulated by governments, supply and demand is often ineffectively coordinated, resulting in an imbalance and volatile prices received for farmers.

The importance of pricing

Market price mechanisms, such as minimum floor prices, rarely work as planned over the longer term and government interventions are often ill-timed, resulting in diversion of production from other crops that shifts the supply and demand problem to a different commodity.

> **Technology can play a crucial role in facilitating solutions to address the problems of farmers.**

Even with a guaranteed floor price, increases in input costs such as for fertilizers and seeds, as well as poor physical infrastructure to get their produce to and safely stored at a market add to farmers' troubles. As a result, farmers are not assured of recovering costs incurred during production and are more reluctant to invest.

While these problems appear daunting, they are not unsolvable. It is important for a range of entities to come together to address them. Strong regulatory and institutional support from governments is critical. Private enterprises are equally important in providing the technological know-how and organisational capabilities that governments may sometimes lack. An oft-forgotten component is the action of on-ground change agents, like not-for-profit organisations and farmer societies, who can help engage with local communities. Partnerships and alliances are the order of the day.

Technology can play a crucial role in facilitating solutions to address the problems of farmers. e-Choupal, which launched in India in 2000, not only benefited the farmers doing business through their network, but also led to a ripple effect on the public sector managed food grain management systems that resulted in an upgrade.

Making use of tech

Mahindra & Mahindra's Trringo, a mobile based app enabling farmers to rent tractors, is a unique example of leveraging technology to help farmers use machinery without having to make the large investment (≈$7,500) of buying tractors. Through Trringo, the farmers benefit from available latest machines, freeing labour as well as raising productivity and product quality whilst paying only for the services they use without locking any money in as capital.

TCS' mKRISHI offers personalised advisory services in voice and visual formats using communication devices, such as mobile phones through its mKRISHI platform.

Apart from technological solutions, given the inherent uncertain nature of agriculture, insurance plays a crucial role in the agri-value chain. A developed agriculture system is based on three key pillars: knowledge, infrastructure, and a robust delivery mechanism. Agricultural insurance can ease the volatility and help manage risks at every level. However, implementing a strong crop insurance scheme that can benefit all farmers is often challenging.

While the insurance scheme can be considered as an improvement over earlier programs, there are also areas for improvement. The main method of distribution is through a compulsory bundling of the insurance with loans which, whilst effective, means that the scheme is likely to be less accessible to those farmers who do not take loans. Governments should continue to evaluate, including taking the feedback of the insurance industry, and refine insurance schemes so that a wider set of farmers can avail the benefits of insurance through a stable and well-supported national insurance programme.

In seeking a higher level of output or improved security of food production we must be conscious of the environment and societal impacts of the food production systems we are promoting. Insurance can play a role in this process through the provision of risk management tools that smooth out the income volatility arising (predominantly) from weather volatility and encourage investment in practices that promote long term sustainability over short term fixes.

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