



Agricultural insurance for small-scale farmers

GIZ's approach and learning experiences from projects

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ABBREVIATIONS

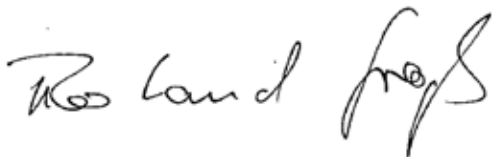
A2ii	Access to Insurance Initiative
ARC	African Risk Capacity
CCEs	Crop-cutting experiments
CCRIF	Caribbean Catastrophe Risk Insurance Facility
GAIP	Ghana Agricultural Insurance Pool
GMet	Ghana Meteorological Agency
IAIS	International Association of Insurance Supervisors
PCRAFI	Pacific Catastrophe Risk Assessment and Financing Initiative
RIICE	Remote sensing-based Information and Insurance for Crops in Emerging Economies
SDGs	Sustainable Development Goals

Foreword

In the past years, agricultural insurance has proven to be an effective tool for reaching developing efforts in different areas such as rural development, food security, climate change adaptation and poverty alleviation among others. Yet, agricultural insurance is a complex financial product. GIZ has gained experience in the implementation of agricultural insurance projects and the development of agricultural insurance markets. Learning from these experiences, this document develops a case for why and when agricultural insurance is needed in our partner countries. How can this financial instrument increase the resilience and welfare of farming households and communities, enhance food security and support climate change adaptation? What are the success factors for implementing

agricultural insurance projects? This document also describes the reasons why agricultural insurance still has a limited reach and what GIZ has to offer to tackle the challenges at hand.

This paper was developed due to the rising demand for knowledge on agricultural insurance from GIZ colleagues from other departments. It was jointly prepared by the Competence Center Financial Systems Development and Insurance and the Sector Programme Global Initiative for Access to Insurance with the support of various GIZ projects linked to insurance. It targets both GIZ staff working in partner countries and GIZ headquarters who are involved in designing, implementing and monitoring projects aimed at supporting rural communities.



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Executive Summary

Every year agricultural produce worth billions of US dollars is lost through damage caused by factors like the weather or pest attacks. Farmers manage these risks in a number of different ways. For elements of risk that cannot be avoided or mitigated, insurance is an essential tool. Besides insurance, informal risk transfer within families and communities is common in developing countries. However, the highly systemic or covariate nature of many of the risks to agricultural production means that – when larger disasters strike and the whole community is affected – these informal risk transfer systems collapse.

Agricultural insurance is a financial product suited to all kinds of farming businesses. Small-scale semi-commercial farmers benefit the most from insurance compared to larger commercial farms, as these latter tend to apply better risk management practices and have a stronger asset base.

Farmers are affected by a range of risks that affect their health, assets and/or production. Agricultural insurance only covers risks that are related to agricultural production, be it crops or livestock. Traditionally, agricultural insurance products were offered on an indemnity basis, yet due to the high administrative costs involved, agricultural insurance for small-scale farmers now tends to be offered in the form of innovative weather and area-yield index products.

The majority of agricultural insurance is sold directly to farmers (micro-level insurance). In order to keep distribution and administration costs low, many of these insurance schemes apply aggregation models involving financial institutions, farmer organisations or value-chain actors. Portfolio or meso-level insurance has not been successful in achieving significant scale, as demand from intermediaries for agricultural insurance is low. Macro-level insurance is bought by national or sub-national governments as an element of their disaster risk financing strategy. Policy coherence is important to ensure that micro- and macro-level schemes are aligned.

Agricultural insurance has witnessed significant growth in developing countries over the last decade, with the number of policyholders reaching 198 million farmers in 2014. An important factor that contributed to this burgeoning interest in agricultural insurance was the international debate on

climate change and disaster risk management, which led to the emergence of regional insurance schemes such as African Risk Capacity (ARC) or the Caribbean Catastrophe Risk Insurance Facility (CCRIF). At the national level, many governments have been providing fiscal support for agricultural insurance, often in the form of premium subsidies. Agricultural insurance has also benefited from advances in remote sensing, weather sensors and mobile technologies that have supported the emergence of new product types such as index-based insurance.

Despite the impressive growth of agricultural insurance in recent years, hundreds of millions of farmers remain uninsured. The three major challenges to increasing the reach and use of agricultural insurance are: (1) un conducive policy and regulatory frameworks; (2) insufficient provision of public goods – in particular, data and insurance awareness; and (3) lack of sustainable business models for agricultural insurance.

GIZ interventions on agricultural insurance

The objective of GIZ interventions is to increase low-income/small-scale farmers' access to and use of consumer-oriented agricultural insurance. The main benefits of agricultural insurance are that (a) farmers' livelihoods are protected and (b) farmers are enabled to allocate their resources more effectively. Agricultural insurance contributes to SDG 1 (eliminating extreme poverty), SDG 2 (reducing hunger and promoting food security), SDG 3 (achieving good health and wellbeing) and SDG 13 (taking urgent action to combat climate change and its impacts).

Given the complexity of the topic, GIZ applies a multi-level approach that addresses the various challenges at the macro, meso and micro levels in a systemic manner. GIZ designs its interventions based on international good practices and on lessons learned from the 21 different agricultural insurance projects it has implemented over the last 10 years. Projects benefit from GIZ's close working relations with global partners (e.g. the International Association of Insurance Supervisors [IAIS] and other initiatives such as the InsuResilience Global Partnership) and from the know-how of its backstopping units (competence centres) in Germany.

GIZ focuses its interventions around the following three key intervention areas, which directly relate to the three major challenges identified:

Creating a conducive policy and regulatory framework:

GIZ fosters public-private cooperation in the sector and supports partners on the design of policies that help the agricultural insurance market to grow. GIZ supports regulatory authorities on the design of a framework that both safeguards the stability of the financial sector and protects consumers. GIZ works with its partners to develop regulations that help the market to grow by, for example, permitting the use of new technologies for loss assessment or the use of low-cost distribution models to reach low-income farmers in remote areas.

Improving access to critical public goods such as data and insurance literacy:

GIZ builds partners' capacities to generate and manage data in a cost-effective manner. GIZ projects support the pilot-testing of new technologies and build the capacity of partners to introduce and make use of modern data collection and analysis tools, such as satellite-based yield monitoring technologies. GIZ also assists governments and the insurance industry with the design and implementation of broad-based agricultural insurance education campaigns. In addition, individual insurers receive support with designing marketing campaigns that provide farmers with product information that is both accurate and easy to understand.

Expanding the reach of insurance services:

GIZ builds insurance companies' capacities to develop sustainable distribution and business models that are able to deliver insurance services in remote areas at a low cost by, for example, using aggregation models. GIZ provides insurance companies with capacity and advisory services that enable them to develop innovative and demand-oriented agricultural insurance products. GIZ invests in new technologies that make insurance products for low-income farmers easier to access and more affordable. GIZ also builds the capacity of farmer facing businesses such as agribusinesses, lenders or input suppliers with the integration of agricultural insurance into their business models.

Guiding principles for GIZ interventions

To make agricultural insurance a viable development option in the long term, GIZ bases its approach on the following key principles:

GIZ supports national governments to design cost-effective support strategies for agricultural insurance that focus on: (a) creating a conducive policy and regulatory framework; (b) providing public goods and services, in particular by improving availability and access to data and by delivering financial literacy/insurance awareness campaigns; (c) providing support for risk financing by, for example, facilitating access to reinsurance or acting as reinsurer of last resort; and (d) strengthening market infrastructure through, for example, capacity building.

GIZ promotes a market-driven approach that creates a level playing field for both state-owned and private insurance companies. GIZ encourages the private sector to play a strong role and facilitates public-private dialogue to ensure an inclusive policy-making process.

Agricultural insurance is a financial product based on actuarial calculations that ensure products reflect the true nature of the risk and are offered on a financially sustainable basis. While pilot schemes can be useful to test consumer reactions to a new product or fine-tune a technology innovation, their limited time frame and geographical coverage means they do not help in determining the long-term viability of an insurance scheme.

At the heart of GIZ's approach is the development of an agricultural insurance market that adds value to farmers' livelihoods. The key is to develop insurance products that are suited to the living conditions and risk exposure of farmers. Insurance has to offer a meaningful level of protection that covers a significant share of farmers' investments. It must also be affordable. To this end, premiums can be pre-financed (e.g. within contracting schemes), which helps to increase the reach of the insurance. Whenever premium subsidies are provided, they should be designed as "smart" subsidies.

GIZ aims to create long-term solutions for agricultural insurance that can reach millions of poor farmers in developing countries. To achieve its development objectives, GIZ focuses on major value chains that are of relevance for small-scale farmers. Every intervention requires (a) clear growth targets in terms of the locations and farmers to be covered in the medium term (three to five years) and long term, and (b) an exit strategy for GIZ.

GIZ does not promote one particular type of product (indemnity, weather index, area yield index). Rather, it helps insurance companies to analyse the situation of its potential clients and develop appropriate insurance solutions based on this analysis.

GIZ promotes voluntary insurance that gives farmers the opportunity to make their own risk management decisions. If, due to market failures, compulsory insurance has greater potential for generating the desired developmental impacts, GIZ works to raise farmers' awareness about the insurance and ensure that compulsory products are tailored to farmers' needs.

GIZ promotes the concept of responsible finance and works with insurance and distribution partners on developing products and processes that protect the interests of their clients. Consumer protection is achieved through the provision of simple products and procedures, accurate product information during the sales process, and transparent claims procedures. GIZ also promotes regulatory frameworks that protect the interest of farmers, for example through the establishment of a formal complaints mechanism.





1. Introduction

Farmers in developing countries face many risks including yield losses due to extreme weather events, pests and diseases. Climate change is aggregating these risks. Agricultural insurance can be an appropriate way to reduce risks and strengthen farmers' resilience.

What is agricultural insurance?

Agricultural insurance is a financial product that helps farmers to deal with losses in their agricultural production. Agricultural insurance is a business transaction whereby the buyer of insurance (i.e. the policyholder) pays a premium to a licensed insurance provider and receives a payment (i.e. compensation) if the insured event, such as insufficient rainfall, occurs.

Why agricultural insurance?

Agricultural insurance is needed because agricultural production is affected by external risk factors, like the weather, that are beyond farmers' control. Farmers can eliminate or contain some risk factors through their own efforts (e.g. through irrigation or pest control) or with the help of government, development partners and NGOs but are left with residual risk, some of which can be transferred to the insurance sector. In this way, when farmers suffer losses they can fall back on the compensation provided for in their insurance policy.

Who needs agricultural insurance? Every agricultural producer who is exposed to risks beyond his or her control is a potential client of agricultural insurance. However, large-scale commercial farms are much better prepared to deal with risks and access insurance than are smallholder farmers. Agricultural insurance is therefore particularly important for low-income small-scale farmers because their low capital base means that, in the event that their production is lost, they end up trapped in poverty.

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Structure of the document. **Chapter 2** provides a general background on agricultural insurance: Section 2.1 describes how agricultural insurance is embedded in the development agenda and how the topic links to areas such as climate-smart agriculture and social protection. It also describes the purpose, target group and product types of agricultural insurance, as well as its limitations. Section 2.2 looks at the impact agricultural insurance has on farmers' lives, and 2.3 presents the main drivers and global trends for the growth of agricultural insurance in recent years. Section 2.4 describes challenges in providing agricultural insurance for low-income farmers.

Chapter 3 describes how GIZ tackles the challenges presented: Section 3.1 describes the objectives of GIZ's agricultural-insurance-related projects, the impacts they achieve and their link to the Sustainable Development Goals (SDGs). This is followed in 3.2 by a presentation of the systemic financial sector development approach that GIZ applies in its work on agricultural insurance. 3.3 describes the three activity areas of its projects, details typical activities and outputs, and presents examples from previous projects. 3.4 provides guidance on the content of our work and key implementation principles and 3.5 deals with the role of the Competence Centre Financial Systems Development and Insurance.



2. Agricultural insurance for small-scale farmers

2.1 The role of agricultural insurance and its interfaces

Risk in agriculture. There are more than 570 million farms around the world that constitute the main source of food and income for rural households (FAO, 2014). However, every day these farms' agricultural production is exposed to a plethora of risks that threaten the welfare and livelihood of farmers. Reductions in wealth are brought about by, among other things, production-related risks like weather events or pest attacks that reduce the quantity or quality of produce. Global agricultural losses in developing countries due to natural hazards and disasters are estimated at USD 3 billion per year for 2003–2013 (FAO, 2015).¹ This figure only includes medium- to large-scale disasters; smaller weather fluctuations that impact confined geographical areas further add to the plight of farmers. A significant share of annual production is also lost to pests and diseases, which reduce yields by between 26% and 29% for soybean, wheat and cotton, and by 31% for maize, 37% for rice and 40% for potatoes (Oerke, 2006). Pre-harvest pest and disease damage in the eight most important food and cash crops accounts for 42% of the attainable crop production, or a production value of USD 300 billion (Anderson, et al., 2004). Other internal risk factors for farmers are post-harvest risks (e.g. insect infestation of harvested crops), finance-related risks (e.g. an increase in interest rates), personal risk (e.g. sickness of the farmer), risks to machinery, and other risks such as those related to environmental pollution. Apart from these internal risk factors, losses may also be caused by external factors: (1) market risks, such as price volatility, (2) risks related to the political/institutional domain, such as corruption in government-sponsored input schemes, and (3) risks from third parties, such as theft of harvest (Frentrup, Heyder, & Theuvsen, 2011).

Elements of agricultural risk management – avoiding, mitigating, transferring, or coping with risk. Farmers apply a range of approaches to deal with risks. As farmers tend to be risk averse, they may try to avoid production risks by simply not investing in their farms. This strategy, how-

ever, reduces their income earning potential. When avoiding risk is not possible, farmers will seek to mitigate their risks. Numerous and diverse approaches are available for mitigating risks including the use of resistant seeds, irrigation, integrated pest management, etc. For those elements of risk that cannot be mitigated, farmers try to transfer the financial impact of their risk to others (e.g. by taking on relevant insurance cover). Unfortunately, it is impossible to eliminate risk entirely through risk mitigation and risk transfer. Farmers have no choice but to retain some of the risk and, in the event of large-scale disasters, must cope with the resulting losses by, for example, selling livestock. The sale of productive assets makes their subsequent recovery slow and difficult (Hess, Hazell, & Kuhn, 2016). Ex-ante coping strategies help to improve resilience by, for example, mobilising savings that farmers can use to withstand and manage shocks.

Holistic view of agricultural risk management. Agricultural insurance is only one element of a comprehensive risk management strategy approach that helps to increase farmers' resilience. It is an instrument that complements and adds to other development initiatives that support farming communities, in particular climate-smart agriculture and social safety nets:

- **Climate-smart agriculture:** Agriculture sector development helps farmers to manage risk. For example, by building farmers' capacity to apply sound agricultural practices and climate-smart agriculture,² production risk is reduced. Market risks such as price volatility can be managed by improving storage capacity and market linkages. However, farmers remain wary of risks they cannot eliminate entirely, such as weather fluctuations. This risk aversion influences their business decisions and holds back investment. This aspect is of particular importance for adaptation to climate change since many farmers need to invest to make their production more resilient or need to switch to growing different crops. Agricultural insurance helps to reduce uncertainty for farmers and can build up their confidence to invest.

¹ This figure only includes damages reported in post-disaster risk assessments. So, while it is indicative of scale, the actual impact is likely to be even higher. To arrive at a closer estimate of the true financial cost of disasters to developing-world agriculture, FAO compared decreases in yields during and after disasters with yield trends in 67 countries affected by (at least one) medium- to larger-scale events between 2003 and 2013. In the final tally, an estimated USD 70 billion of damage to crops and livestock occurred over that 10-year period. Asia was the most affected region with estimated losses of USD 28 billion, followed by Africa with USD 26 billion.

² Climate-smart agriculture integrates the three dimensions of sustainable development – economic, social and environmental – by jointly addressing food security and climate challenges. It comprises three main pillars:

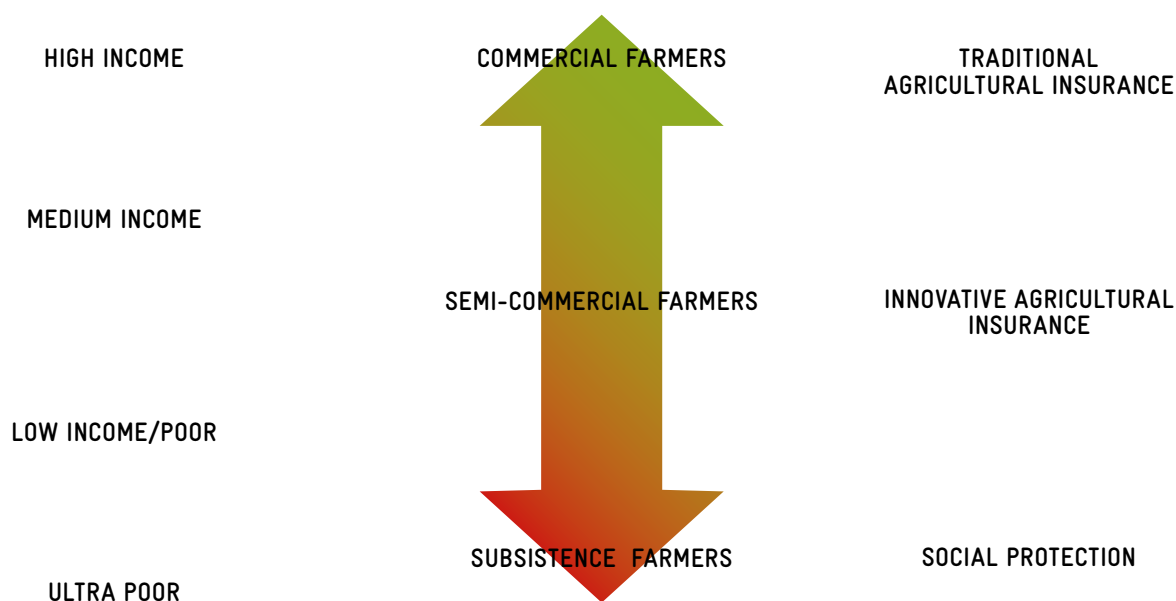
1. Sustainably increasing agricultural productivity and incomes.
2. Adapting and building resilience to climate change.
3. Reducing and/or removing greenhouse gas emissions, where possible.

- **Social safety nets:** Social safety nets are designed to assist citizens in distress, including farmers who have suffered from failed harvests due to external shocks. This can, however, lead to dependency on government support and reduce farmers' willingness to invest in insurance. That said, there are meaningful ways in which social safety nets and agricultural insurance can complement each other. For example, in Ethiopia the R4 initiative offers those farmers enrolled in the Productive Safety Net Programme (PSNP) the chance to purchase additional insurance and, thus, improve their ability to cope with drought (Oxfam America & WFP, 2016).

Formal and informal risk transfer. Risk transfer is a key component of agricultural risk management, and the best-known instrument of risk transfer is insurance. This option is not, however, available in many developing countries, so the use of informal risk transfer within families and communities is more common. These informal risk transfer mechanisms range from reciprocity obligations within families, villages, religious communities or occupations to semi-formal microfinance, rotating savings and credit, or state-contingent loan entities. Family- and community-oriented mechanisms may be better able to address problems around asymmetric information and transaction costs that plague formal insurance markets (Barnett, Barrett, & Skees, 2008). However, the highly systemic or covariate nature of many of the risks to agricultural production mean that, when larger disasters strike (e.g. droughts, floods) and the

whole community is affected, these informal risk transfer systems collapse. This is the main reason why formalised and financially stable agricultural insurance systems were established, as they can spread the risk over space and time.

Agricultural insurance is most needed by poor small-holder farmers. For GIZ, agricultural insurance is a tool to protect small-scale farmers when their harvests fail and provide them with the level of confidence they need to grow their business. These farmers are typically low-income/poor farmers who practice semi-commercial farming (i.e. farming is their main source of income and they consistently market a surplus to generate cash income). Small-scale, semi-commercial farmers often need insurance more than larger, commercial farms that apply better risk management practices and that have a stronger asset base to overcome a bad cropping season. These low-income, small-scale farmers are therefore the focus of attention. However, commercial agricultural insurance also has its limits: it is not a suitable product for destitute farmers (ultra poor) who only practice subsistence farming, (i.e. do not systematically engage in the marketing of products and do not generate any significant cash income to pay for premiums). It is therefore incumbent upon the government to provide a social safety net to cover poor subsistence farmers, in particular those farmers living in areas frequently affected by disasters.³ The majority of households in rural areas, particularly in sub-Saharan Africa, are still dependent on subsistence farming.



³ Currently, new approaches to social protection are being tested that involve insurance. For example, in Kenya the government is the policyholder in a macro-level social protection scheme for the most vulnerable pastoralists, where the latter are provided free, governmentally funded insurance protection for five Tropical Livestock Units (TLUs) per farmer.

Agricultural insurance covers farmers' production risks.

Farmers are faced with a range of risks that affect their health, assets and production. Agricultural insurance only covers risks that are related to agricultural production, be it crops or livestock.⁴ The costs associated with health or asset risks must be covered through other (micro-)insurance products – e.g. compensation for medical treatment costs requires access to health (micro-)insurance. However, in recent years the benefits of bundling different insurance products (health, asset and agricultural insurance) have become apparent, as it increases the value proposition of the insurance and reduces distribution costs for insurers. For example, Zambia's NWK Agri-Services bundles life insurance and weather-indexed insurance for soy and cotton farmers in Zambia (Mookerjee, 2016).

Insurance is not a replacement for sound business and risk management.

Insurance is a financial product for transferring risk after all necessary precautions have been taken to reduce risk exposure. As such, not all risks occurring in agricultural production can (and should) be covered through insurance. For example, biological threats that can be avoided through proper pest and disease management are commonly excluded from insurance contracts. It is also

important that the use of insurance does not promote unsound business behaviour among farmers – e.g. a farmer may choose to invest in unsuitable land simply because a part of the production risk is contained (moral hazard). A similar principle also applies to all other stakeholders. Financial institutions, for example, should not become more lenient in their credit appraisal simply because a potential customer has agricultural insurance. They are still required to individually assess the creditworthiness of each of their clients based on the overall viability of their business.

Pro-poor agricultural insurance worldwide. Understanding the necessity of providing formal insurance solutions to address the protection needs of farmers has prompted the emergence of agricultural insurance markets around the globe. Agricultural insurance in developing countries has grown rapidly over the last decade, with the number of policyholders reaching 198 million farmers in 2014 (Hess, Hazell, & Kuhn, 2016). However, 97.5% of these policies were sold in China and India alone, which tells us that agricultural insurance is not yet available in most countries and for the majority of farmers.⁵ An overview of insurance schemes around the world is presented in Annex A.

FEMALE AND MALE FARMERS MANAGE RISK DIFFERENTLY

The relevance of gender aspects in agricultural risk management has, to date, received little attention. However, several studies have identified significant differences in risk management approaches and insurance uptake between men and women. For instance, in randomised field experiments in Senegal and Burkina Faso, women were less likely than men to purchase agricultural insurance and more likely to invest in savings (Delavallade, Dizon, Hill, & Petraud, 2015). In Bangladesh female farmers were significantly more likely to be insurance averse than the male farmer respondents. A major reason for this was that women farmers expressed higher levels of distrust in the insurance distribution channel (Akter, Krupnik, Rossi, & Khanam, 2015). Therefore, to increase the uptake of insurance among female farmers, the distribution models need to be designed and tailored to their preferences.

⁴ Insurance is also needed for other segments of the **agricultural sector** such as aquaculture, fisheries and forestry. The aquaculture sector is exposed to natural hazards, such as storms, that can destroy assets. For these kinds of incidents, traditional asset protection insurance is required; however, certain production risks can also be covered through insurance. Swiss Re, for example, has developed a temperature index insurance for crab farmers in China (http://www.swissre.com/china/Weather_risk_management_on_the_rise_in_China.html). The **fisheries sector** is also affected by risks, but these are mainly related to the health of fishers and the condition of their assets (boats, equipment, etc.). Fishers therefore need non-agricultural products like health and asset insurance, which, as micro-insurance products, are not the focus of this paper. The **forestry sector** is also exposed to natural hazards, pest attack and fire. But as this agricultural sector is of little relevance for small-scale farmers, forestry insurance is not covered in this consulting approach.

⁵ The uptake of agricultural insurance is particularly prominent in China, which has over 160 million insured farmers. Different to most emerging and developing economies, the agricultural insurance boom in China is based on multi-peril crop insurance (MPCI).

Types of agricultural insurance products. The design of an insurance product varies according to the production and risk characteristics of farmers and their respective country context. Overall, indemnity products for smallholder farmers are relatively rare due to their high administration costs – someone must inspect the loss – and to the risk of fraud. Indemnity insurance is an insurance policy that pays out based on the actual economic losses incurred, up to a specified limit. More commonly, agricultural insurance for small-scale farmers is based on either a weather index or an area yield index. Weather index products provide farmers with payouts tied to the performance of a weather-based index, rather than indemnifying them for their actual crop losses. Examples of indices include rainfall measured at a weather station or by satellite, or vegetative growth measured by a satellite monitoring the normalised difference vegetation index (NDVI). Weather index products have the advantage that farmers receive the compensation in a timely manner without having to work through a complicated claims process. However, while index products avoid the need for costly (and often impossible) verification of damage, they have several shortcomings, one of which is basis risk – i.e. the difference between the performance of the index and the damage the policyholder actually experiences. With area yield index insurance, the payout is based on the realised (harvested) average yield of an area such as a district. The area yield is determined through crop-cutting experiments (CCEs), which help to build farmers' trust as they involve a physical inspection of several fields in one village (though not of all individual plots).⁶ The major advantage is that insurance payouts closely match the harvest losses experienced by the entire village (so its level of basis risk is lower than that of weather indices). The downside is, however, that CCEs can be a financial and administrative burden to insurers and can be exposed to corruption and malpractice. For example, the General Crop Estimation Survey (GCES) in India carries out more than 500,000 CCEs each year. To reduce the cost of the CCEs, GIZ is supporting the development of satellite-based crop growth monitoring for rice plants in eight Asian countries (GIZ, 2017h). Another challenge for this type of index insurance is that it requires historical area-yield data, which is often not available.

Typology of insurance schemes. The majority of agricultural insurance sold is micro-level insurance, meaning that small-scale farmers, households, or small business owners are the policyholders and receive the payouts in case the insured event occurs (direct insurance). In order to keep distribution and administration costs low, many of these insurance schemes apply aggregation models where financial institutions, farmer organisations or value chain actors act as intermediaries. The involvement of aggregators that are trusted by farmers also helps to boost the image of agricultural insurance in rural communities. A different product type is portfolio-level insurance where the insurance cover is sold to risk aggregators such as financial institutions. The direct benefits of this kind of portfolio insurance remain primarily with the risk aggregator. In the Philippines, GIZ has partnered with Munich Re to develop a product for the CLIMBS Life and General Insurance Cooperative to protect the loan portfolio of 1,600 cooperatives against losses from extreme weather events (GIZ, 2014g). Overall, there are very few examples of successful portfolio-level insurance schemes due to their inherent challenges. In particular, financial institutions are reluctant to insure such portfolios as they (a) are a major cost driver and (b) might send the wrong signals to these institutions' loan customers and thus undermine credit morale and (c) do not solve the main business problem, which is that the lender cannot continue to lend to defaulting or non-performing borrowers. Macro-level insurance is bought by national (and sometimes regional/provincial) governments as an element of their disaster risk financing strategy. The insurance pays out to government entities, which should then channel support to farmers affected by the insured event, such as a drought (indirect insurance). In the past, government support to suffering farmers was often slow, non-transparent and unreliable. Recently established insurance vehicles, such as the African Risk Capacity (ARC), have in-built procedures (contingency/operations planning) to ensure that relief reaches the right beneficiaries in a timely manner. For instance, Senegal's Ministry of the Interior has designed a four-step process to identify those due to receive ARC compensation. The methodology uses the Africa RiskView (ARV) software to identify affected districts for geographical targeting, and involves field missions and a household survey to select beneficiaries (Ministère de l'Intérieur et de la Sécurité publique du Sénégal, 2013).

⁶ Crop-cutting experiments (CCE) are used to determine the average yield of a predefined insurance area, usually for a number of villages. Through random sampling, different fields are selected in the insured area and for each field a randomly selected plot of a certain size (e.g. 10 m²) is harvested and the yield recorded. Based on the results from all the CCEs in one insurance area, the average yield is calculated and compared against the average yields of previous years.

COST-EFFECTIVE DISTRIBUTION OF AGRICULTURAL INSURANCE THROUGH AGGREGATION OF CUSTOMERS

The small commissions generated through the sale of agricultural insurance are not generally seen as strong incentives for insurance agents or other traditional forms of insurance distribution. The key to successful distribution is to identify aggregation models that do not incur additional costs for aggregators but do generate additional benefits besides commissions. The three main aggregation models that have shown promise for generating substantial reach are:

- **Financial intermediaries:** The financial performance of financial institutions in rural areas, in particular of microfinance institutions and farmer cooperatives, is intimately bound up with agricultural production conditions. If a portfolio is made up of rural borrowers who are insured against agricultural risk, the institution is less likely to become insolvent due to systematic default (Barnett, Barrett, & Skees, 2008). This provides an incentive for financial intermediaries to also sell insurance to farmers when the latter are applying for agricultural credit.
- **Input dealers:** As the commission generated through premiums is low, insurance agents have no strong incentive to travel through the countryside selling insurance to farmers. Input dealers, on the other hand, do not incur any additional cost (e.g. transport), as farmers visit them at their shops. Alongside generating a small additional income from the commission, selling insurance helps to strengthen dealers' business proposition to farmers. For example, in Kenya the Kilimo Salama insurance is sold through agro-input suppliers. Whenever farmers buy inputs, such as hybrid maize seed, they are given the option to insure the value of their purchase against drought risk. With this distribution model the product can be sold through the more than 8,500 agricultural input dealers in Kenya, which are located in proximity to farmers (Kerer, 2013).
- **Contract farming:** Similar to the input dealer model, contract schemes make use of existing business relations. For example, NWK AgriServices in Zambia is a contract farming buyer that offers its approximately 70,000 contract farmers a farming input package, including insurance. More than 75% of their farmers opt to buy the insurance. NWK finances the entire premium upfront and recovers it from farmers at the end of the season (Hess, Hazell, & Kuhn, 2016). No subsidies are involved, nor expensive agent network maintained as there are frequent interactions between the farmers and the contractor.

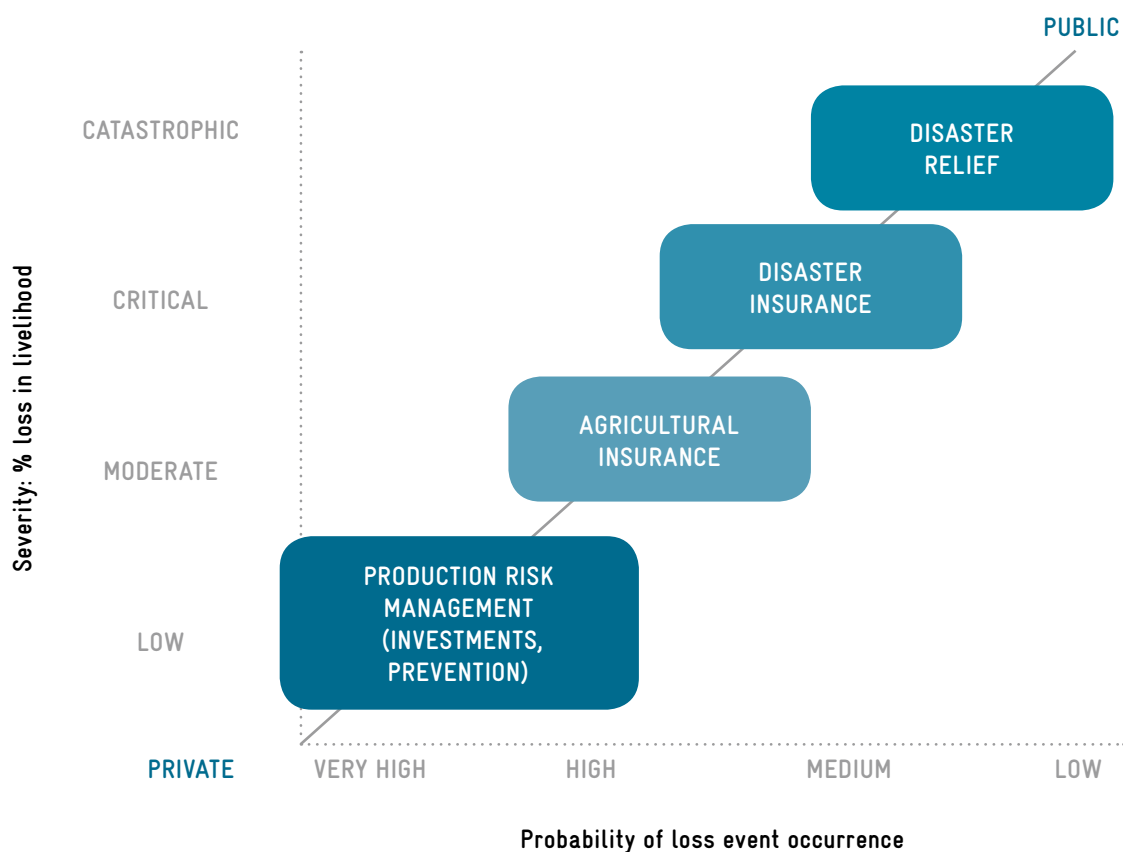
Consulting approach focuses on agricultural insurance.

This consulting approach deals with agricultural insurance only and not with climate risk insurance/disaster insurance.⁷ It is, however, necessary to harmonise interventions on agricultural and climate risk insurance. While agricultural insurance protects farmers against moderate to critical losses, disaster insurance provides payouts for more severe but less frequent events. For example, the ARC provides insurance for African governments to cover them against climate-related risks such as extreme drought.⁸ Since its inception,

the ARC has paid out USD 26 million to three countries in the Sahel Zone (in 2015) and USD 8.1 million to the Government of Malawi (in 2016) to support their response to droughts (African Risk Capacity, 2016a and 2016b). Farmers who receive government support after droughts may be unwilling to purchase insurance on their own. Therefore, it is important to design climate-risk initiatives that do not crowd out private-sector-driven agricultural insurance. The following graph shows how the different risk-financing instruments complement each other.

⁷ The term 'climate risk insurance' is misleading as there is no insurance against the climate. In the international context – for example, in the Initiative on Climate Risk Insurance (InsuResilience) – the term is used to describe disaster insurance/extreme weather insurance.

⁸ ARC is currently in the research and development phase for a climate-related outbreak and epidemic (O&E) insurance programme. It aims to insure an initial group of pilot countries against O&E risks in 2018.



SOURCE: ULRICH HESS

2.2 The impact of agricultural insurance on low-income farmers

Agricultural insurance protects livelihoods. Adverse production conditions lead to failed harvests, reduced output from animals, and the death of livestock. All these events have serious consequences on the livelihoods of farming households:

- Farmers rely on their own crop or husbandry production to satisfy their food needs. Reduced yields lead to lower food availability and result in undernutrition or malnutrition.
- Farmers sell a share of their production to traders or markets to earn income that is needed to pay for health, education and other household necessities. A small harvest or reduced animal output results in financial losses and farming households are forced to reduce their expenditure by, for example, decreasing their spending on health or education.
- Farmers often invest a substantial share of their wealth in livestock, which are used as a buffer during difficult times. The death of livestock causes financial losses to farmers and reduces their general ability to cope with shocks (Hess, Hazell, & Kuhn, 2016).

Agricultural insurance helps to stabilise incomes and ensures that those suffering financial loss have sufficient funds to cover their household expenditure. The insurance payment is also needed to restart production in the subsequent growing season. A three-year study (2010-2012) in Ghana found that, on average, farmers with rainfall-indexed insurance earned USD 285 more and had post-harvest assets worth USD 531 more than those of uninsured farmers (Karlán, Osei, Osei-Akoto, & Udry, 2012). Drought insurance products also showed positive effects in rural Kenya where insured households were, on average, 36 percentage points less likely to anticipate drawing down assets, and 25 percentage points less likely to anticipate reducing meals upon receipt of a payout (Janzen & Carter, 2014).

⁶ The insufficient flow of investment is also influenced by a range of other factors such as farmers' lack of know-how, lack of market access, or difficulty in accessing agricultural credit. This implies that there is often a need to tackle various agricultural issues through a coordinated (sector-wide) approach.

Agricultural insurance leads to improved investment decisions. Farmers' fear of losing their money if production fails, deters them from investing in agricultural production.⁹ The most common risk management strategy applied by farmers is risk diversification, often achieved by growing different crops on small plots of land. But diversification strategies prevent farmers from specialising in the most profitable crops, which means they essentially trade off earning a higher income for a reduced exposure to risk. With agricultural insurance, farmers can invest with more confidence because the risks associated with their business are reduced. For example, among the farmers in northern Ghana who had access to agricultural insurance, risk-taking and investment increased (Karlan, Osei, Osei-Akoto, & Udry, 2012). A study on tobacco farmers in Fujian province in China concluded that farming households with agricultural insurance had more confidence in their farm enterprise and had greater incentives to invest. As a result, land cultivation increased by 22% and production by 23% compared with households in control regions (Cai, 2012). Having access to insurance may also help farmers to secure agricultural loans. Financial institutions are concerned that farmers may not be able to repay loans if the harvest fails. Insurance can therefore help to make farmers more attractive clients for these institutions.

2.3 Drivers of the recent growth of agricultural insurance

Agricultural insurance has witnessed substantial growth in recent years. The key drivers for this are as follows:

The increased importance of disaster risk management in international debate. In the last 20 years alone, over 10,832 natural disasters have occurred worldwide, affecting a total of 6.3 billion people with damages estimated at USD 2.7 trillion (Centre for Research on the Epidemiology of Disasters, 2017). The poor, rural population has been most severely affected. For countries, the loss of agricultural production presents two serious problems: (1) farmers lose their income and remain trapped in poverty and (2) lost production threatens the food security of the nation. Both aspects are of high importance for the stability of a country, prompting policy-makers to invest in disaster risk reduction, disaster management and disaster risk financing. In recent years, the Hyogo Framework for Action 2005–2015 and the present Sendai Framework for Disaster Risk Reduction 2015–30 have both driven interest and investment in this

area, and have made policy-makers increasingly aware of the importance of (agricultural) insurance as one element within the disaster risk management framework.

The debate on climate change. The international debate on climate change has also contributed to the heightened worldwide interest in agricultural insurance. Changing weather patterns have highlighted the importance of making agriculture more resilient and climate-smart. In addition, climate change is expected to disrupt traditional risk avoidance and coping mechanisms at the household and community levels, increasing the need for formalised insurance solutions. An increase in weather fluctuations, however, also leads to increased costs for agricultural insurance and provides an argument for increased support by governments and donors (Hess, Hazell, & Kuhn, 2016). The climate change debate has opened up new funding sources, such as the International Climate Initiative (IKI) of Germany's BMUB, for developing agricultural insurance.

The emergence of disaster/climate risk insurance. One of the issues highlighted in the international debate on climate change is the need to be better prepared for natural calamities. National governments therefore want to be in a position to provide relief to their citizens in a timely manner. To this end, different regional climate insurance vehicles have been established such as the ARC, the Caribbean Catastrophe Risk Insurance Facility (CCRIF) and the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) (BMZ, 2015). In 2015, at the G7 summit in Elmau, Germany, the G7 Climate Risk Insurance Initiative (InsuResilience) was launched with the aim of reaching an additional 400 million poor and vulnerable beneficiaries with direct or indirect climate risk insurance by 2020 (G7, 2015).¹⁰ These initiatives have stimulated political debate on the responsibilities of national governments and individual farmers with regard to weather risk in agricultural production.

Strong fiscal support for agricultural insurance. In parallel with regional initiatives on climate risk insurance (e.g. ARC, CCRIF and PCRAFI), national governments have been providing substantial financial support to agricultural insurance schemes. The provision of premium subsidies in China and India has been a major contributing factor to the increased numbers of policyholders in those countries. This development has been helped by the fact that premium subsidies are admissible under Annex 2 of the WTO Uruguay Round Agreement on Agriculture. Premium subsidies

⁹ With its focus on transnational/regional initiatives such as ARC, CCRIF and PCRAFI, InsuResilience has set indirect insurance schemes as a strategic priority. This is reflected in the initiative's goals, which target 300 million additional beneficiaries of indirect insurance and 100 million additional beneficiaries of direct insurance.



therefore also represent an opportunity for governments to provide financial support to their farmers without violating international trade agreements.

Advances in remote sensing and mobile technologies.

Technological progress has been an important factor driving the appearance of many new insurance schemes in recent years. Satellite-supported remote sensing is now sufficiently reliable to monitor weather parameters such as rainfall. Therefore, the fact that many countries lack sufficient weather stations is no longer an impediment to the introduction of weather-index insurance. The cost-saving and efficiency gains derived from mobile technologies present major opportunities at all stages of the product cycle (from data collection for product development purposes, to client enrolment, administration and claims payment). With mobile money, premium payment and claim payouts can be made faster and more convenient for farmers and less costly for insurers.

Increasing focus on and growth of inclusive insurance markets.

The market for pro-poor insurance has been very dynamic in recent years. Supervisory authorities are increasingly putting in place regulatory or policy approaches to increase access to insurance. Many governments started out with dedicated micro-insurance regulatory frameworks, but are now refining how they target excluded and underserved groups in their jurisdictions, which includes smallholder farmers. Insurers have realised the business potential of providing tailor-made insurance products to low-income customers. Many of the lessons learned from micro-insurance also apply to agricultural insurance (e.g. the need for simple products, lean distribution models and increased insurance awareness).

2.4 Challenges in providing agricultural insurance for low-income farmers

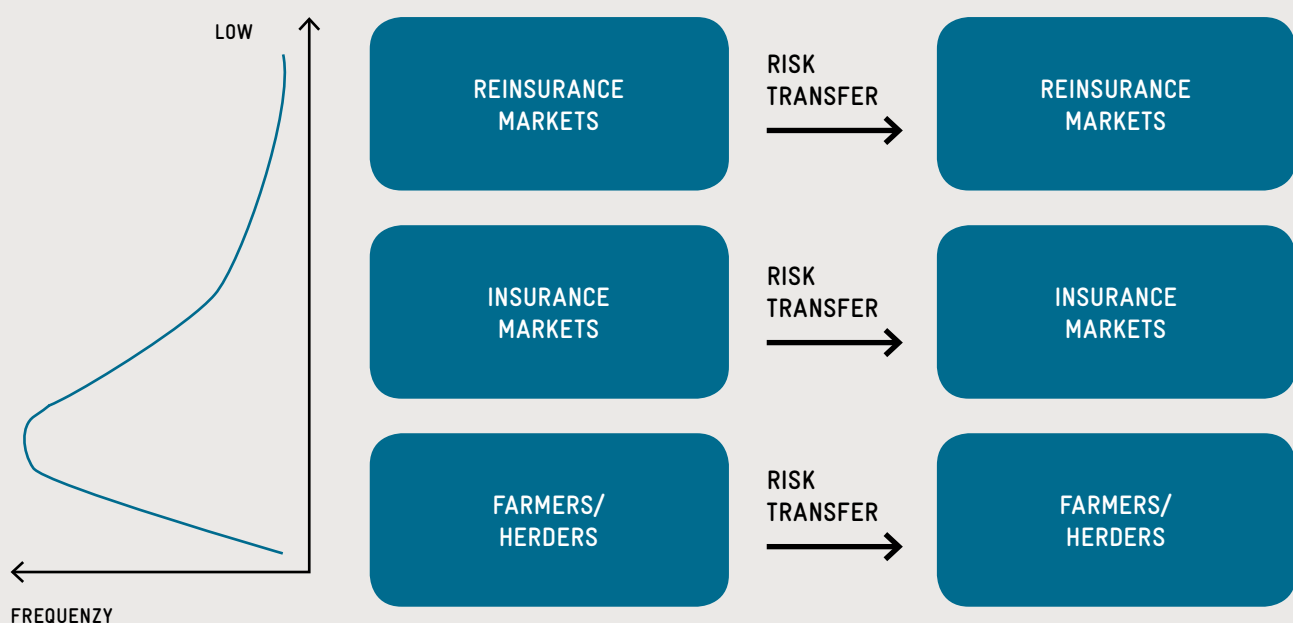
Despite all the positive developments, agricultural insurance is still in its infancy or early stages in many countries. Even in countries with sizeable agricultural insurance markets, the growth of the sector still faces many challenges:

- (1) Unconducive policy and regulatory environment. Many countries lack a clear vision on the role of agricultural insurance within the national development strategy.

Without a clear framework that describes how agricultural insurance is embedded in the national disaster risk financing strategy, there is a risk that social safety net programmes end up crowding out (commercial) agricultural insurance. In the absence of social safety nets, governments often try to offload their social obligation to support their citizens in times of distress onto the insurance sector. The public sector often lacks a clear understanding of which layers of risks are the responsibility of the individual farmer and which fall to the state. Yet, to be able to decide whether fiscal support for agricultural insurance is justified, this understanding is necessary.

Agricultural risk financing relies on optimally layering agricultural risks:

- The **bottom layer of risk** includes high-frequency, low-consequence events that affect farmers, such as unseasonal rainfall that leads to a small reduction in yields. This layer of risk should be retained by farmers.
- The **middle layer of risk** includes less-frequent, more-severe risks that affect many farmers/herders at the same time, such as a minor drought. The insurance industry has demonstrated its ability to cover these losses.
- The **top layer of risk** includes low-frequency, high-severity risks such as extreme drought. These catastrophic risks require reinsurance and, in addition, may need to be backed up with other risk financing instruments from government, such as catastrophe funds or contingent lines of credit. For example, in Mongolia's index-based livestock insurance scheme, the government covers losses exceeding a specific threshold and acts as the reinsurer of last resort for the insurance companies selling the index product (World Bank, 2016). This is an example of a 'smart subsidy' that helps to keep insurance premiums affordable for low-income households.



SOURCE: WORLD BANK

In addition, without a policy dialogue between government actors and insurance companies, there is a lack of clarity on the roles that the different actors can play in the promotion of agricultural insurance. In some countries, the public sector directly engages in market activities instead of focusing on (a) creating a conducive policy and regulatory framework, (b) providing public goods, in particular data and financial literacy/insurance awareness, (c) providing support for risk financing (e.g. by facilitating access to reinsurance or acting as reinsurer of last resort) and (d) strengthening market infrastructure (e.g. through capacity building or by establishing a technical support unit that works on product design and actuarial pricing) (World Bank, 2015).

Furthermore, in countries where the government provides premium subsidies to state-owned insurance companies, there is no level playing field and private sector competition is crowded out. Without competition, state-owned insurers have little pressure to innovate and may not tailor their products to meet small-scale farmers' needs.

Only a few countries have established a regulatory framework for agricultural insurance. In most countries, the regulator permits the introduction of agricultural insurance schemes on an ad-hoc basis. However, to allow the agricultural insurance market to grow and to ensure financial stability, a clear framework for these products must be established. The catastrophic nature of insured events presents a serious financial threat to insurance companies once their agricultural portfolio reaches a certain size.

Many other regulatory aspects apply to all micro-insurance products aimed at low-income farmers and cover, for example, distribution models and consumer protection. The regulatory framework must allow insurance companies to make use of low-cost distribution models able to reach a large number of small-scale farmers in remote areas. Regulations must also be put in place to ensure that low-income customers with limited literacy skills are provided accurate and easy-to-understand product information during the sales process. In addition, in most countries farmers have no formal way (or are not made aware of the process) to lodge a grievance with insurance companies, for example when products are mis-sold. The lack of appropriate regulatory frameworks for micro-insurance puts farmers at risk.

- (2) **Insufficient provision of public goods – data and insurance literacy.** Access to reliable data is an essential precondition for the evolution of sustainable agricultural insurance. However, the availability and accuracy of weather, production and household data is often limited. Without a sound data basis, it is very difficult to develop a suitable policy framework and correctly priced insurance products. Lack of data is often due to insufficient infrastructure, such as weather stations, but may also be the result of missing or badly designed data capture processes, such as those operated by agricultural extension services. When institutions in partner countries, such as meteorological offices, lack the right know-how, they are not able to benefit from technological innovations like satellite-supported remote sensing. It is not just data capture that presents challenges, but also data management: many institutions have neither the technical capacity nor the data infrastructure to deal with the large quantities of data involved in agricultural insurance.

Insurance penetration is low in developing countries: only 6.2% of people working in agriculture worldwide purchase insurance against climate-related risks; in sub-Saharan Africa, the figure is 6.5% and in South Asia only 5.7% (GIZ, 2015). A key reason for these low demand and penetration rates is behavioural ambiguity about insurance – i.e. farmers do not understand or trust insurance, especially when it is new (Hess, Hazell, & Kuhn, 2016). Farmers with a low level of understanding of insurance have unrealistic expectations about how insurance products can improve their lives. There is limited awareness of the need to complement insurance with other risk management activities aimed at mitigating risks or increasing resilience. Moreover, farmers feel that it is the government's responsibility to support them during hard times and that they are not obliged to make their own preparations for managing difficult periods. Building trust and raising awareness is therefore key if agricultural insurance is to be a success.

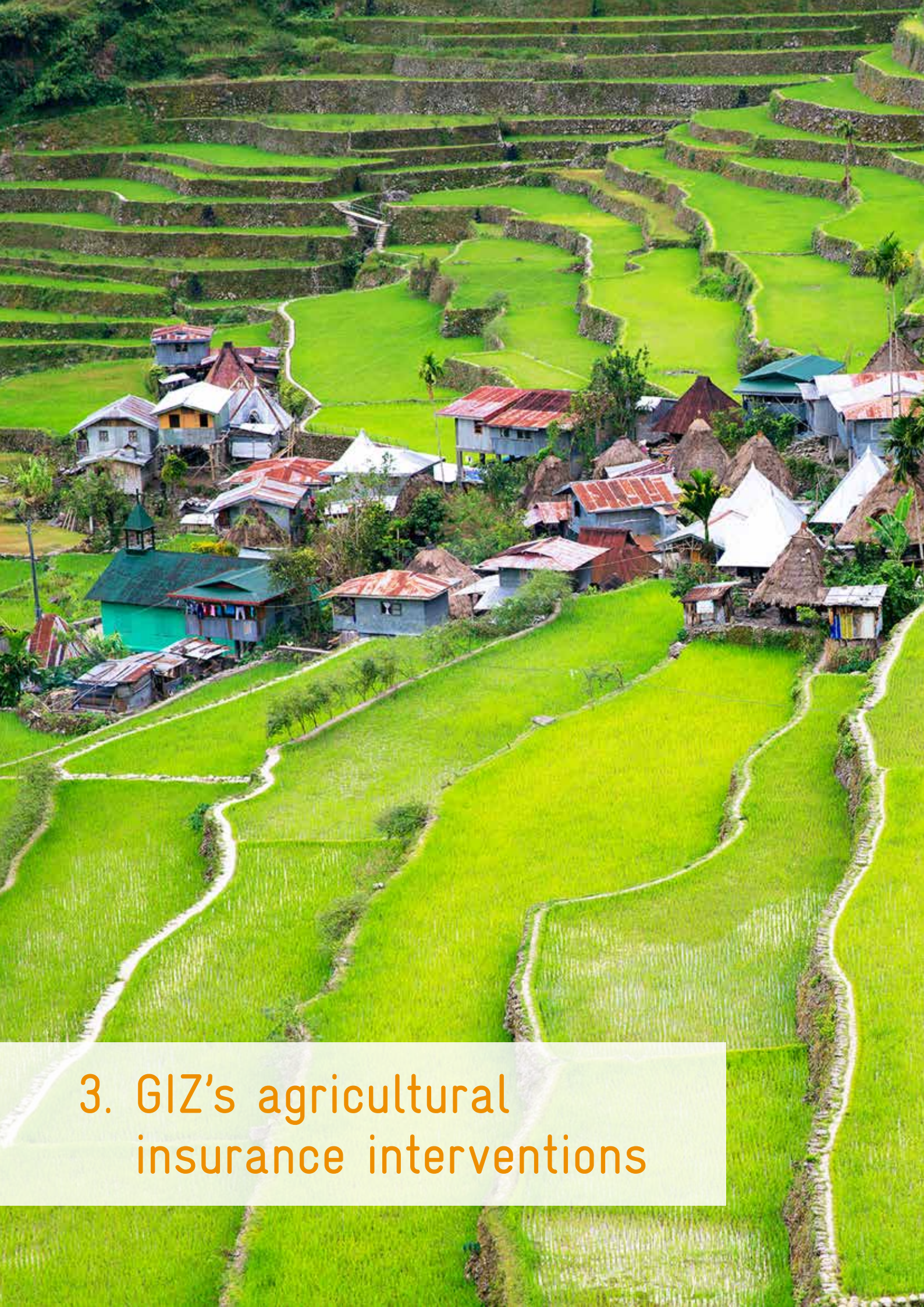
- (3) **Lack of sustainable business models.** Insurers struggle to turn agricultural insurance into a profitable venture. Sometimes this is due to internal factors, as companies may perceive agricultural insurance for small-scale farmers as a corporate social responsibility initiative and, as such, fail to apply proper business principles. Similarly, many cases exist of pilot projects that were initiated purely for research purposes rather than for business. These initiatives invariably fail as they are not supported by any long-term sustainability strategy.

There are also exogenous factors that make the development of a viable business strategy difficult. The use of traditional distribution mechanisms is not a viable business model, as agricultural insurance only generates small commissions for insurance agents and thus does not provide a big enough incentive to encourage agents to actively promote the product. The remoteness of farmers and the small premiums for agricultural insurance require enrolment, administration and claim-settlement processes similar to those of the micro-insurance business. Insurers often lack the know-how to develop these kinds of cost-effective distribution and administration models. Without a viable business strategy, products fail to reach the scale required to spread the risk and break even. The scalability of an insurance scheme is also a prerequisite for accessing international reinsurance markets. Small-scale pilot projects fail to attract reinsurance partners and cannot expand as their risk exposure may become a threat to the financial stability of the primary insurer.

In addition, there is a lack of agricultural insurance products that provide payouts matching the actual losses that farmers have suffered in their fields. A key reason for this is the limited capacity for product development in various areas:

- a. Insurance companies often lack the agronomic know-how required to calculate the impact of different growing conditions on yields.
- b. Expertise in different crop insurance product types is limited. The concept of index insurance or area-yield insurance is not well known in many countries, and experience of using indemnity insurance is often limited to just a few large-scale farmers. Insurance companies lack the expertise to design claim adjustment processes able to deal with large numbers of small farmers.
- c. Actuarial capacity is not available at the insurer (and, sometimes, the country) level. Actuarial expertise is essential for developing products that adequately reflect the risk and cost of insurance, and for ensuring the sustainability of insurance schemes in the long term.

Given the above capacity issues, insurers struggle to get key product design features right, such as the level of coverage and frequency of payouts. Many insurance products on the market have low premium levels due to farmers' low willingness to pay and therefore only offer low levels of cover. Consequently, when farmers receive insignificant payouts, they tend not to renew their policies. In addition, insurers tend to design products that pay out frequently (albeit mostly small amounts) in order to retain customers. The inclusion of high-frequency, low-impact events may help with marketing, but it makes products expensive and does not provide good value for the customer. Finding the optimal design is a very challenging process that requires skilled human resources at insurance companies. Insurers, in particular those in the private sector, are often reluctant to invest in product development because of the first-mover problem. Here, the high initial investment costs involved in the research and development of agricultural insurance products might not be recouped given the ease with which competitors can replicate these products if they prove profitable to sell.



3. GLZ's agricultural insurance interventions

3.1 Objective (outcome) of GIZ interventions

Objectives. The objective of GIZ interventions in this area is to increase low-income/small-scale farmers' access to and use of consumer-oriented agricultural insurance in order to protect their livelihoods and enable agricultural investment.

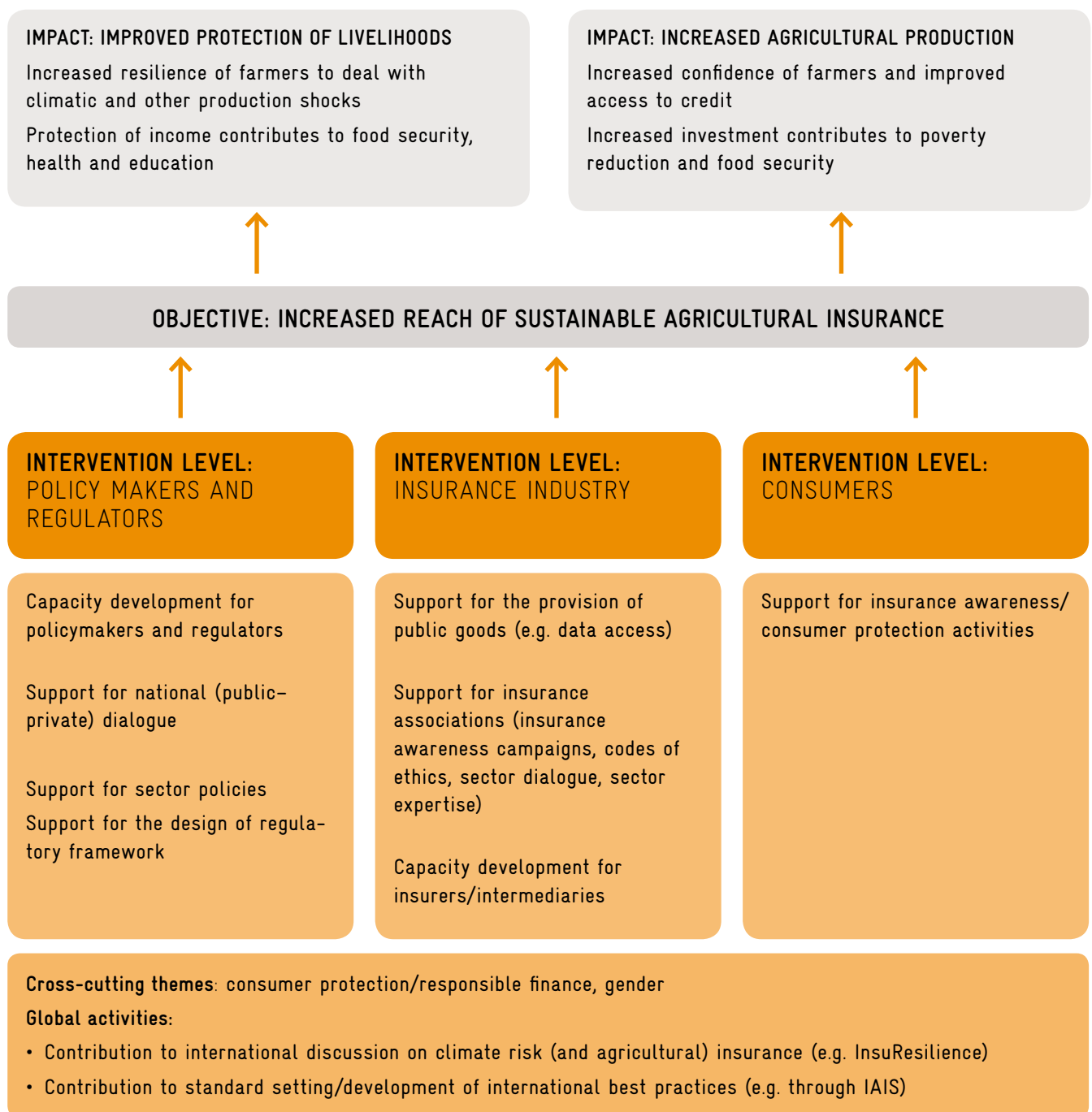
Objective of GIZ interventions and their link to the SDGs. The developmental impact of increased agricultural insurance coverage is that farmers' incomes are protected and farmers are better able to optimise farm investment. Agricultural insurance contributes to SDG 1 (eliminating extreme poverty) by stabilising incomes and ensuring that farmers do not fall back into poverty after suffering a shock. Agricultural insurance also helps farmers to increase their production to meet the food needs of growing populations – i.e. to ensure greater food security (Klapper, El-Zoghbi, & Hess, 2016). Insured farmers can invest with confidence as the downside risk of their farm business is contained. A positive side effect of insurance is that default risk for financial institutions is reduced, which, in turn, leads to a greater flow of investment in rural areas. In addition to these investment impulses, agricultural insurance also contributes to achieving SDG 2 (reducing hunger and promoting food security) and SDG 3 (achieving good health and wellbeing). After suffering an external shock, farmers receive a payout and have sufficient financial resources to cover their essential household expenditure, such as food or health care costs. By mitigating the effects of extreme weather events, agricultural insurance contributes to achieving SDG 13 (take urgent action to combat climate change and its impacts) as it strengthens climate change resilience. Agricultural insurance also plays a role in promoting gender equality (SDG 5). Field experiments in West Africa and Kenya show that insurance helps female farmers to increase their yields and better manage food insecurity and shocks (Klapper, El-Zoghbi, & Hess, 2016).

3.2 GIZ's multi-level financial systems approach to agricultural insurance

Multi-level approach. Challenges for the development of agricultural insurance have been identified at different levels: the policy environment, the regulatory and supervisory framework, the supporting infrastructure, the insurance companies and their distribution partners, and the farming community. GIZ applies a systemic multi-level approach to identify and tackle challenges at each level of the market:

- GIZ interventions work with **insurance supervisors and policy-makers** to develop policy and regulatory frameworks that provide clear guidance and support on how to grow sustainable agricultural insurance markets.
- GIZ works with the **insurance industry** to promote responsible finance principles and ensure that farmers' interests and insurers solvency are protected. GIZ interventions help to build the capacity of insurance companies and brokers to develop products that provide adequate and affordable cover for agricultural production risks. Products must be SUAVE: simple, understandable, easy to access, valuable and efficient, which means easy and timely insurance settlement and payouts. GIZ projects foster innovation, for example by helping partners to make use of recent developments in science and technology, such as satellite-generated weather or yield data. GIZ interventions also work with aggregators, such as agribusinesses, to strengthen their capacity in order to ensure that insurance products are made available to farmers in rural areas in a cost-efficient way.
- GIZ projects help **consumers**, mainly farmers, to understand and properly use agricultural insurance and impart knowledge that enables agricultural producers to make informed decisions about the use of farm insurance.

The following figure describes the multi-level approach and the major actors.



Link to global knowledge networks. A key strength of GIZ is the way it combines a strong in-country presence, support from the competence centre at its headquarters, and close ties to international partners (e.g. IAIS) and initiatives (e.g. InsuResilience). With this institutional set-up, GIZ is well positioned to facilitate the international sharing of good practices and mutual learning experiences. The last 10 years

have witnessed major innovation in the field of agricultural insurance. The competence centre, based at GIZ's headquarters, ensures that GIZ interventions are implemented in line with international good practices. This structure also makes it possible to feed lessons learned from GIZ interventions back into the international discussion and shape standard-setting on agricultural insurance.

3.3 Intervention areas

GIZ interventions tackle the three key challenges identified for agricultural insurance: (1) uncondusive policy and regulatory framework, (2) insufficient provision of public goods (in particular, data and insurance literacy), (3) lack of sustainable business models.¹¹ The main activities for each of the three intervention areas are presented below:

3.3.1 Activity area 1: Policy and regulatory framework

IMPLEMENTATION PARTNERS:

Ministries and government bodies, regulators, insurers and insurance associations, the private sector, and civil society.

OBJECTIVE:

To develop policy and regulatory frameworks that provide clear guidance and support on how to grow sustainable agricultural insurance markets. GIZ interventions foster the development of **enabling policy frameworks** which built on stakeholder consensus that (a) define the goals of agricultural insurance within the development agenda of the country and its linkages to other development strategies (e.g. social safety nets, disaster management and financing, agriculture), (b) define the roles of the different stakeholders and the division of labour to advance agricultural insurance, and (c) draw up budgets for the financial and technical resources required to achieve the policy goals. GIZ interventions also help to establish **condusive regulatory frameworks** that (1) safeguard financial sector stability, (2) protect consumers and (3) enable the provision and scaling up of sustainable agricultural insurance for smallholder farmers (e.g. through suitable distribution models).

OUTPUTS AND ACTIVITIES:

Agricultural insurance is a complex – and, in most countries, comparatively new – topic that involves a broad range of stakeholders. The institutional linkages between the different government actors are weak and little dialogue takes place. As a result, policy-makers within a country do not share a common vision on how agricultural insurance fits into the overall development agenda and how it can complement existing policies and strategies. GIZ creates the space (e.g. by running conferences or workshops) for an **active dialogue between the regulator and other government institutions and ministries**. This dialogue is needed to find the common ground between government actors with different mandates: for instance, the core objectives of the regulator are financial sector stability and policy-holder protection, whereas the ministry of agriculture has a more promotional role. By facilitating this dialogue process, GIZ helps to highlight potential areas where cooperation could be beneficial or where there may be potential conflicts of interest between different stakeholders, and it helps to build a consensus on the policy and regulatory framework of the agricultural insurance sector.

In addition, there is often little trust between the public and private sectors. As an impartial actor trusted by both sides, GIZ is in a good position to **create a condusive environment for dialogue between the public and private sectors**. GIZ helps to kick-start the policy and regulatory dialogue by organising workshops, dialogue events and conferences that enable stakeholders to share their views and establish communication channels between the various actors. Through such dialogue insurance companies have an opportunity to show how current policies and regulations limit market opportunities – e.g. when a regulation only allows for insurance staff or agents to sell insurance and forbids alternative distribution models that would enable insurers to reach small-scale farmers in remote areas.

GIZ also plays an important role in formalising dialogue platforms and **structuring the policy-making process** – e.g. by providing technical advice on developing terms of reference for public-private taskforces or working groups for agricultural insurance. Institutionalising processes is an important step, as it ensures stakeholders are given the

¹¹ GIZ projects usually focus on one to three main intervention areas which were ranked as priority challenges during the project preparation mission(s).

mandate they need to draft policy papers for enactment by government in the form of laws or regulations. Having a formal mandate is important to ensure that national budgets ensure the implementation of policies.

Developing an enabling policy framework and a conducive regulatory environment requires well-informed and competent actors. GIZ helps to **build the capacity of policy-makers and regulators** on agricultural insurance either through workshops, field visits and training organised in the partner countries, or by facilitating participation in international training or conferences. GIZ has a close working relationship with the International Association of Insurance Supervisors (IAIS), developed through its Access to Insurance Initiative (A2ii). GIZ maintains a close relationship with insurance supervisors to understand their needs in terms of capacity building on inclusive insurance development, and it runs various platforms that facilitate mutual learning between regulators around the world and foster peer-to-peer learning at the global, regional and local levels. Dissemination of international good practice is an important element of this capacity building.

A key constraint for effective policy-making is partner countries' weak data and information bases. GIZ **facilitates the research and data analysis** needed for evidence-based policy-making, advising its partners on structuring the analysis process and on which methodologies to adopt (e.g. market segmentation or the quantification of risk factors).

GIZ also **provides advice on policy and regulatory aspects** through its staff or external experts. As a member of task-forces and working groups, GIZ has a direct say in the policy process. In this role GIZ promotes its core principles concerning agricultural insurance, such as the need for strong government support in areas like data provision or insurance education, or the use of smart and non-disruptive subsidies. Through its staff and external experts, GIZ also provides a broad range of advisory inputs to shape the development of regulations in a manner that balances three main objectives:

- (1) Financial sector stability – GIZ contributes to safeguarding the stability of the financial sector by providing advice on the risk capital required for agricultural insurance and suitable accounting principles that reflect the risk exposure of agriculture.
- (2) Consumer protection – Thanks to its ongoing partnership with the IAIS through the A2ii, GIZ has a wealth of knowledge on regulations that help to protect the interests of low-income consumers, such as the need for simple wording in insurance contracts or for the provision of product information suited to farmers' literacy levels.
- (3) Distribution models – GIZ draws on its vast experience with micro-insurance to develop regulations on distribution models that are most likely to reach low-income farmers, such as those involving microfinance institutions or actors in the agricultural value chain.

Country examples for projects aimed at developing an enabling policy framework:

- » In Kenya GIZ was instrumental in kick-starting policy dialogue on agricultural insurance by organising workshops, dialogue events and conferences. GIZ also contributed to the policy-making process by gathering data on farming risk and conducted a situational analysis that defined the need for agricultural insurance. The product of these activities served as the starting point for the policy dialogue in the country (GIZ, 2014d; GIZ, 2014h).
- » In Peru GIZ contributed to the national debate on an appropriate policy and regulatory framework by commissioning a study on international experiences with legal and regulatory frameworks for weather-index insurance. Furthermore, since 2015, Peru's regulatory authority, SBS, has been organising a bi-monthly Public-Private Dialogue Forum. The forum acts as a platform for promoting discussion and reaching agreement on the implementation of the risk transfer system in the agricultural sector. It also supports and strengthens the coordination of key public and private sector actors in order to jointly design implementation processes for the risk transfer system under the framework of the National Strategy for Financial Inclusion (GIZ, 2014h).

- » In Ghana GIZ helped to establish a joint public-private steering committee (SC) tasked with coordinating the support for agricultural insurance and shaping the policy support for the sector (GIZ, 2017i).
 - » In China GIZ supported the policy-making process by conducting household surveys that showed the impact of risk on farmer income. This analysis provided the basis for the Chinese Government's decision to financially support an agricultural insurance scheme (GIZ, 2017c).
 - » In Zambia GIZ supports the development and scale-up of sustainable agribusiness-based weather and life insurance packages for farmers (50k farmers out of 72k farmers opted to buy the insurance) (Hess, Hazell, & Kuhn, 2016).
 - » In India GIZ helps to design index based natural catastrophe insurance for farm labourers and shopkeepers.
 - » In the Philippines GIZ advised on the creation of a level-playing field for both public and private insurers and co-authored a new policy and regulatory framework that helped to open up the market (GIZ, 2017d).
 - » In Nepal GIZ supported the regulator, the Insurance Board, on formulating its micro-insurance directives, which regulate on products including crop, cattle and poultry insurance.
 - » In Grenada, Jamaica and Saint Lucia GIZ facilitated a dialogue that helped regulators to understand how existing regulations on distribution models negatively impacted on the outreach of insurance (GIZ, 2014c).
 - » GIZ provides secretariat and advisory support to the Mutual Exchange Forum on Inclusive Insurance (MEFIN Network), a platform for peer-to-peer learning among policy-makers and insurance regulators in seven Asian countries (Indonesia, Mongolia, Nepal, Pakistan, the Philippines, Thailand and Viet Nam).
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3.3.2 Activity area 2: Access to public goods – data and insurance literacy

IMPLEMENTATION PARTNERS:

Policy makers, regulators, insurers and insurance associations, ministries and government bodies, meteorological agencies, the private sector, academia.

OBJECTIVE:

To improve the provision of public goods that help to grow markets for agricultural insurance. GIZ interventions improve access to data to support (a) evidence-based policy-making, (b) insurance product development and (c) the monitoring of insurance performance. GIZ also helps to protect consumers by raising low-income farmers' awareness about agricultural insurance and by increasing their knowledge of insurance products so that they are able to make informed decisions.

OUTPUTS AND ACTIVITIES:

Data: Agricultural insurance is a business transaction that relies on sound data. Creating historical records for weather, production and other factors presents a technical challenge and involves cost. This leads to high development costs for agricultural insurance, which, in turn, results in high premium rates for farmers. Also, the cost of collecting data to measure the performance of insurance products (e.g. rainfall for weather-index products or production for area-yield products) is significant and is reflected in higher premium rates. As part of its **policy advice**, GIZ raises government stakeholders' awareness of the importance of committing financial and technical resources to data generation and management.

GIZ supports its partners by performing an **analysis of their data infrastructure**. Based on a sound situational analysis, GIZ advises its partners on the best way to improve data collection. Data collection systems must be tailored to the context of the partner countries and may range from low-cost labour-intensive methods (e.g. through ministry of agriculture extension staff) to high-tech applications using mobile or satellite technologies. GIZ finances the pilot testing of new data capture tools and technologies. Financing physical infrastructure on a large scale, such as weather stations, falls somewhat outside the remit of GIZ's services. However, in certain cases GIZ may be in a position to financially contribute to an investment of this kind.

In conjunction with data generation arises the issue of appropriate data storage and management systems. Data must be processed and analysed properly if it is to generate information that can be used for policy-making or product development. GIZ provides both technical advice and investment support to **strengthen data management and data analysis**. GIZ interventions help partner institutions to set up the IT infrastructure needed for the timely processing and analysis of weather or production data.

GIZ plays a major role in **building the capacity** of its partners so they can make proper use of new data capture and management technologies, and can process and analyse the data. GIZ organises training for meteorological agency staff on how to install and maintain weather stations and process their data. Other partners, such as agricultural research institutes, receive support on conducting fieldwork, processing and interpreting satellite-based information, and running crop simulation models.

Data is a politically sensitive topic: governments are concerned about what information is released into the public domain and which institutions have the authority to release data. GIZ commissions studies to develop **data-sharing protocols** that respect both the public sector's concern about the political sensitivity of data and the private sector's scepticism towards data generated by government bodies.

Data is not only required for product development and roll-out, but also to allow policy-makers to make informed decisions. To support evidence-based policy-making, GIZ advises on the **design of data systems that feed into policy processes**. The data is then used to determine appropriate policy support for agricultural insurance and, beyond this, may be used for other policy purposes such as agriculture sector planning or post-disaster relief.

Financial literacy and insurance awareness: The ultimate goal of increasing agricultural insurance awareness and literacy is to achieve behavioural changes, which are ultimately reflected in a higher uptake and better use of insurance products. Behavioural change is a long-term process that requires a significant amount of financial and technical resources. **GIZ acts as a facilitator**, bringing the regulator, policy-makers and insurance companies together to develop a clear and shared understanding of what it takes to achieve this goal and what the roles of each actor are. Regulators and insurance associations play an important role in raising general awareness about agricultural insurance products, and individual insurers have a moral obligation to integrate consumer education into their sales process.

Drawing on its experience in promoting financial literacy for microfinance and micro-insurance, GIZ provides technical advice to the public sector on the **design of agricultural insurance awareness and literacy campaigns**. During the design phase the partners decide on the target group, set educational targets, select channels and media, choose implementation partners and prepare the budget. A key factor for the success of awareness campaigns is the decision on cost-effective ways to reach large numbers of farmers.

Apart from supporting awareness campaigns targeted at the general public, GIZ plays an **advocacy role, encouraging insurers to commit to incorporating elements of consumer education in their marketing processes**. Farmers should be able to take an informed decision on whether it is beneficial for them to purchase insurance based on their risk exposure and their risk management options. This requires that insurers not only talk about the benefits of their products but also highlight their limitations, and that they educate farmers on the need to manage their risks proactively.

GIZ assists its public and private sector partners with the **design of education materials and tools**. GIZ staff and consultants have access to a large pool of tried-and-tested high-quality tools and materials for adaptation to the local cultural context. Based on these tools, GIZ advises its partners how best to disseminate a broad range of educational material (e.g. through the radio, television, text messaging or direct interactions) as part of a multi-pronged awareness-raising strategy.

GIZ also **fosters innovation in awareness raising**. Making use of modern technology is an effective way to keep costs low, given the large number of farmers who need to be reached in remote areas. GIZ supports its partners on developing and pilot-testing interactive training approaches and on analysing learning experiences from innovative training approaches.

GIZ also **develops training materials and facilitates training for insurance intermediaries** aimed at raising their capacity to provide farmers with accurate and comprehensible information on agricultural insurance. GIZ designs and conducts train-the-trainer events for the staff of microfinance institutions or farmer cooperatives, for input dealers and other value chain actors, and for government staff (e.g. extension officers). Training actors involved in the distribution of agricultural insurance is a cost-effective way to raise farmers' awareness about risk and insurance, educate them on the use and limitations of insurance, and inform them about the features of existing products on the market.

Country examples:

- » In China GIZ financed a mapping of weather stations throughout the country to determine the suitability of different geographical areas for weather-index products. This analysis subsequently contributed to the Chinese insurance partner's selection of pilot regions (GIZ, 2017j).
- » In Ghana GIZ staff, working jointly with the Ghana Meteorological Agency (GMet), physically assessed weather stations in the country to determine the investment needed for additional installations. Based on this assessment, GIZ went on to finance the acquisition of weather stations because the GMet's limited budget was such that the implementation of the Ghana Agricultural Insurance Pool (GAIP) would have stalled without this support. The project also trained GMet technicians to install and maintain weather stations (GIZ, 2017e).
- » In Kenya GIZ supported the Ministry of Agriculture, Livestock and Fisheries to develop standardised production and farm data collection guidelines and tools for extension officers (GIZ, 2014d).
- » In the Remote sensing-based Information and Insurance for Crops in Emerging Economies (RIICE) project, GIZ and its partners carried out multi-year trials in Bangladesh, Cambodia, India, Indonesia, the Philippines, Thailand and Viet Nam on the use of radar technology to determine the growth of rice plants. The research has resulted in a satellite-supported information system that monitors rice growth in these countries (GIZ, 2017h).
- » In the Philippines GIZ helped to establish the Philippine Rice Information System (PRISM) that gathers and organises information on the area under paddy and on rice yields and losses, and then provides this information to key stakeholders so they can organise policy support (GIZ, 2017b).
- » In Paraguay GIZ built an agricultural insurance component into a resilience project that fosters resilient agriculture based livelihoods in Eastern Paraguay. The component supports advice to Government for the development of a sound agricultural insurance system and develops credit-bundled and social protection scheme bundled weather risk insurance (bilateral project FortaleceRES)
- » In Ghana GIZ supported the regulator and the insurance association to design a broad-based insurance awareness campaign that included radio drama, radio jingles, a roadshow and community advocates. In addition, GIZ also provided direct support to the GAIP, designing a range of materials (disseminated through radio, television, text messaging and direct interactions) for its multi-pronged marketing strategy (GIZ, 2014a; GIZ, 2017l).

- » In India GIZ helped its partners to design audio-visual tools incorporating interactive animated videos. It then pilot-tested the tools and evaluated the experience (GIZ, 2017a).
 - » In Kenya GIZ-supported train-the-trainer events that enabled extension officers of the Ministry of Agriculture, Livestock and Fisheries to inform farmers about agricultural insurance (GIZ, 2014f).
 - » In the Philippines, under the RIICE and the Enhancement of Food Security in the Visayas projects, GIZ supported the development of financial literacy training modules and communication materials and the delivery of insurance awareness training for rice farmers.
 - » In Peru GIZ supported awareness campaigns for the rural population, producer associations and regional governments, which consisted of the theatre play *El Niño viene?* (Is El Niño coming?), radio spots and the publication of several comics explaining the insurance concept in simple language and how insurance can protect against natural phenomena.
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3.3.3 Activity area 3: Sustainable business models

IMPLEMENTATION PARTNERS:

Insurance companies, public and private data providers, academia..

OBJECTIVE:

To develop sustainable business models for agricultural insurance provided to small-scale low-income farmers.

OUTPUTS AND ACTIVITIES:

Building the capacity of local insurance companies is key for the sustainability of agricultural insurance. In its projects, GIZ ensures that its contractors' know-how is also transferred to the local insurance company during the business development process. The support for capacity building is not restricted to individual insurers but may involve the entire sector to ensure a level playing field for all actors. GIZ helps to establish sector-wide training systems, such as for actuaries, to ensure that all insurance companies can design and price products based on locally available know-how. The development of insurance products for farmers requires a broad range of expertise – e.g. meteorology, agronomy, and insurance and actuarial science. While designing the product development process, GIZ assesses the capacity of its partners and identifies knowledge gaps where external expertise is required. Based on the capacity needs of its partners, GIZ designs tailored-made capacity-building strategies that may involve training, workshops, study tours and/or peer-to-peer learning.

Key for increasing the outreach of agricultural insurance are products that meet farmers' needs. Due to a lack of insurance awareness, demand for insurance is often not articulated by farmers. Insurance companies therefore need to invest time and resources in carrying out an analysis of farming households and their risk exposure. The novelty of agricultural insurance in many countries means that insurers often find it difficult to **design product development processes** suited to agricultural insurance. GIZ provides advice on the various methods and steps needed when developing tailor-made insurance solutions (e.g. risk mapping and analysis, household and demand surveys and ability-to-pay analysis).

As commissions are not an effective way to incentivise distribution partners, for business models to be successful, they must be linked to the core business of aggregators. The three insurance distribution models that show most promise are linked to the services of financial institutions, agricultural input suppliers and agricultural processors/contract farming operators respectively. Drawing on its micro-insurance experience, GIZ **shares international good practices** on cost-effective distribution models and advises insurance partners on how to adapt them to the local context.

Innovative distribution models involving rural financial institutions and value chain actors depend on these institutions or businesses having knowledgeable staff. In its workshops and training, GIZ **raises these intermediaries' awareness of insurance and builds up their capacity** to act as a bridge between insurer and farmer.

Another key concern is ensuring lean and efficient administrative processes. GIZ **finances research on the use of modern technology to improve product design and to reduce administrative expenses**, such as the use of remote sensing data to determine yields and harvest losses, the use of tablets or smartphones for customer registration or of mobile money for claim settlement. GIZ assists its partners in testing these kinds of innovative approaches and incorporates the learning from these trials into standard operations.

In addition to supporting individual insurers, GIZ also provides **advice on the institutional set-up** required for the insurance market as a whole to grow and reach scale. Through sector dialogue, GIZ fosters cooperation among insurance companies and provides advice on the feasibility of different institutional models, such as insurance pools.

International reinsurers play a crucial role in the business development process, both for their product know-how and their reinsurance capacity. Through its strategic alliances, GIZ has established trusted working relationships with reinsurance partners and **facilitates partnerships between international reinsurers and local insurers**.

So far, the gender aspects of agricultural insurance have received too little attention. GIZ can play an important role in this regard by commissioning more **research on gender-related aspects** and by advising insurers on the design of products and distribution models suited to the needs of women farmers.

Lastly, the body of evidence on the impact agricultural insurance has on household income and investment is still weak. By **carrying out impact evaluations** of insurance schemes, GIZ contributes to the international discussion on agricultural insurance and improves our understanding of how best to structure products so that they provide value to farmers.

Country examples:

- » In China GIZ advised a local insurer on setting up a need- and demand-assessment process that analysed the risk exposure of farmers from the national to the village level. For this, a range of activities, from production and weather data analysis to household surveys and agronomic research, were applied. Based on this analytical work GIZ helped its insurance partners to develop a distribution and claim settlement process that involved the buyers and processors of farmers' produce (GIZ, 2017j).
- » In Grenada, Jamaica and Saint Lucia GIZ supported distribution models based on credit unions or cooperatives. For this, GIZ trained the staff of relevant organisations, ensuring they understood the products and were equipped to market the Livelihood Protection Policy, an index-based insurance product (GIZ, 2014e).
- » In India GIZ helped its insurance partner to design and pilot-test new product development tools, such as real-time product structuring exercises, with farmer groups to enable the target group to contribute to product development. GIZ also fostered technology and process innovation through the pilot-testing of new photo-/video-based loss assessment techniques. Using this technology makes the claim assessment process both faster and less costly (GIZ, 2017k; GIZ, 2017g).
- » In Ghana GIZ helped to form an insurance pool of national insurers to share the risk and create sufficient business volume to attract international reinsurance partners. GIZ provided technical expertise on the establishment of insurance pools and advised on the institutional and legal framework for the GAIP (GIZ, 2017i). In addition, GIZ worked with the technical support unit of the GAIP on the design of new insurance products and on building the capacity of GAIP staff. The latter included the promotion of peer-to-peer learning between the Agriculture Insurance Company of India and the GAIP on the application of crop-cutting experiments. GIZ also helped to bring Swiss Re on board, which provided GAIP with technical support on product development and building re-insurance capacity (GIZ, 2017f).

- » In Peru GIZ helped to identify different distribution channels such as financial institutions, producer associations and water-user organisations. Since 2013 La Positiva Seguros insurance company has offered a commercial agricultural insurance product to farmers borrowing from Peruvian financial institutions.
- » As part of the RIICE project, GIZ designed and implemented a multi-year trial in Bangladesh, Cambodia, India, Indonesia, the Philippines, Thailand and Viet Nam to analyse the potential of satellite-based radar technology for monitoring the growth of rice plants. Based on this research, insurance companies in these countries are now in a position to design their area-yield index products around this technology (GIZ, 2017h).

3.4 Implementation guidelines

Insurance sector driven approach. GIZ promotes agricultural insurance through the insurance sector and works with both state-owned and private insurers. GIZ supports the creation of a level playing field for insurance companies. Practices that promote unfair competition, such as the provision of premium subsidies for state-owned insurers only, may crowd out private insurers and severely limit farmers' options. GIZ therefore supports the development of a diverse and dynamic market for agricultural insurance – a principle that does not conflict with GIZ's support for more cooperation in the insurance sector (e.g. joint insurance awareness campaigns or the exchange of learning experiences). Depending on the market conditions (e.g. small market potential, low level of know-how in the sector),

GIZ may even engage stakeholders in developing cooperation models for the promotion of agricultural insurance, such as insurance pools.

Cooperation with the private sector. The insurance sector and other private enterprises (e.g. telecoms companies, data providers) have been the main drivers of innovation in agricultural insurance. In its interventions, GIZ supports a strong role for the private sector and facilitates public–private dialogue to ensure that the roles and responsibilities of each party are clearly defined. Reinsurance partners are an integral part of the stakeholder landscape as they not only assume a large portion of the risk, but also provide important agricultural insurance know-how and promote international best practices.

PARTNERSHIPS WITH REINSURERS

Over the years, GIZ has established strong partnerships and strategic alliances with major players in the international reinsurance market, in particular with Allianz Re (e.g. in the RIICE project in Asia), Munich Re (e.g. in Peru) and Swiss Re (e.g. in Ghana, Kenya, Uganda, Nigeria). These partnerships were important as they involved the transfer of product development know-how to partner countries and enabled sustainable business growth (because the potentially catastrophic nature of the insured risks means that insurance schemes cannot grow without proper reinsurance). Key to the success of these cooperations was a formalised relationship where both partners agreed on objectives, roles and responsibilities, and financial and technical contributions from each side.

It is important to recognise that the nature of the cooperation between GIZ and the reinsurance industry has changed in recent years. Previously, one of the main reasons GIZ engaged in these partnerships was to gain access to product development know-how. Today, however, product development know-how, in particular on index insurance, is also available within GIZ and on the consultancy market.

GIZ must therefore weigh the benefits of such cooperations against their potential downsides, such as the reputational risk of being viewed as an advocate for a particular reinsurer. In China, for example, the regulator was very concerned that GIZ might be acting as door-opener for Munich Re. It was therefore crucial to properly address partners' concerns in order to maintain GIZ's credibility as an impartial actor; otherwise policy work would have been impossible.

Agricultural insurance as a business. Agricultural insurance is a business transaction whereby an insured party pays a premium to be compensated when an agreed insured event (e.g. a drought) occurs. The price (premium) for this service is based on an actuarial calculation that seeks to ensure products reflect the true nature of the risk and can be offered on a financially sustainable basis. This fundamental principle does not change, even if it is decided for political reasons that the government will provide part of the premium (in the form of a subsidy) to encourage farmers to buy insurance.

Long-term business case approach. GIZ interventions aim to create long-term solutions for agricultural insurance. This can only be achieved through a business case approach that sets out clear growth targets in terms of locations and farmers to be covered in the medium term (3 to 5 years) and long term. The financial resources required for expansion must be calculated at project inception and provided for in the budgets of project partners. Pilot-testing is one tool that helps to build a business case. A pilot scheme can be a useful way to test consumer reactions to a new product or

fine-tune a technological innovation. The success of a pilot is determined through clearly defined learning objectives. The overall viability of an insurance scheme cannot be assessed solely on the basis of the results of a pilot, as the limited time frame and limited geographical coverage does not create any significant spread of risk over time and space. Long-term viability is determined using actuarial calculations.

Scalability. GIZ interventions promote agricultural insurance that is able to provide cover to significant numbers of farmers. It therefore follows that GIZ supports the development of insurance solutions that are applicable to the major crops grown in a country. While insurance products for certain minor but high-value crops are often profitable, such business models cannot be transferred to other value chains that are of relevance for the majority of poor farmers. Decisions on which value chains are most relevant for GIZ interventions are based on sound data analysis undertaken for their pre-feasibility/feasibility studies. The choice of value chains and the question of scalability is particularly important for generating business interest from reinsurance partners.

VOLUNTARY VS COMPULSORY INSURANCE

Agricultural insurance is often hindered by low demand. A key reason for this low demand is 'cognitive failure', in particular for infrequent and severe natural disasters. In other words, low probability events, even when severe, are frequently discounted or ignored altogether by farmers trying to determine the value of an insurance contract (Kunreuther, 1996). This provides an argument for governments to make agricultural insurance compulsory, which would ensure all farmers are protected in the event of harvest failure. Similarly, financial institutions may want their customers to take out insurance when they take on a loan. In India the increase in the outreach of agricultural insurance has been helped by a government provision that all farmers accessing seasonal agricultural operations loans/Kisan Credit Card loans and jewel loans from financial institutions for the purpose of cultivating specific crops are required to buy insurance cover (Singh, 2013).

There are, however, several disadvantages to compulsory insurance. For example, farmers might not actually be aware that they are insured and, as a result, their risk management behaviour does not change. In addition, because they are dealing with a captive market, insurers have no incentive to tailor their products to customers' needs, thus diminishing the value of the insurance for farmers.

GIZ assists its partners in assessing the pros and cons of compulsory insurance. Protecting the interest of farmers is at the core of GIZ interventions. Compulsory insurance is only an option if farmers are aware of the insurance and if the products are suited to their needs.

Cost-effective government support. Agricultural insurance is characterised by various market imperfections that are invoked to justify government support (Mahul & Stutley, 2010). The areas where government support matters most are in establishing a conducive policy environment, developing an enabling regulatory framework and providing important public goods such as data. In addition, in many countries, governments provide premium subsidies for agricultural insurance, but the efficiency and effectiveness of this policy measure is hotly contested. Therefore, GIZ supports national governments to design cost-effective support strategies. To do this, a thorough analysis is conducted to determine what type of fiscal support is appropriate and what layers of risk

the government should assume. GIZ facilitates a dialogue on the cost–benefit ratio of premium subsidies compared to other options that help to make insurance more attractive to farmers (e.g. through improved product and process design, insurance education, etc.). As the fiscal burden of premium subsidies can be considerable when large parts of the population are covered, the discussion must be embedded in the national policy dialogue on disaster risk management and financing. GIZ ensures that parties to these discussions recognise lessons learned from around the world that premium subsidies are rarely ever phased out due to political reasons and, therefore, that the long-term affordability of this measure must be realistically assessed.

SMART PREMIUM SUBSIDIES AND OTHER TYPES OF GOVERNMENT SUPPORT

Premium subsidies have the objective of making insurance more affordable for farmers. This objective can, however, also be achieved through a range of other government-supported interventions, such as those to:

- provide historical data for product development;
- provide real-time data to monitor the performance of insurance products (e.g. weather data from meteorological agencies, yield data from extension officers of the ministry of agriculture);
- provide infrastructure or human resources to support product distribution and administration;
- finance technical capacity (e.g. capacity for actuarial calculations or product development);
- improve access to reinsurance markets or act as the reinsurer of last resort (World Bank, 2015; Hess, Hazell, & Kuhn, 2016)

To determine which combination of interventions is most effective for making insurance affordable, a thorough analysis is required. Whenever premium subsidies are provided, they should be designed for the benefit of low-income farmers and, at the same time, should ensure that insurance premiums reflect the actual risk exposure of farm businesses and do not induce unsound business practices and risk behaviour. The following principles apply (Hess, Hazell & Kuhn, 2016; Hill, et al., 2014):

1. The purpose of premium subsidies must be clearly defined.
2. The targeting of premium subsidies at low-income farmers must be based on a clearly defined methodology.
3. Premium subsidies must be paid directly to the insurance company.
4. Premium subsidies must be calculated as a fixed absolute amount per insurance policy in order to benefit poorer farmers who buy smaller amounts of insurance.
5. Premium subsidies must not cover the full premium amount.
6. Premium subsidies must not finance the cost of pure risk.
7. A clear exit strategy or long-term financing strategy for premium subsidies must be established.
8. A monitoring and evaluation system must be put in place to ensure the proper usage of premium subsidies.

Affordable products and premium finance. The demand for agricultural insurance depends not only on the willingness but also the ability of farmers to pay. The ‘no premium no cover’ rule requires that farmers purchase insurance before the cropping season starts if they are to be covered. However, this is the time of the year when farmers have limited cash available as they also need to pay for inputs, land

preparation and other operational costs. Providing farmers with options to pre-finance premiums is a very promising way to increase the penetration of agricultural insurance. For example, a sugarcane buyer in Kenya offered its contract farmers insurance and deducted the (unsubsidised) premiums from the income earned on their harvest. Uptake rose to 71.6%, which contrasts starkly with the uptake of 4.6%



recorded among farmers required to purchase the insurance through an upfront payment (Casaburi & Willis, 2015). In Ethiopia, farmers targeted by the R4 project contribute their own labour to risk mitigation measures and, in return, are partially compensated through membership of an ‘insurance-for-work’ scheme (Kerer, 2016).

Value for the customer. At the heart of GIZ’s approach is the development of an agricultural insurance market that adds value to farmers’ livelihoods. GIZ acts as an advocate for farmers while, at the same time, understanding and respecting the interests of all stakeholders involved, such as the profitability targets of insurance companies or social stability objectives of policy-makers. So, while GIZ supports insurance companies to run agricultural insurance as a profitable business, it also works with its partners to ensure that products are designed with the benefit of farmers in mind – e.g. by providing adequate levels of cover, affordable premiums, easy processes and timely claim payment. The key is to develop insurance products that are suited to the living conditions and risk exposure of farmers. GIZ does not therefore promote one particular type of product (indemnity, weather index, area yield index). Rather it helps insurance companies to analyse the situation of its potential clients and develop appropriate insurance solutions based on this analysis.

Adequate level of protection. Insurance must be designed in a way that ensures it offers a meaningful level of protection. For example, in Inner Mongolia in China, the key reason agricultural insurance delivered no measurable impact on farmer income was the low level of cover provided. The sum insured was based on the variable material costs of production. The low level of indemnity did not contribute substantially to the household’s ability to bear risk (i.e. sustain losses due to large adverse events) and thus had little impact on their crop production behaviour (Zhao, Chai, Delgado, & Preckel, 2016).

Responsible finance and consumer protection. GIZ promotes the concept of responsible finance and works with insurance and distribution partners to develop products and processes that protect the interests of their clients (BMZ, 2009; BMZ, 2013; BMZ, 2016). Insurance is a line of business that requires the spread of risk among a large number of people over a long period of time. Only by providing value to its customers are insurance companies able to retain a sufficiently large customer base. In practice, this value is based on providing customers with simple products and procedures, accurate product information during the sales process, and transparent claims procedures. In addition, GIZ supports regulatory changes and initiatives by the insurance industry to strengthen consumer protection (e.g. insurance education campaigns, grievance mechanisms/ombudsman systems, codes of ethics).

3.5 The role of the Competence Centre Financial Systems Development and Insurance

Coherence of GIZ projects on agricultural insurance.

All GIZ projects worldwide that deal with agricultural insurance follow the same principles and guidelines, which are outlined in this document. The projects are implemented in line with GIZ's management model and are guided by BMZ's relevant sector strategies and policies, such as BMZ's 2016 sector strategy on financial systems development. The Competence Centre (CC) Financial Systems Development and Insurance (FSDI) is a backstopping unit that plays a crucial role in ensuring that all projects adhere to these same standards. The CC supports all projects from their inception, and provides advice and support during all implementation phases up to and including the closure and evaluation of the project. The CC works closely with the relevant sector and global programmes, in particular the Sector Programme Financial Systems Development and the Sector Programme Global Initiative for Access to Insurance.

Services of the Competence Centre Financial Systems Development and Insurance. CC FSDI provides a range of services of benefit to projects on agricultural insurance and to other units of GIZ that are dealing with agricultural insurance, such as agricultural development, social protection or climate change. The CC's main services are:

1. Advisory services: Drawing on the expertise of its core staff, the CC provides projects and other GIZ colleagues with its know-how on agricultural insurance – either on-demand, looking at specific issues, or as a 'sounding board' to discuss and evaluate any new project developments and ideas.

The CC is the GIZ unit with a complete overview of the implementation status of GIZ's various agricultural insurance projects around the world. The CC facilitates knowledge exchange between projects by collecting and sharing information, linking together experts from different projects, and supporting the preparation of study visits. In addition, the CC extracts learning experiences from GIZ projects around the world, compares lessons learned and develops good practice examples that help projects to improve their performance.

In addition to GIZ staff expertise, the CC also provides projects and other GIZ units with access to its network partners. For example, as the host of secretariat of the A2ii, GIZ can tap into the expertise of the IAIS and national insurance regulators.

2. Commission/project management: The CC supports projects throughout the project management cycle. CC staff provide technical guidance during each step of the project preparation process and ensure that all GIZ rules and regulations are followed. The CC staff keep abreast of new institutional developments within GIZ (e.g. Bauhaus), and they advise projects on the application of changes in rules and regulations when preparing projects or writing new project proposals.

The CC also collects good practices in project management from its worldwide portfolio that concern areas such as the formulation of impact indicators. Based on these good practices, the CC advises on the design of monitoring and evaluation systems during the project preparation phase.

During project implementation, the CC also works with projects on identifying and contracting external expertise. The CC provides projects with access to its vast network of experts, helps with the design of terms of reference and assists with the international tendering of consultancy services.

Lastly, the CC is able to assist project staff during the closing stage of the project by evaluating lessons learned and compiling all the know-how gathered during the project's implementation.

3. Acquisition: By participating in international knowledge networks such as A2ii or international initiatives like InsuResilience, GIZ always remains at the forefront of new developments in agricultural insurance. The CC constantly screens the information gathered during such interactions to analyse the business potential for GIZ on the global level and in individual partner countries. Once a business opportunity is identified, the CC collects information, fields fact-finding missions and develops project concepts.

The cooperation landscape is broad and complex with many different actors, including the private sector, foundations, research alliances, development partners, etc. The CC advises projects on what cooperation models are feasible with which stakeholders and on how a new cooperation can be structured.

Of particular importance are the CC's close ties to the private sector. GIZ has close working relationships not only with insurance companies such as Allianz, Munich RE and Swiss RE, but also with service providers such as Sarmap (for satellite imagery technology). Through these alliances and cooperation projects with private sector partners, GIZ has access to a wealth of know-how, which the CC makes available to projects and other units.

4. Research and knowledge management: The CC manages GIZ's knowledge database on financial systems development. Projects and other GIZ units receive support from the CC on identifying relevant literature for any topic relevant to agricultural insurance.

The CC also adds to the knowledge base by carrying out (or commissioning) and publishing its own research. The CC constantly monitors what issues are being discussed in projects around the world and on the international stage and identifies hot topics that warrant further research.

Research carried out by the CC is also translated into strategic concept papers or notes to provide advice for decision-makers. The CC provides practical guidance, such as that presented herein, to projects as part of its backstopping support.





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Annex A: Overview of agricultural insurance around the world

Mexico

Agroasemex Fondos
45,000 policy holders
40% subsidised, group insurance
ProAgro
2,600,000 policy holders
100% subsidised, safety net

Caribbean LPP

80 policy holders
30% subsidised; direct

Haiti AIC

60,516 policy holders
50% subsidised, direct

Ethiopia, Malawi, Zambia and Senegal R4

32,288 policy holders
30% subsidised; safety net

Planet Guarantee

Mali, Burkina Faso, Senegal, Benin
32,000 policy holders
50% subsidised; credit linked

Senegal Groundnut

8,500 policy holders
50% subsidised; direct

Ghana GAIP

2,115 policy holders
0% subsidised; direct

Peru

La Positiva SAC
130,500 policy holders
100% subsidised; safety net
GIZ
1,000 policy holders
50% subsidised; direct

Nigeria NAIC

5,000 policy holders
50% subsidised; input supplier

Brazil

ProAgro Tradicional
50,078 policy holders
50% subsidised; credit linked
ProAgro Mais
428,452 policy holders
50% subsidised; credit linked

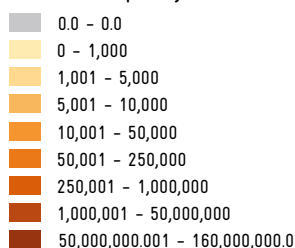
Zambia

NWK
52,000 policy holders
0% subsidised; contract farming
ZNFU
2,500 policy holders
0% subsidised; group insured
FISP
1,549 policy holders
50% subsidised; safety net
Pioneer Seeds
400 policy holders
10% subsidised; input supplier

East Africa ACRE

Kenya, Rwanda, Tanzania
394,426 policy holders
40% subsidised; input supplier

Number of policy holders



India

WBCIS

14,500,000 policy holders
68% subsidised; direct

NAIS

15,900,000 policy holders
68% subsidised; credit linked

mNAIS

2,818,000 policy holders
68% subsidised; credit linked

PepsiCo

4,000 policy holders
0% subsidised; contract farming linked

China

160,000,000 policy holders
77% subsidised; safety net

Mongolia IBLIP

14,000 policy holders
40% subsidised;
safety net

Bangladesh Flood Insurance

1,660 policy holders
100% subsidised;
group insured

Philippines - PCIC

PCIC

924,343 policy holders
60% subsidised; direct

SFS

7,787 policy holders
0% subsidised; input supplier

Kenya and Ethiopia IBLI

1,000 policy holders
70% subsidised;
safety net input supplier

Kenya FreshCo

12,000 policy holders
0% subsidised;
input supplier

Rwanda KCB

6,400 policy holders
50% subsidised;
credit linked

Sri Lanka SANASA

14,508 policy holders
0% subsidised; direct

Cambodia Forte Insurance/ WRL

60 policy holders
0% subsidised; direct

Tanzania

Afrisian

300 policy holders
0% subsidised; contract farming

QFP

500 policy holders
0% subsidised; input supplier

Mozambique GC

43,000 policy holders
100% subsidised;
contract farming

Indonesia Rice Crop Insurance

1,102 policy holders
80% subsidised;
group insured

Annex B: Overview of GLZ projects on agricultural insurance

GEOGRAPHICAL SCOPE	PROJECT	PROJECT START	PROJECT END
Africa/Asia	Strategic Alliance on Climate Risk Transfer Solutions (Swiss Re) , operating in Kenya, Uganda, Ghana, Nigeria and cooperating with ASEAN	11/2015	12/2018
Asia	Support of the political and regulatory framework conditions of pro-poor insurance markets in Asia	01/2013 01/2016	12/2015 12/2018
Asia (Cambodia, India, Indonesia, Thailand and Vietnam)	Remote-sensing-based Information and Insurance for Crops in Emerging Economies (RIICE)	01/2012 01/2016	12/2015 12/2019
China	Insurance Instruments for Adaptation to Climate Change	10/2008	02/2014
Ghana	Innovative Insurance Products for the Adaptation to Climate Change (IIPACC)	12/2013	06/2014
Ghana	Integrated Climate Risk Management (ICRM) Output 1-7	11/2015	06/2019
Global	Agricultural and Climate Risk Insurance (ACRI)	10/2012	06/2014
Global	Förderung von integrierten Ansätzen für Klimarisiko-management und -transfer: Output 1 – 3 (ACRIplus)	11/2015	12/2018
Global	German contribution to implementing the G7 climate risk insurance initiative InsuResilience	04/2016	09/2019
Global	Sector Project Global Initiative for Access to Insurance (including the hosting of the secretariat of the Access to Insurance Initiative)	12/2010 07/2018	06/2018 06/2022
India	Rural Insurance Services Programme (RISP)	01/2014	12/2016
Kenya	Adaptation to Climate Change and Insurance (ACCI)	01/2011	05/2015
Madagascar	Anpassung landwirtschaftlicher Wertschöpfungsketten an den Klimawandel in Madagaskar	01/2017	12/2021
Nigeria	Pro-poor Growth and Promotion of Employment in Nigeria (SEDIN)	04/2011	03/2017
Paraguay	Support to the resilience of vulnerable population in the Rural Area of East Paraguay	04/2016	03/2019
Peru	Insurance for Climate Change Adaption Project	11/2010	10/2013
Peru	CAT (Clima, Agro y Transferencia del Riesgo)	01/2014	02/2019
The Philippines/ Indonesia	Natural Catastrophe Insurance for Low-Income Groups in Asia	10/2009	09/2012





India

Kenya

Bangladesh, Cambodia, Indonesia,
Thailand and Viet Nam

Paraguay



Nepal

Peru


Ghana

China

Philippines

Grenada, Jamaica and Saint Lucia

Zambia



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