Africa Insurance Pulse 2023

Food Security and Agricultural Insurance

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Cover illustration: Ripe fruits stacked at a local fruit and vegetable market in Nairobi, Kenya.

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Content

Foreword African Insurance Organisation

Dear Members,

I am delighted to introduce our latest edition of the «African Insurance Pulse» series on food security, a critical issue affecting the most vulnerable sections of our society.

The human right to adequate food is universally recognised. However, too many people still face food insecurity and hunger due to poverty, inequality, conflict or climate change. Hunger has not been eradicated, on the contrary, it is on the rise. This is particularly true on the African continent.

Achieving food security requires concerted and collective action by international organisations, governments, civil society and the private sector to ensure that everyone has access to nutritious and affordable food. Insurers can make an important contribution to food security by improving agricultural productivity and resilience.

Therefore, a key area we focus on in this publication is the role of agricultural insurance in promoting food security. We explore the benefits of agricultural insurance for farmers, consumers and the wider economy, and examine the challenges to increasing its penetration. In 2020, the African agricultural insurance premium was USD 320 million, making up 1.6 % of the total African non-life insurance premium of USD 19.73 billion. Despite being slightly higher than the global share, there is a large untapped potential.

In this publication, we have gathered insights from experts and practitioners from different disciplines within the insurance sector to explore the role of regulators, insurers and reinsurers in providing risk management solutions and risk capacity to the agricultural sector.

We hope that this publication will serve as a valuable resource for policymakers, practitioners and researchers in promoting food security and sustainable development. As the insurance association for the African continent, our mission is to promote and facilitate the sharing of knowledge, expertise and best practices to improve the way the continent's insurers provide greater security to their policyholders.

On behalf of the African Insurance Organisation, we sincerely thank all the contributors who have shared their insights to make this publication possible and look forward to your feedback on this important topic.

Thank you and enjoy the read.

Yours,
Dr. Ben Kajwang
President of the African Insurance Organisation

«Agricultural insurance is critical to promoting food security in Africa. It acts as a safety net for farmers and food producers by transferring the financial risk of production or distribution losses to the insurance sector. This stabilises food production and increases resilience to disasters. In addition, insurance provides incentives for sustainable practices such as conservation agriculture and crop diversification, thereby improving food security. Insurance also helps facilitate investment in new technologies and infrastructure, ultimately increasing agricultural productivity.»

Jean Baptiste Ntukamazina
Secretary General of the African Insurance Organisation

Methodology

Faber Consulting AG, a Zurich-based research, communications and business development consultancy, would like to thank the African Insurance Organisation and the African insurance industry for their continued support over the past eight years, which has helped to build the Africa Insurance Pulse as a well-established source of information on African insurance markets.

The findings of this report are based on desk research and in-depth interviews with insurance executives operating in Africa, complemented by an online survey of AIO members specialising in agricultural insurance.

All interviews were conducted in March 2023 with the aim of analysing the impact of food security in Africa and the role of insurance in maintaining and improving it.

The companies that participated in our interviews and survey were:

- Africa Re
- African Disaster Risk Centre
- Agro Consortium (U) Ltd
- Allianz Re
- Compagnie Centrale de Réassurance (CCR)
- Continental Reinsurance
- Hollard Insurance
- Linkage Assurance PLC
- Professional Insurance Corporation Zambia PLC
- Royal Exchange General Insurance Company Ltd
- Société Centrale de Réassurance (SCR)
- Swiss Re
- The National Insurance Commission (NAICOM) of Nigeria
- W-SAFE Reinsurance Ltd

Executive summary

Global hunger and food insecurity are on the rise, with the number of hungry people estimated to have increased up to 828 million in 2021. Africa bears the heaviest burden of food insecurity, with 57.9% of the population exposed to moderate or severe food insecurity. The Economist Impact Global Food Security Index shows that all regions except sub-Saharan Africa outperformed the global average in 2022, with North America leading the index and conflict zones facing severe climate risks being the least food secure countries.

In Africa food security is on the rise due to a combination of factors. There are many factors contributing to global hunger, including poverty, climate change, conflict and economic policies. In Africa, food insecurity is increasing due to a combination of climate change, conflict, COVID-19 and the rising cost of living. The situation is expected to worsen in the coming years, and addressing the root causes will require a multifaceted approach, including reducing poverty, promoting peace and stability, and mitigating the effects of climate change.

The African re/insurance sector can aid in addressing food security challenges in emerging economies by providing effective risk management tools and financial support. Agricultural insurance is a viable option to reduce agricultural production risks caused by weather-related events, pests, and market fluctuations, with an increasing trend towards covering specific and complex risks.

The global agricultural insurance market is expanding, with a value of USD 46 billion in 2020 and expected to grow to USD 80 billion by 2030. Weather-related events, such as hail, droughts, floods, and storms, are a key factor driving this growth. The United States and China are the largest markets, accounting for over 50% of the global market.

The agricultural insurance market in Africa is also growing, but remains underdeveloped with low penetration rates and limited product offerings. Agricultural insurance primarily offsets weather-related risks for smallholder farmers, increasing their ability to access credit, invest in resources and enter into contracts with confidence. However, only 1% of smallholder farmers in Africa were insured in 2016/2017, compared to higher rates in Latin America and Asia.

The development of agricultural insurance markets in developing countries should be financially supported, with a focus on efficient and targeted financial support. Premium subsidies are not the only way governments can support the sector, and alternative measures such as the provision of quality data, financial education or catastrophe reinsurance should be considered. Compulsory crop insurance can widen the risk pool and lead to more stable premiums, but it can also increase the cost of farming and disproportionately affect small and subsistence farmers.

The sustainable development of agricultural insurance requires a regulatory framework that encourages growth and innovation in the sector. Such a framework should have flexible product design, capacity building and public awareness, risk-based pricing, clarity and consistency in regulations, and collaboration among stakeholders to support the growth and sustainability of the sector.

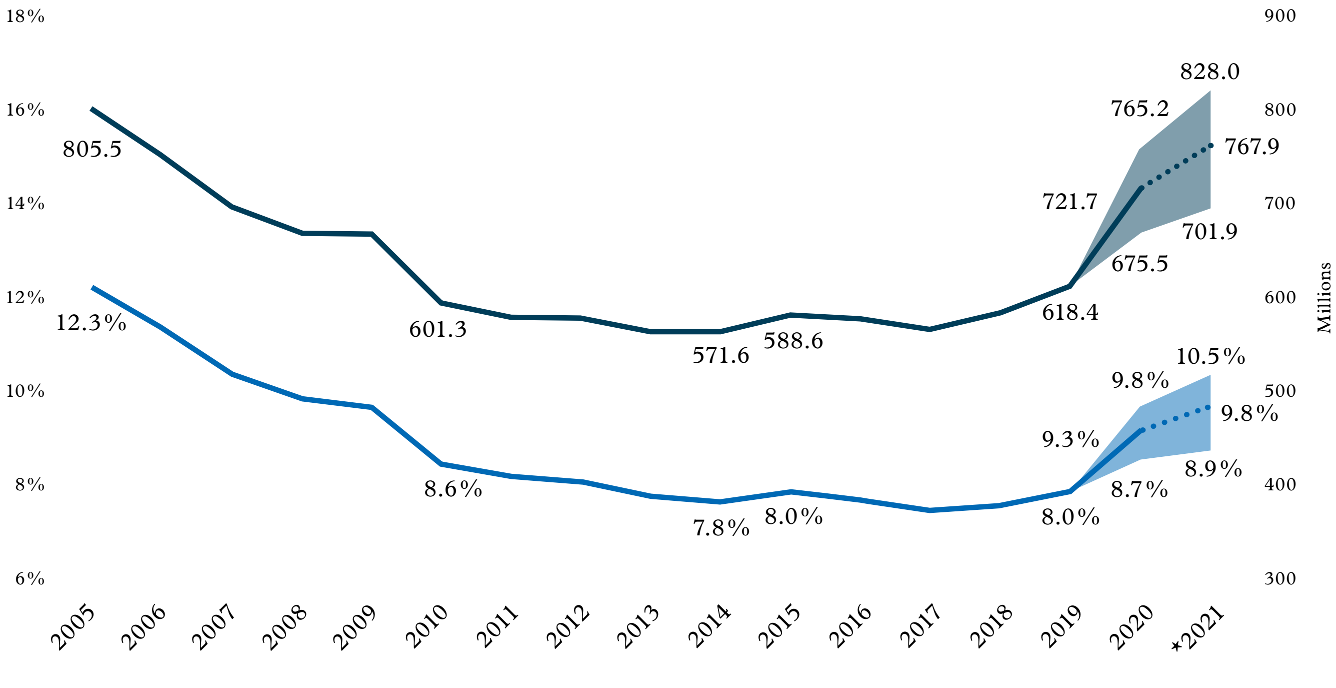
Agricultural insurance should be seen as an integral part of the agricultural system and is therefore linked to food security. It is crucial for improving food security in Africa by providing a safety net for farmers in case of crop failure or disasters, reducing vulnerability to climate change, increasing investment in agriculture, improving access to credit for farmers, and encouraging the adoption of new technologies and practices. However, a deep analysis is required to determine at which level agricultural insurance should intervene and how benefits can reach farmers.

Food security

GLOBAL HUNGER AND FOOD INSECURITY IS INCREASING RAPIDLY

According to the latest report «The State of Food Security and Nutrition in the World 2022»[1], published by the Food and Agriculture Organization of the United Nations (FAO), the number of hungry[2] in the world is estimated to have risen to between 702 (corresponding to 8.9 % of world's population) and 828 million (or 10.5 % of the world population) in 2021. Using the midpoint of the projected range of 768 million people, hunger will affect 46 million more people in 2021 than in 2020, and 150 million more people in total than in 2019 (before the COVID-19 pandemic). Asia and Africa will together account for more than 90 % of the world's hungry in 2021. This is equivalent to 425 million people, or 9.1 % of the Asian population, and 278 million people, or 20.2 % of the African population.

Chart 1: Prevalence of undernourishment and the number of undernourished people worldwide between 2005 and 2021
Source: «The State of Food Security and Nutrition in the World 2022», FAO, page 13



Prevalence of undernourishment (percentage, left axis)
Number of undernourished (millions, right axis)

Notes: *Projected values for 2021 are illustrated by dotted lines. Shaded areas show lower and upper bounds of the estimated range.

1 «The State of Food Security and Nutrition in the World 2022», FAO, IFAD, UNICEF, WFP and WHO, 6 July 2022
2 The FAO defines hunger as an unpleasant or painful physical sensation caused by an inadequate intake of dietary energy. The term hunger is synonymous with chronic undernourishment and is measured by the ‹prevalence of undernourishment› indicator.

Based on this recent trend, the world is moving away from, rather than towards, the goal of ending hunger, food insecurity and malnutrition in all its forms by 2030. Now, the FAO forecasts that nearly 670 million people, or about 8 % of the world's population, will still be hungry in 2030. This is a similar level to 2015, when the goal of ending hunger, food insecurity and malnutrition was adopted as part of the 2030 Agenda for Sustainable Development.

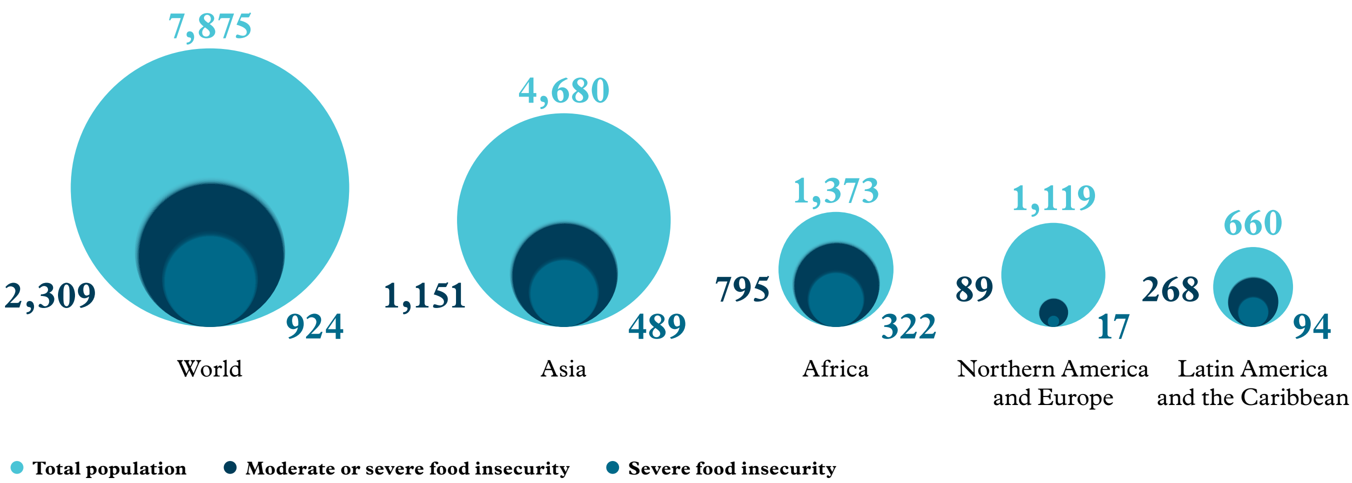
AFRICA BEARING THE HEAVIEST BURDEN OF FOOD INSECURITY IN THE 2020–2021 PERIOD

Food security[3] is another important indicator used by the FAO to monitor progress towards the goal of ensuring access to adequate food for all. Food security exists «when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life».[4]

In 2021, an estimated 29.3 % of the world's population, or 2.3 billion people, will be moderately or severely exposed to food insecurity. Even if food insecurity remained stable at the global level in 2021, there were significant regional differences. The largest increase in moderate or severe food insecurity between 2020 and 2021 was in Africa, which also had the highest prevalence of both at 57.9 % (of which 23.4 % severe). This compares with 40.6 % (of which 14.2 % severe) in Latin America and the Caribbean, 24.6 % (of which 10.5 % severe) in Asia, 13 % (of which 4.5 % severe) in Oceania and 8 % (of which 1.5 % severe) in North America and Europe.

3 Actually the FAO measures the prevalence of moderate or severe food insecurity in the population.
4 World Food Summit, Rome Declaration on World Food Security and World Food Summit Plan of Action, 13–17 November 1996.

Chart 2: The concentration and distribution of food insecurity by level of severity worldwide and by regions, number (millions) in 2021
Source: «The State of Food Security and Nutrition in the World 2022», FAO, page 28



Out of a total population of 1,373 million people on the African continent, FAO estimates that 322 million Africans face severe food insecurity, 21.5 million more than in 2020 and 58 million more than in 2019. This is more than a third of the total number of people facing severe food insecurity in the world. Within the African continent, the prevalence of food insecurity in North Africa is about half that in sub-Saharan Africa.

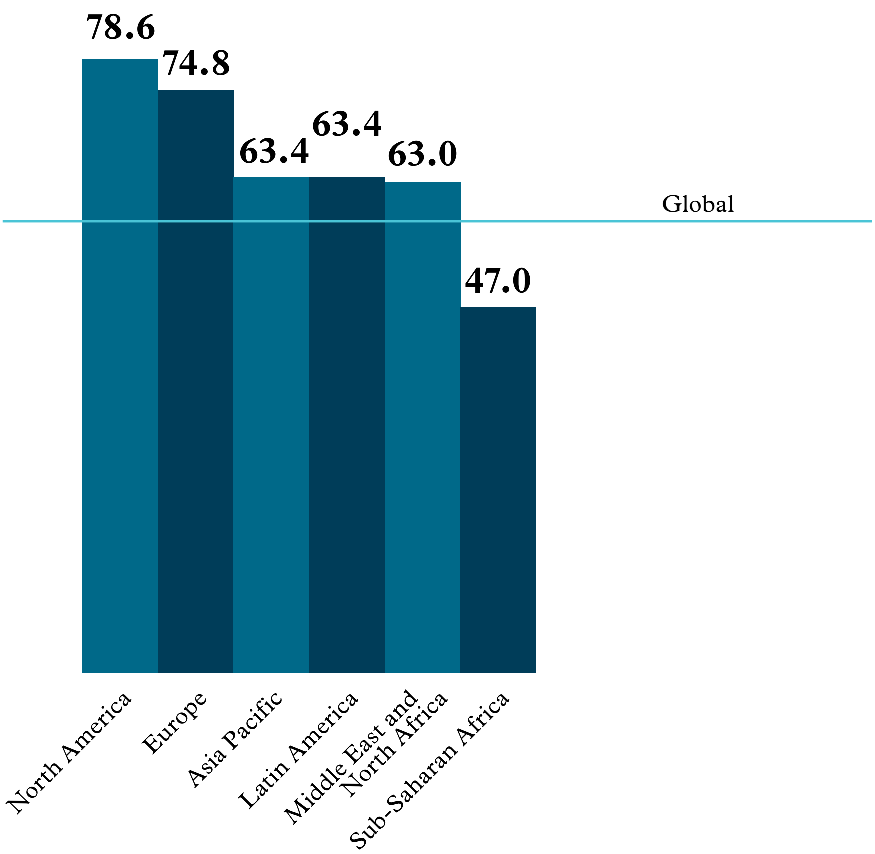
For a more detailed view of food security in Africa, we refer to the Economist Impact Global Food Security Index (GFSI). Since its launch in 2012, this index has annually measured food security in 113 countries, including 32 African countries, based on four dimensions: affordability, availability, food quality and safety, and sustainability and adaptation. The index is based on a dynamic benchmarking model constructed from 68 qualitative and quantitative drivers of food security. Since its launch, the GFSI has become a valuable tool across all sectors, serving as a policy benchmark for governments and a country diagnostic tool for private and public sector investments.

In 2022, all regions except sub-Saharan Africa outperformed the global average. North America leads the index with close to 79 points out of a maximum of 100 points.

Eight of the top ten performers in 2022, come from high-income Europe, led by Finland (with a score of 83.7). Japan (scoring 79.5) and Canada (scoring 79.1) round out the remainder of the top ten.

The least food secure countries are conflict zones that face severe climate risks: Syria is at the bottom of the list (with a score of 36.3). Six of the ten countries with the lowest scores in 2022 are in sub-Saharan Africa, where climate risks are most acute, and three countries are also facing conflict: Dem. Rep. of the Congo (scoring 43), Sudan (scoring 42.8), Nigeria (scoring 42), Burundi and Madagascar both scoring 40.6, and Sierra Leone (scoring 40.5).

Chart 3: Global Food Security Index 2022 overall ranking table results
Source: «Global Food Security Index 2022», The Economist Group, 2022



The food security situation varies widely from country to country. While the four North African countries covered by the Index had an average overall score of 59.6, with a maximum of 63.0 for Morocco and a minimum of 56.0 for Egypt. The 28 countries of sub-Saharan Africa had an average overall score of 47.0, with a maximum of 61.7 for South Africa and a minimum of 40.5 for Sierra Leone. For more details on each country's score and the four dimensions of affordability, availability, food quality and safety, and sustainability and adaptation, see the table below.

Table 1: Global Food Security Index 2022 overall ranking with focus on North Africa and Sub-Saharan Africa – Weighted sum of all pillar scores (0-100, where 100 is the most favourable)
Source: «Global Food Security Index 2022», Economist Impact, 2022

Rank (Total of 113 countries)	**Country**	**Overall Score**	**Affordability**	**Availability**	**Quality & safety**	**Sustainability & adaptation**	**Score changes** (Net change in overall score, 2022 versus 2012)
North Africa							
57	Morocco	63.0	74.6	42.9	73.1	60.0	+9.1
62	Tunisia	60.3	74.5	54.1	58.8	49.7	+4.3
68	Algeria	58.9	66.8	57.3	54.7	54.2	+8.4
77	Egypt	56.0	65.2	54.2	45.9	55.8	+2.2

Rank (Total of 113 countries)	Country	Overall Score	Affordability	Availability	Quality & safety	Sustainability & adaptation	Score changes (Net change in overall score, 2022 versus 2012)
Sub-Saharan Africa							
59	South Africa	61.7	63.4	60.1	66.1	56.9	+4.6
82	Kenya	53.0	41.7	52.5	68.8	52.6	+10.0
83	Ghana	52.6	59.9	52.4	50.5	45.1	+2.1
85	Mali	51.9	53.4	48.7	56.8	48.8	+7.4
86	Senegal	51.2	57.9	47.8	53.9	43.5	+8.7
87	Botswana	51.1	69.0	40.5	57.3	32.9	+0.9
88	Rwanda	50.6	48.4	51.8	50.3	52.7	+4.7
89	Burkina Faso	49.6	49.5	49.8	52.8	46.4	+10.7
90	Tanzania	49.1	45.8	58.7	50.2	41.7	+10.2
91	Benin	48.1	50.5	53.6	48.1	38.9	+8.9
92	Malawi	48.1	33.6	52.9	52.0	58.2	+2.6
93	Uganda	47.7	48.3	41.0	45.1	57.0	+6.7
94	Mozambique	47.3	42.6	49.4	41.8	56.5	+3.5
95	Côte d'Ivoire	46.5	54.2	42.1	44.1	43.2	+1.5
96	Cameroon	46.4	50.4	31.9	56.5	47.0	+2.8
97	Niger	46.3	42.8	41.7	47.0	55.5	+4.2
98	Togo	46.2	45.7	51.0	42.3	45.4	+3.5
99	Guinea	45.1	37.0	49.0	39.8	56.9	+9.3
100	Ethiopia	44.5	32.9	44.7	56.3	44.9	+5.8
101	Angola	43.7	35.5	43.5	43.9	54.6	+0.8
102	Zambia	43.5	26.8	46.7	54.2	51.6	−1.8
103	Chad	43.2	50.1	40.0	44.7	35.9	+7.7
104	Congo (Dem. Rep.)	43.0	46.9	40.6	43.5	40.1	+9.3
105	Sudan	42.8	35.2	48.2	53.9	35.7	+7.3
107	Nigeria	42.0	25.0	39.5	55.6	53.7	−0.9
108	Burundi	40.6	32.5	41.4	52.4	38.6	−1.4
108	Madagascar	40.6	39.5	43.0	34.9	44.9	+1.2
110	Sierra Leone	40.5	36.6	35.5	41.8	49.8	−1.0

In summary, the report's authors argue that the downward trend in food security reflects structural problems and significant risks in the global food system. These include volatility in agricultural production, scarcity of natural resources, growing economic inequality, and volatility in trade and supply chains. The economic and socio-political shocks of recent years have exacerbated an already fragile food environment. As these shocks become more frequent and severe, global food security will be increasingly threatened. This leads to the next question: what factors increase food insecurity?

PROGRESS IN ERADICATING WORLD HUNGER IS STALLING DUE TO A COMBINATION OF FACTORS

There are several factors (or the combination thereof) that can contribute to food insecurity, including the following:

- **Poverty:** Low-income households may struggle to afford sufficient quantities of nutritious food.
- **Climate change and natural disasters:** Droughts, floods, storms and other natural disasters can damage crops and reduce food availability.
- **Conflict and displacement:** War, conflict and forced displacement can disrupt food production and distribution systems and make it harder for people to access food.
- **Poor agricultural practices:** Poor farming techniques, limited access to inputs such as seeds and fertiliser, and lack of storage and transport infrastructure can limit food production and availability.
- **Limited access to markets:** Rural and remote areas may have limited access to markets, making it difficult for people to buy or sell food.
- **Economic policies:** Economic policies such as trade restrictions, price controls and subsidies can affect the availability and affordability of food.
- **Inequality:** Inequalities in income, education and gender can limit access to food and contribute to food insecurity.
- **Food waste:** Approximately one third of all food produced globally is lost or wasted, which could otherwise be used to alleviate food insecurity.

On the African continent, food insecurity is increasing due to a combination of factors, including climate change, conflict, COVID-19 and the rising cost of living according to the report from the Economist Intelligence.[5]

Adverse weather conditions in 2022 and the potential for further disruptions in 2023 will adversely affect domestic food supplies, while high prices for agricultural inputs (especially fuel and fertiliser) and imported food will exacerbate food security crises in much of East Africa, the Sahel and parts

5 «Africa outlook 2023: the challenges ahead. Resilience amid disruption.», The Economist Intelligence Unit Limited, 2022.

of Southern Africa, and Sudan. Water stress and food insecurity will remain a major driver of conflict, social unrest and cross-border migration particularly in Ethiopia, Somalia, South Sudan and Sudan.

Conflict on the continent will remain a problem and will be difficult to resolve. Hotspots of insecurity in 2023 are found in the impoverished Sahel region, particularly in Mali and Burkina Faso, in fragmented and contested Libya, the Horn of Africa, northern Mozambique and parts of Nigeria. Of particular concern is the conflict in northern Ethiopia (Tigray region), which will continue to undermine peace and stability at the Horn of Africa in 2023.

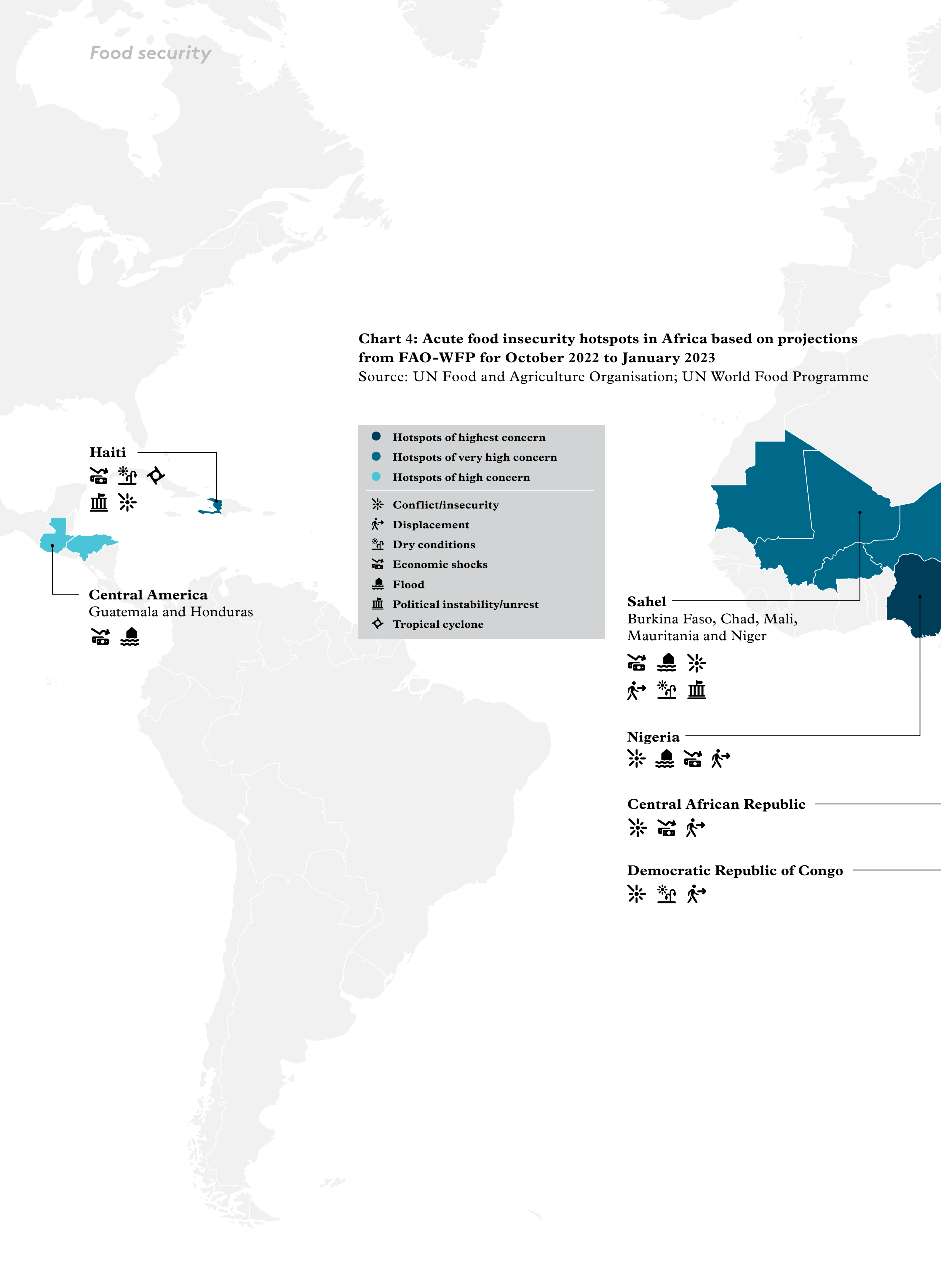
The consequences of the COVID-19 pandemic and possible new variants could continue to spread across Africa and key trading partners, disrupting local economies and supply chains, although the likelihood of this is considered moderate compared to the risks of global warming and continued conflict, which are considered high.

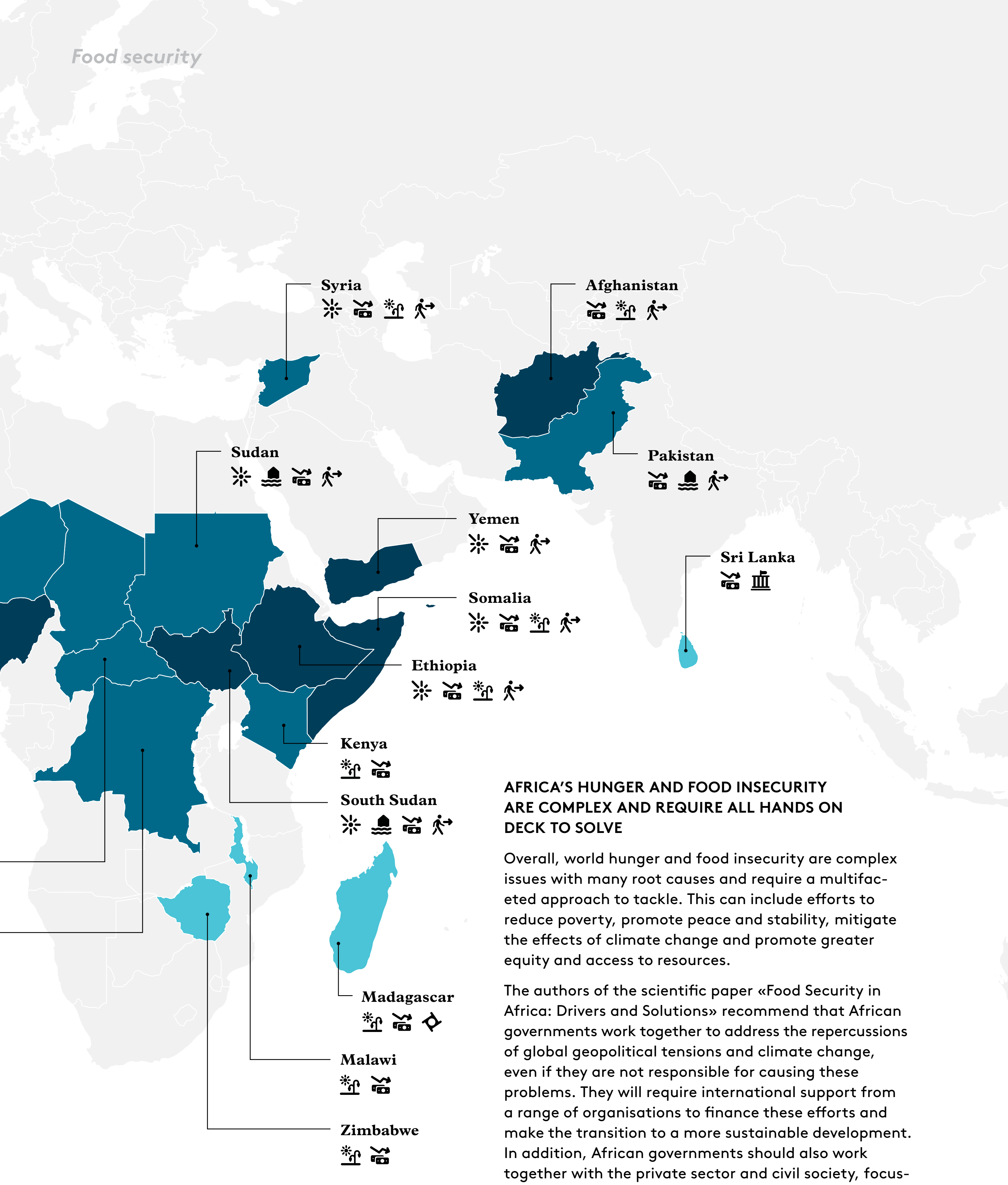
Finally, the conflict between Russia and Ukraine is further destabilising global supply chains and commodity markets.

The next graph illustrates the multidimensional crisis facing Africa, which consists of the challenges of food insecurity inextricably linked to climate change, violent conflict, the COVID-19 pandemic and the cost of living crisis. The main pressures behind rising hunger in Africa are violent conflict and climate change, to which can be added the impact of pandemic recovery bottlenecks since 2021, all exacerbated by the war in Ukraine and sanctions since February 2022.

Most of these pressures do not come from within Africa, but are felt most strongly there. Some of these strains are cyclical and can be expected to ease in the coming years, but the burdens of climate change will increase in the coming decades; action to reduce greenhouse gas emissions, while urgent, will not reduce the impact of climate change for a long time.

Chart 4: Acute food insecurity hotspots in Africa based on projections from FAO-WFP for October 2022 to January 2023
Source: UN Food and Agriculture Organisation; UN World Food Programme





AFRICA'S HUNGER AND FOOD INSECURITY ARE COMPLEX AND REQUIRE ALL HANDS ON DECK TO SOLVE

Overall, world hunger and food insecurity are complex issues with many root causes and require a multifaceted approach to tackle. This can include efforts to reduce poverty, promote peace and stability, mitigate the effects of climate change and promote greater equity and access to resources.

The authors of the scientific paper «Food Security in Africa: Drivers and Solutions» recommend that African governments work together to address the repercussions of global geopolitical tensions and climate change, even if they are not responsible for causing these problems. They will require international support from a range of organisations to finance these efforts and make the transition to a more sustainable development. In addition, African governments should also work together with the private sector and civil society, focusing on building the resilience of their communities to better cope with food insecurity.

In particular, the African re/insurance sector can help address Africa's food security challenges and protect farmers and other stakeholders from the risks associated with agricultural production by providing appropriate and robust risk management tools as well as the necessary financial capacity.

Interview with Dr Corneille Karekezi, Group Managing Director and CEO, Africa Re

The African agricultural insurance premium in 2020 was estimated at around USD 320 million, representing a share of 1.6% of the total African non-life insurance premium of USD 19'730 million. Although this share is slightly higher than the global share of 1.3%, intuitively there seems to be a large untapped potential. What is your assessment of the current state of the African agricultural insurance market? What are its main strengths and weaknesses, and where do you see opportunities for growth? How does your role as a reinsurer differ from that of African primary insurers?

Overall, neither we as insurers nor insurance regulators or governments can be satisfied with what has been achieved so far. Despite the economic importance of the agricultural sector to many countries, agricultural insurance markets are still at a very early stage of development in Africa. Very few markets, particularly in southern and eastern Africa, as well as Morocco and Egypt, generate more than 80% of agricultural insurance premiums in Africa. The markets in southern Africa have developed well, partly because of the different structures of the agricultural sector, which tends to be dominated by large commercial farms. Not only have good risk management structures developed here, but market-oriented and modern practices are also applied.

In West African countries such as Nigeria, on the other hand, we see rather small farms and many subsistence farmers, and particularly farms which are not yet fully integrated in the formal financial system. Nevertheless, we see enormous growth opportunities here, closely linked to the high economic importance of the agricultural sector. The resilience of this sector, which employs a large proportion of the population and is a major contributor to economic growth, urgently needs to be strengthened. Food security, highlighted by the immense vulnerability from the fallout of the war in Ukraine, is a fundamental prerequisite for the further development of the continent.

Insurance can play an important role in boosting investor confidence and mobilising financial resources for agriculture. However, with very few exceptions, the experience to date has been disappointing: agricultural insurance penetration is still very low and key performance indicators such as premium income, accumulated sums insured, and the achievement of risk-adjusted premiums are at unsatisfactory levels. This suggests the need for greater government support to ensure, for example, that smallholders can access and afford insurance products. First, however, government awareness and institutional capacity need to be strengthened.

Africa Re and other reinsurers have a complementary role to play here: the agricultural sector is dominated by covariant risks such as natural hazards, climate change, pests, or diseases. The associated high accumulation risk and volatility of underwriting results deter many primary insurers from developing and offering products for this sector.
As reinsurers, we provide much-needed risk capacity, technical competences in risk management, as well as advocacy and awareness-raising support. But unfortunately, another major problem that will take years to overcome is the insufficient availability of agricultural underwriters in Africa.

In 2019, Africa Re signed an agreement with the IFC's Global Index Insurance Facility to help thousands of Nigerian smallholder farmers gain easier access to insurance to protect their crops and livelihoods. The initiative is also explicitly aimed at helping Nigeria achieve its goal of food security. Can you tell us more about the driving forces behind this initiative, its contribution to policy objectives and your experience so far? Are there any lessons you would like to share?

Together with the IFC, we identified the need for much greater collaboration between different stakeholders to address current issues and promote the sustainable development of the market. First, IFC and Africa Re wanted to gain a better understanding of the sector and the market environment by involving different stakeholders. In our project in Nigeria, IFC's Global Index Insurance Facility provides research funding as well as resources for technical and institutional capacity building. Africa Re complements the project with on-the-ground activities such as providing human resources, conducting training, and mobilising local stakeholders. The project benefits greatly from IFC's extensive experience in the agricultural insurance sector. Here, not only the elimination of inefficiencies in premium subsidies, but also a necessary strengthening of farmers' risk management, such as the targeted use of fertilizer and better seeds, were identified as essential fields of action. However, the volume of agricultural insurance premiums realised within the framework of the project has so far been rather small. All stakeholders need to calibrate their individual and collective actions to achieve a greater impact and relevance.

IFC and Africa Re's specific support to Nigerian insurance companies includes not only assistance in designing specialised insurance products, but also the development of digital platforms to enable farmers to easily view and compare index insurance products from different providers. Could you tell us more about the digital platform? Can the farmer just compare products and prices from different providers, or can the farmer buy insurance directly? Can the farmer access other services or products through the platform?

By developing and implementing a digital platform, we aim to increase awareness, transparency and efficiency. Through the platform, farmers will be able to provide information on the geographical location of their farmland, fertiliser use, actual losses and other relevant details directly to the insurer. The resulting transparency can help build trust and improve the reputation of insurers, which has not always been good in the past.

Why did IFC and Africa Re opt for parametric index products rather than, for example, indemnity-based products such as multi-peril crop insurance or area yield insurance? What is your assessment of Africa Re's experience with the various agricultural insurance product types?

There were several reasons for this decision. For example, we have found that indemnity-based insurance products work well to cover the risks of large farms where there are adequate statistics and reliable accounting systems. For smaller farms, however, indemnity-based products are often uneconomical. In addition, subsistence farmers in particular need immediate liquidity after a loss event, which cannot be provided by indemnity-based products due to the time-consuming claims management and settlement process. However, even if we were prepared to offer an indemnity-based product, we often do not have the data we would need to develop relevant and robust products for smaller farms. We have therefore opted for index products, which can also better reflect technological developments such as the use of remote sensing technologies.

Do you think the insurance regulatory framework is conducive to the rapid and financially sustainable development of African agricultural insurance markets? Where do you see a need for action? What are your recommendations?

In many markets, regulators have already done a very good job. However, all stakeholders should understand whether regulators want to limit themselves to regulation and supervision or also play an active and important role in market development. If this insurance market development mandate to regulators does not exist in a country or is considered less important, regulators will not feel empowered to actively contribute to the sustainable development of robust insurance markets, even though they could be very powerful and influential stakeholders. Political will is therefore the key factor in achieving change and improving conditions. In this context, we would like to mention as an example the Moroccan regulator, which is playing a very active and successful role in market development.

Africa Re
African Reinsurance Corporation

Interview with Benseidi Abdallah, Chief Executive Officer, Compagnie Centrale de Réassurance (CCR)

North African countries, including Algeria, enjoy better food security than sub-Saharan African countries. Why is this so?

Certain parameters allow North African countries to achieve a higher level of food security, the most important of which are milder climatic conditions, which are more favourable for different types of crops (compared to sub-Saharan Africa, where the climate is dry and unsuitable for most crops); better soil fertility and diversity; increasing use of new methods and techniques such as greenhouse cultivation, drip irrigation and supplementary irrigation; better access to agricultural credit; the construction of dams and water reservoirs; and, finally, government support for farmers (such as, in some cases, covering farmers' losses).

How does Algeria compare with neighbouring countries on food security matters?

Comparing Algeria with its neighbours, our country, in addition to its potential (Algeria has the highest water table in the world, with an agricultural area estimated at 413,588 km2), has implemented several plans (such as the National Agricultural Development Plan and the National Plan for Agricultural and Rural Development) to strengthen the country's food security and promote a productive and diversified economy.

Indeed, Algeria is more determined than ever to achieve this goal, as evidenced by its latest action plan. The plan sets out a number of measures. Among other things, it encourages private investment through a series of incentives, including easier access to land and the reduction of administrative bureaucracy associated with investment through the creation of a one-stop shop. These initiatives should make it possible to intensify production, increase supply and reduce imports of agricultural products (cereals, rape, maize, sugar beet, etc.).

In addition, the Algerian government is banking on the promotion of investment in the south of the country, through the Office for the Development of Industrial Agriculture in the Sahara, reorganising land and reclaiming unused land, and providing security for farmers by regularising their situation.

Does agricultural insurance play an important role in supporting the growth and development of the agricultural sector in Algeria?

According to World Bank data, Algeria's Gross Domestic Agricultural Production increased from USD 5.4 billion in 1999 to USD 11.2 billion in 2008 and over USD 20 billion in 2020. As a percentage of GDP, the sector has improved almost continuously since 2011 from 8.11% in 2011, to 15.47% in 2021 and 14.70% in 2022. The slight decrease recorded over the last two years is explained by the improvement in oil revenues. This positive trend is the result of the policy of the public authorities to promote this sector, in order to ensure the long-awaited food security.

In Algeria, agricultural insurance is mainly provided by a public insurance company. Is this an effective way of promoting agricultural insurance in Algeria? What is the role of private insurance?

The main company in charge of agricultural insurance in Algeria is the Caisse Nationale de la Mutualité Agricole (CNMA). This company dominates the Algerian agricultural insurance market (with a turnover of DZD 2,385 million, as of 31/12/2021), accounting for 55% of the market. However, its effectiveness cannot be quantified as the low penetration rate of this type of cover is explained by other factors, not just by the availability of insurance products. As for the private sector's contribution, there are some privately owned companies that offer agricultural insurance cover (mostly traditional cover). However, their share remains marginal.

Algeria has introduced an innovative solution called «Crop Yield Index Insurance» (developed by the World Bank in partnership with the Algerian government to protect farmers against losses due to low crop yields caused by weather-related risks). Have there been any other innovations in the field of agricultural insurance?

In collaboration with the United Nations Development Programme (UNDP), Algeria has begun work on launching parametric insurance to cover crops against certain natural disasters (drought, forest fires, etc.). This project is still in progress.

Do you think that the regulatory framework for insurance is conducive to the rapid and financially sustainable development of the Algerian agricultural insurance market? Where do you see a need for action? What are your recommendations?

The current regulatory framework is considered adequate. However, the shift towards parametric insurance would require the adaptation and strengthening of this regulatory framework in order to better support the development of agricultural insurance.

What is the CCR's position on agricultural insurance?

We are developing agricultural insurance and have made it a strategic priority within our company. This is a medium- and long-term project because, in Algeria, the agricultural sector is developing more and more with the involvement of large investors who are creating added value in this sector. The CCR supports all actions initiated, whether by organisations such as the UNDP or by local insurance companies wishing to launch new agricultural insurance products on the market. Aquaculture is a good example of this, as CCR has, in recent years, taken the lead in putting in place the backbone of an insurance product that will open the door to investors wanting to develop such farms. Like a locomotive, the CCR is doing its utmost to ensure that the insurance sector in general makes an active contribution to protecting the wealth created by all economic sectors. In particular, the agricultural segment is of strategic importance as it is a strong link in the preservation of food security in Algeria.

Interview with Gael Certain, Head Agriculture EMEA and Mario Wilhelm, Head Middle East & Africa Public Sector Solutions, Swiss Re

Need for building partnerships

The lack in awareness, affordability and accessibility (also known as the three A's) is the root cause impacting the penetration of agricultural insurance in Africa. Penetration of agricultural insurance is low – although not substantially different from the levels of most other insurance lines on the continent. To improve this situation, building risk awareness and understanding and establishing new risk management approaches will be key.

Traditional agricultural insurance is costly – not just by African standards. The distribution and claims adjustment processes are labour intensive, with experts having to check sites and assess the losses. Finally, accessibility poses an issue. Besides Southern Africa, the continent's agriculture is mostly in the hands of subsistence farmers or smallholders, who are difficult or costly to access while they are only able to spend little of their income to purchase insurance. Agricultural insurance thus often focuses on the mid-to-higher income levels, and thereby tends to exclude the most vulnerable of the sector who are highly exposed to variances in food security.

Need for aggregators and enablers

In the past few years, agricultural insurance has benefited from innovations, both in terms of products and processes. Insurers have become more effective in overcoming some of the key hurdles mentioned above. Aggregators, such as governments, banks, input providers or community organisations provide agricultural extension services – be it education, financial support, credit, distribution of seeds, fertilisers or herbicides, the organisation of exports for cash crop farmers or access to bank accounts.

Low financial inclusion is a further challenge to improve African farmers' living conditions, income and food security. Subsistence farmers are the most difficult to integrate as they are the furthest detached from the financial value chain. Banks tend to take a prudent approach to agriculture lending due to the risk that loans are not paid back because of weather-related risks. Thus, insurance is bundled with credit as a collateral.

Insurers in Africa also partner with enablers or aggregators to explain and distribute their product. Telecom and mobile phone providers have contributed significantly to the distribution, premium collection and claims pay-outs in insurance. However, partners from within the agricultural value chain are still needed to explain the product and guide smallholders through the process of insurance buying.

In terms of finding the right product, the market has made progress to improve both affordability and accessibility. Indemnity products, which rely on experts to visit the field and verify claims, may work in mature agricultural markets, but tend to be too costly for the African market reality. By contrast, parametric insurance, such as weather index or areal yield index products, have become the dominant model as they can be independently verified and are more cost-efficient and affordable. While insurers need to further invest in agricultural underwriting and claims resources, governments will have to strengthen information on metrological data or yield statistics to improve overall modelling capabilities and agricultural zoning and reduce basis risks.

Need for continuity

Governments have an important role to play in developing the agricultural insurance market in Africa. One can distinguish between South Africa which – besides its large smallholders' sector – has a sizable commercial agricultural sector, where farmers are more risk aware and have the financial means to purchase insurance, and most other countries, which are dominated by cash crop farmers and smallholders and rely on subsidies to buy insurance. Together with the insurance industry, governments will have to scale up pilot projects, which might have been initiated in conjunction with donor organisations such as development banks and turn them into sustainable schemes that will extend beyond their original geography.

Continuity is also an important ingredient to further build the market. Many of the initial insurance schemes launched in Africa lacked financial stability or were only maintained for a limited timeframe. This situation has improved since both multilateral donor organisations and governments recognise the need to uphold their commitment and provide multi-year financing.

Finally, each African market is different and no one approach will fit all. While South Africa will be most commercially oriented, the East African countries – generally further advanced in financial services – tend to be more entrepreneurial markets in Sub-Saharan Africa. In North Africa, mutual agricultural insurers dominate some markets and have the ability to serve as efficient aggregators. In West Africa, the agricultural insurance market – as other lines of business too – tends to still rely on an ex-post approach and would benefit from more continuity in the public schemes.

Agricultural insurance is not the only means to improve food security

When addressing food security for Africa's population, the entire food production value chain must be examined. The risks that need to be covered reside not only in the production process, but also in storage, distribution or the export of products. Furthermore, a major impediment to food security, which is often overlooked, is related to the livelihood of farmers. Sickness of a key member in the household might be a threat to production just as vital as drought or pests. Insurers as well as the public sector have to overcome silos and include health care and medical protection into their approach. However, this can be a challenge. Many resources targeting to improve food security, agricultural productivity or combat climate change are earmarked for these causes and cannot easily be reassigned to include health care needs in the coverage.

Agricultural insurance

Agriculture is the backbone of many emerging market economies, with a significant proportion of the population relying on it for their livelihoods. However, agriculture is also fraught with risks, such as unpredictable weather patterns, pests and diseases, and market fluctuations. These risks often lead to crop failures or losses of livestock, which can have devastating effects on food security, as well as on the livelihoods of farmers and their families. Agricultural insurance has the potential to mitigate some of these risks and improve food security. Compared to 90 % in 2007, 83 % of global agricultural insurance in 2017 covered crops, while the coverage for livestock, horticulture including greenhouses, aquaculture/ fisheries and forestry increased.[6] This is an indication that the insurance industry has recently developed a greater appetite for covering more complex and very specific risks.

THE AGRICULTURAL VALUE CHAIN

The agricultural value chain refers to the series of interconnected activities that are involved in the production, processing, and distribution of agricultural products from the farm to the end consumer. The value chain begins with the production of raw agricultural products such as crops, livestock, and fish, and includes activities such as harvesting, transportation, processing, packaging, and marketing.

Chart 5: The agricultural value chain
Source: Faber Consulting AG

Agricultural Value Chain	Pre-production	Production	Processing	Distribution	Retail
Primary Stakeholders	Fertilizer suppliers	Farmers	Mills	Traders	Wholesalers
	Seed suppliers	Associations	Processing Companies	Distribution Companies	Retailers
	Irrigation businesses	Cooperatives	Packaging Companies		Exporters

6 «Innovations and emerging trends in agricultural insurance for smallholder farmers – an update», GIZ, 2021

At each stage of the value chain, value is added to the product through processing, quality control, and marketing activities. These activities are essential for creating products that meet the needs of consumers and for ensuring that the products reach the market in a timely and efficient manner.

The agricultural value chain plays a crucial role in the economy of many countries, as it contributes to food security, employment, and economic growth. However, the value chain is often characterised by inefficiencies, which can result in low productivity, poor quality products, and low profits for farmers and other stakeholders. Improving the efficiency and effectiveness of the agricultural value chain can lead to increased productivity, improved quality, and higher profits for all stakeholders, from farmers to consumers.

AGRICULTURAL PRODUCTION RISKS

Agricultural production is subject to a variety of risks that can affect farmers' yields, profitability, and sustainability. These risks can be broadly categorised as production risks, price risks, financial risks, and institutional risks. For the purposes of this publication, we will focus on the insurance of agricultural production risks and its contribution to food security.

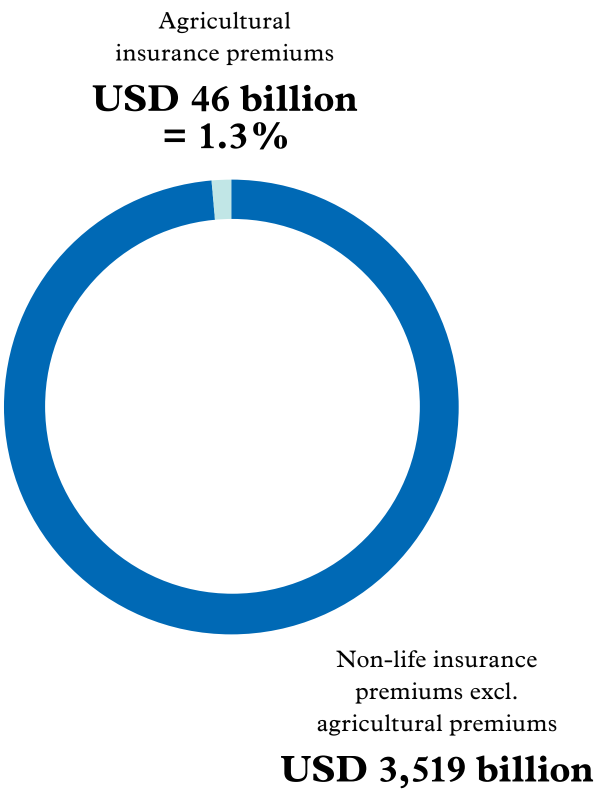
Production risks include, but are not limited to, weather-related risks, pest and disease outbreaks, and crop failure due to poor soil quality or inadequate irrigation. To mitigate these risks, farmers can take a variety of risk management measures such as diversifying their crops, adopting sustainable agricultural practices, investing in irrigation and other infrastructure, and seeking insurance or other forms of risk transfer tools.

GLOBAL AGRICULTURAL INSURANCE MARKET

The global agricultural insurance market has grown significantly in recent years, as the need for risk management tools in agriculture has increased. According to Swiss Re, the global agricultural insurance market was valued at USD 46 billion in 2020 and is expected to reach USD 80 billion by 2030, growing at a CAGR of 5.7 %. The largest markets for agricultural insurance premiums are the United States and China, with annual premium volumes of USD 15 billion and USD 12 billion, respectively, together accounting for more than 50 % of the global market.

Chart 6: 2020 global non-life and agricultural insurance premiums

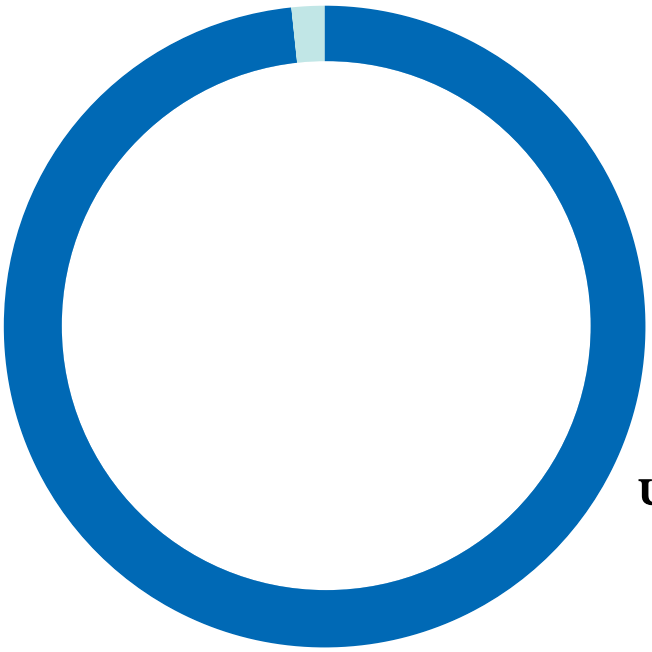
Source: a. Global non-life insurance premiums: Swiss Re sigma Explorer; b. Global agricultural insurance premiums: Swiss Re sigma 5 – Maintaining resilience: The role of P&C insurers in a new world order. One key factor driving agricultural insurance growth is the increasing frequency and severity of weather-related events such as hail, droughts, floods, and storms, which can have a significant impact on crop yields and farmers' incomes.



AFRICAN AGRICULTURAL INSURANCE MARKET

The agricultural insurance market in Africa is relatively underdeveloped, with low levels of penetration and a limited range of products. However, the market has been growing in recent years, driven by increased demand for risk management solutions among farmers and the development of new technologies and insurance models. The value of agricultural insurance premiums in Africa is estimated to be less than 0.7 % of the world total.

Chart 7: 2020 African non-life and agricultural insurance
Source: a. African non-life insurance premiums: Swiss Re sigma Explorer; b. African agricultural insurance premiums: BEINSURE[7]



Agricultural insurance coverage in Africa varies widely by country, and unfortunately, there is no comprehensive and up-to-date data available to compare the level of agricultural insurance coverage between countries in the region. However, some countries have made notable progress in increasing agricultural insurance coverage in recent years.

With an estimated premium volume of over USD 100 million, South Africa is by far the largest agricultural insurance market on the continent, followed by Morocco and Botswana, whose markets generate between USD 20 million and USD 40 million in premiums. The only other two markets with premium volumes in excess of USD 10 million are likely to be Nigeria and Zambia.

For smallholder farmers, agricultural insurance primarily offsets the risks associated with weather variability. This risk mitigation makes it more likely that a farmer will be able to obtain credit and thus invest in pre-harvest resources such as seeds, fertilizer, and labour, which would potentially increase crop yields. It also gives farmers the security they need to invest their savings and increases their confidence to enter contracts with buyers and processors. Compared to other emerging market regions in the world, agricultural insurance coverage among smallholder farmers in Africa is very low. Only 1 % of smallholder farmers in Africa were insured in 2016/2017, compared to more than 15 % in Latin America and nearly 50 % in Asia.[8]

7 Agricultural Insurance in Africa. How Farmers Can Reap Benefits of Crop Insurance?, BEINSURE, 2022
8 Determinants of uptake and strategies to improve agricultural insurance in Africa: a review., Environment and Development Economics (2021), 26, 605–631

Table 2: Agricultural insurance coverage for smallholder farmers across developing and middle-income countries

	Latin America & Caribbean	Asia	Africa
No. of small farms	21,005,083	420,078,903	59,056,107
No. of insurance policies	3,315,626	194,185,463	600,975
% of insured smallholder farmers	15.8%	46.2%	1.0%

Different classes of insurance can play a crucial role in supporting food security in Africa, not only at the production stage, but also during storage and distribution:

1. Agricultural insurance can protect farmers against the financial risks associated with crop failure, natural disasters, or other production risks.
2. Property/fire insurance provides a financial safety net for farmers and agribusinesses that store goods, helping to protect them against unexpected loss or damage caused by fire or other covered perils.
3. Transport/cargo insurance, the so-called goods in transit insurance, which can also cover agricultural products during transport, is a property all-risks insurance with some exclusions for non-insurable events. It fills the financial gap between the amount of legal liability and the actual value of the goods. This insurance product covers the period between the departure of the consignment and its arrival at the destination.

For the purposes of this publication, however, we will focus on the risks of agricultural production and thus on the most important line of business for promoting food security: agricultural insurance.

AGRICULTURAL INSURANCE: PRODUCT CATEGORIES AND POPULAR PRODUCTS

Indemnity-based insurance products

Until the 21st century, agricultural insurance was mainly offered as indemnity insurance to transfer the risk of specific crop or livestock losses. With indemnity insurance, farmers receive compensation based on their actual losses, usually after an on-site inspection by the insurer to confirm the extent and value of the damage. Indemnity-based agricultural insurance poses some challenges for the insurer, including moral hazard and adverse selection, high administrative costs, delays in paying farmers' claims, and a lack of adequate historical yield data for individual farms. On the other hand, indemnity-based policies allow insurers to offer tailored solutions, as these products can be adapted to the individual needs of customers to cover their crops or livestock risks. In addition, indemnity-based policies are based on actual loss rather than perceived or anticipated loss. This reduces the potential for adverse selection by policyholders who may seek to purchase insurance only when faced with a loss event.

These are some of the most common product types in indemnity-based agricultural insurance:

Named-Peril Crop Insurance: This product covers losses due to specific perils such as hail, fire, windstorm, frost, or a combination of these. The specific perils or risks are named in the insurance policy. The indemnification is based on a physical damage applied to the sum insured, less a deductible. Hail insurance is the most common named-peril product. It is widely available in North America, Europe, Argentina, South Africa and Australia.

Multi-Peril Crop Insurance (MPCI): This type of insurance product protects farmers from losses due to a variety of perils or risks, including natural disasters such as drought, excessive moisture, hail, wind, frost, and other weather-related events, as well as non-weather-related risks such as insect infestations and disease outbreaks. MPCI can be taken out by individual policyholders and compensation is based on the difference between guaranteed yield and the realised / harvested yield. Both the cost of insurance and the amount an insurer will pay for losses are linked to the value of a specific crop. This product is widely available, and policies must be purchased each growing season within specified time frames and before planting. If damage occurs early enough in the growing season, the policy may include incentives to replant or penalties for not planting.

Revenue Protection Insurance: This type of insurance belongs to the group of multi-peril crop insurance products. As agricultural income from crop production can be low even when yields are not, revenue protection policies insure producers against yield losses due to natural causes such as drought, excessive moisture, hail, wind, frost, insects, and disease, and revenue losses caused by a change in the harvest price from the projected price.

Traditional Lifestock Insurance: The most common livestock insurance products provide all risks coverage for specified animals and herds against loss, death, injury, diseases, and epidemics. Standard policies are based on current market valuation, but some insurers allow to amend a policy and agree on more flexible values.

Index-based insurance products

Index insurance has become the most common form of agricultural insurance. Contracts are based on events defined and recorded by a single regional index rather than at farm or plot level, for example a drought recorded by a local weather station or an official low crop estimate for a district or county. These data are generally objective and reliable. All buyers in a defined region are offered the same contract terms per unit of coverage and pay the same premium rate. When an event triggers a payment, they receive the same payment rate per unit of insurance. It is estimated that about 80 % of all agricultural insurance programs are index-based, an indication that this relatively young type of insurance has become the dominant alternative to traditional indemnity-based insurance, not only because it can reduce administrative costs, but also because it offers a solution to the problems of adverse selection and moral hazard associated with traditional agricultural insurance. The main disadvantage of this product category is the so called basis risk, which refers to the risk that the payout to the policyholder does not reflect the actual loss incurred. Basis risk is an inherent limitation of parametric insurance products, and insurers must carefully design their policies to minimise that risk.

Area-Yield Index Insurance: Area-yield index insurance was first developed in Sweden in the early 1950s and has been used in India since 1979 and in the United States since 1993. With this type of insurance, the indemnity is based on the harvested average yield of an area, such as a county or district. The insured yield is set as a percentage of the average yield for the area (typically 50–90 % of the area average yield). A payout is made if the realised average yield for the area is less than the insured yield. This type of index insurance requires historical acreage yield data from which the normal average yield and the insured yield can be determined.

Crop Weather Index Insurance: In this type of insurance, the indemnity is based on the realisation of a specific weather parameter measured over a pre-defined period at a specific weather station or for a specific satellite grid. The product is designed to protect farmers against weather-related risks such as drought, excess rainfall, or heatwaves that can lead to crop losses. An indemnity is paid if the realised value of the index exceeds or falls below a pre-determined threshold. The indemnity is calculated based on a pre-agreed sum insured per unit of the index (for example, dollars per millimeter of rainfall). It has been commercially available since 2002.

Normalised Difference Vegetation Index (NDVI) Insurance: This type of insurance works by using satellite images to monitor changes in vegetation density over time. It protects farmers against the risk of yield loss due to climate-related events such as drought, flooding and pests. The index is based on the difference between the near-infrared and red reflectance of crops, which is used to calculate a value that represents the health and density of the vegetation. If the vegetation index falls below a certain threshold, a payment is triggered to the insured farmers, regardless of whether they have suffered crop losses. For example, there are products where the payout is based on an index that relates moisture deficit to pasture degradation. This product has been applied to pasture in a few countries.

Index-based Livestock Insurance (IBLI): This product is designed to protect the livelihoods of pastoralists and other livestock keepers against the risk of drought-related livestock losses. Unlike traditional indemnity-based insurance, which requires individual assessments of the value of a farmer's livestock and payment of premiums, IBLI is based on an index that reflects the severity of drought in a particular area. An index is created based on satellite data on vegetation cover, which is correlated with the health and well-being of livestock. The index measures the density of vegetation in a given area and triggers a payment to participating farmers when the index falls below a predetermined threshold.

The Kenya Livestock Insurance Program (KLIP)

KLIP is an insurance scheme designed to provide pastoralists with financial protection against livestock losses caused by drought-related events. The program was launched in 2015 and is supported by the Kenyan government, the World Bank and other development partners.

KLIP uses satellite imagery and other data sources to assess vegetation cover and predict the likelihood of drought-related livestock losses in specific areas. Based on these predictions, participating pastoralists can take out insurance policies to protect their livestock. If a drought event occurs and results in a significant reduction in vegetation cover, eligible policyholders receive payouts to compensate for their losses.

Table 3: KLIP key performance indicators, 2015–2020
Source: ILRI (2021): Building financial resilience in pastoral communities in Africa

Year	Season	No. of households	Total sum insured USD million	Premium USD million	Payout USD million	Loss ratio
2015–16	Short rains	5,000	5.59	0.56		6%
	Long rains	5,000			0.035	
2016–17	Short rains	14,010	8.92	1.64	2.15	321%
	Long rains	13,776			3.13	
2017–18	Short rains	18,012	12.61	2.46	1.75	71%
	Long rains	18,012				
2018–19	Short rains	18,012	12.61	2.41	0.88	161%
	Long rains	18,012			2.99	
2019–20	Short rains	18,012	12.61	2.41	0	0%
	Long rains	18,012				
Total			**52.34**	**9.5**	**10.94**	**115%**

Since its launch, KLIP has seen strong demand from pastoralists. The number of households covered increased from 5,000 in the 2015/16 season to more than 18,000 in 2019/20. The total sum insured exceeded USD 12.5 million in 2020, and more than USD 10 million has been paid out in claims since the program's inception. With an average premium rate of around 18%, the program's cumulative premiums have exceeded USD 9 million. As expected for a weather-related insurance scheme, the loss ratio is extremely volatile.

KLIP has been praised by various stakeholders as an effective tool for building resilience and reducing poverty among pastoral communities in Kenya. It has also been recognised as a global best practice in the design and implementation of index-based livestock insurance programs.

FINANCIAL SUPPORT FOR AGRICULTURAL INSURANCE

Agriculture is an economic sector where many countries around the world since decades have been granting various forms of subsidies. Against this background, the question is not so much whether the development of agricultural insurance markets in developing countries should be financially supported, but rather how financial support can be designed to be as efficient and targeted as possible.

When discussing government support for developing the agricultural insurance sector, almost invariably the topic of premium subsidies is mentioned first. However, there are many other ways governments can support the sector. Most importantly, governments should collect and disseminate data on agricultural production, livestock and weather. Without this basis, no robust national insurance system can be built.

Alternative, complementary and often smarter measures than subsidising a percentage of the final premium include the provision of quality data, financial education or catastrophe reinsurance. Where direct premium subsidies are considered, per capita rather than percentage premium subsidies should be considered to support smallholder farmers as the ones really in need of financial support. Furthermore, those operating in medium to low-risk areas should be supported, rather than encouraging high risk taking by others through the provision of subsidies.

Some countries, such as India, have made crop insurance compulsory for farmers who have taken loans from financial institutions. This measure can not only help widen the risk pool, reducing the concentration of risk among a few farmers, but can also lead to more stable premiums. On the other hand, compulsory insurance can increase the cost of farming, which can disproportionately affect small and subsistence farmers. It can also be seen as an additional tax on farmers.

AN ENABLING ENVIRONMENT FOR THE SUSTAINABLE DEVELOPMENT OF AGRICULTURAL INSURANCE

For agricultural insurance to be effective, there needs to be an enabling environment and a conducive insurance regulatory framework that fosters growth and innovation in the sector. The following are some of the possible key components of such a framework:

1. Flexibility in product design: Agricultural insurance products should be designed to meet the unique needs of farmers and should be flexible enough to adapt to changing circumstances. This will help to increase uptake and improve the effectiveness of insurance in mitigating risks.
2. Capacity building and public awareness: Farmers and government stakeholders should be educated on the benefits and risks of agricultural insurance. This will help to increase demand for insurance and improve the quality of services provided.
3. Risk-based pricing: Insurance premiums should be priced according to the level of risk faced by farmers. This does not mean that farmers have to pay 100 % of the risk-based premium out of their own pocket; this premium can of course be subsidised. However, it is important for the sustainable development of agricultural insurance markets that the risk-based premium is calculated and communicated transparently. High premiums indicate high risk and can therefore also help to identify risk management related investment opportunities and risk reduction measures. In concept at least, a reduction in risk should then lead to a reduction in risk-based premiums.
4. Clarity and consistency in regulations: Regulatory bodies should provide clear and consistent guidelines on the licensing and operation of agricultural insurance providers. This will help to reduce uncertainty and encourage investment in the sector.
5. Collaboration among stakeholders: Regulators, government, insurance providers, farmers and other stakeholders should work closely together to develop and implement policies that support the growth and sustainability of the agricultural insurance sector. For example, data collection and analysis is critical to the development of robust agricultural insurance products. However, this can be a complex and expensive process, particularly in developing countries where data collection systems may be limited. Governments, NGOs and other stakeholders therefore have a role to play in supporting the development of robust agricultural data systems that can provide insurers with the information they need to design effective insurance products.

AGRICULTURAL INSURANCE AND FOOD SECURITY

Agricultural insurance should be seen as part of the agricultural system and is therefore linked to food security. However, the agricultural and food sectors vary considerably from country to country, and food-insecure communities tend to be very diverse and segmented. Risk plays an important role, but other constraints to agricultural production are also important in explaining the yield gap. A deep structural and organisational analysis is therefore needed to determine at which level agricultural insurance should ideally intervene, but also how to ensure that benefits reach farmers.

Agricultural insurance can help improve food security in Africa in several ways. First, it can provide a safety net for farmers, ensuring that they have access to financial resources in the event of crop failure or other disasters. This can help prevent farmers from falling into poverty and enable them to continue farming and producing food.

Second, agricultural insurance can help reduce the vulnerability of smallholders to climate change. Climate change is having a significant impact on agriculture in Africa, with rising temperatures and changing rainfall patterns leading to crop failures and reduced yields. Agricultural insurance can help farmers adapt to these changing conditions by providing them with the financial resources to invest in new technologies and practices that can help them better manage the risks associated with climate change.

Third, agricultural insurance can help increase investment in agriculture. Insurance can provide a degree of certainty to investors, making it more attractive for them to invest in agriculture. This can lead to increased investment in agriculture, which can help improve productivity and increase food production.

Fourth, agricultural insurance can help improve access to credit for farmers. Many farmers in Africa struggle to access credit because lenders view them as high-risk borrowers. By providing insurance, farmers can reduce their risk and improve their creditworthiness, making it easier for them to access the capital they need to invest in their farms and improve productivity.

Finally, agricultural insurance can help improve food security by encouraging the adoption of new technologies and practices. Insurance companies often work with farmers to identify and promote new technologies and practices that can help reduce risks and increase productivity. This can lead to the adoption of new technologies and practices that can help to improve food security by increasing yields and reducing risks.

The R4 Rural Resilience Initiative (R4)

R4 is an integrated climate risk management approach that aims to help communities build resilience, incomes and wellbeing in the face of increasing climate variability and shocks. The initiative combines four risk management strategies: reducing the risk of climate-related shocks through improvement of agricultural practices; transferring the risk of catastrophic events to private insurance markets; enabling better risk retention of households and communities through the promotion of group savings and integration with social protection systems; and promoting prudent-risk taking through a combination of financial education, livelihoods diversification, and easier access to credit to enable better investments.

The R4 Rural Resilience Program is a joint initiative by the World Food Programme (WFP) and Oxfam America that aims to improve the resilience of smallholder farmers and their communities in developing countries. In Africa, the program is currently operational in Burkina Faso, Ethiopia, Kenya, Madagascar, Malawi, Mozambique, Senegal, Zambia and Zimbabwe.

One key component of the R4 program is the provision of weather index-based insurance, which protects smallholder farmers from the financial losses that can result from climate-related events such as droughts or floods. Under this system, farmers pay a small premium at the start of the growing season, based on the size of their farm and the level of risk they face. If the weather during the growing season is worse than expected, the insurance payout helps to compensate for the resulting loss of income.

Table 5: R4 Rural Resilience Initiative: African Insurance KPIs
Source: Annual Report 2020

Year	No. of farmers insured	Total sum insured USD	Total Premium USD	Payout USD	Loss ratio
2009	200	10,200	2,500	0	0%
2010	1,308	73,000	27,000	0	0%
2011	13,195	940,000	215,000	17,000	8%
2012	19,407	1,300,000	275,000	320,000	116%
2013	20,015	1,200,000	283,000	24,000	8%
2014	24,970	1,500,000	306,000	38,000	12%
2015	33,197	2,200,000	362,000	450,000	124%
2016	41,867	4,900,000	770,000	74,000	10%
2017	58,558	6,600,000	1,100,000	1,500,000	136%
2018	93,320	10,300,000	1,700,000	590,000	35%
2019	93,826	12,200,000	1,600,000	109,000	7%
2020	174,708	24,975,000	2,544,000	330,000	13%
Total	**774,371**	**64,998,200**	**9,184,500**	**3,452,000**	**38%**

The insurance component of the R4 programme has shown promising results in build ing resilience and reducing poverty among smallholder farmers. From inception to end of 2020, more than 770,000 farmers have enrolled in the programme and more than USD 3.4 million in insurance payouts have been made. The average loss ratio for the programme in Africa is 38%, ranging from 0% in 2009 and 2010 to 136% in 2017, indicating that the programme has not only generated sufficient premiums to date, but has also demonstrated its ability to absorb large losses.

Interview with O. S. Thomas, the Commissioner for Insurance of the Federal Republic of Nigeria

As Nigeria's population grows from about 231 million today to an estimated 400 million by 2050, agricultural productivity must be increased through greater investment in new technologies and innovation to ensure food security. The contribution of Nigeria's agricultural sector to Gross National Product (GNP) has been increasing since 2015. According to the latest data from the National Bureau of Statistics, agriculture's share of GDP has increased from 23% in 2015 to 26% in 2021. As the Nigerian government strives to ensure food security, it has recognised the importance of agricultural insurance for the development of the agricultural sector. As a result, the government, including the National Insurance Commission (NAICOM), has put in place various policies and initiatives to promote the uptake of agricultural insurance by farmers and agribusinesses.

How does NAICOM help protect the important agribusiness sector in Nigeria?

NAICOM's primary role is to ensure the robustness of the insurance sector. In May 2019, it introduced new minimum capital requirements for insurers aimed at strengthening the financial stability and solvency of insurers operating in the country. We also need to encourage the insurance sector to provide the necessary capacity to protect the agricultural sector against the many risks it faces. We see agricultural insurance as an important tool to reduce volatility in the productivity of the sector.

The Nigerian government established a government-owned company to promote agricultural insurance. Why?

Correct. The Nigerian government has been promoting agriculture as a means of diversifying the economy, but also as a means of feeding a growing population. The government has implemented several policies and initiatives to stimulate growth in the sector. One such initiative is the Nigerian Agricultural Insurance Corporation (NAIC), a government-owned company established in 1987 to provide agricultural insurance to farmers and agribusinesses in Nigeria. The NAIC has been at the forefront of providing insurance solutions to farmers, and in recent years private insurance companies have joined in as certain areas of agricultural insurance have been liberalised, such as individual (either private or corporate) commercial agricultural insurance business that is not government sponsored and not eligible for government premium subsidies.

Is the Nigerian insurance sector providing enough capacity for the growing agricultural sector?

Today, capacity is inadequate and insurance penetration in the agricultural sector remains low at around 5%. More needs to be done. Agriculture in Nigeria needs sustainable insurance capacity over time to support its growth. We are encouraging the NAIC and the insurance sector to build this capacity and have received strong support from Africa Re and the IFC (see interview on page 18). However, to provide more capacity, the sector must first invest adequately in technology and expertise to better understand and successfully underwrite agricultural risks.

How does NAICOM support the development of innovative insurance solutions?

As a regulator, we encourage innovative solutions, such as crop yield index insurance or weather derivatives, because they are easier to scale than more traditional indemnity-based insurance solutions. We are about to launch a regulatory sandbox.[9] So far, we have developed the necessary guidelines and are currently testing our solution against international standards to minimise possible errors when launching this new sandbox.

What would you recommend to an insurer looking to develop a new product?

When developing a new product, insurers should put the policyholder first. They should consider all aspects of the product from quality, delivery, pricing and claims, but also all parties involved from start to finish. Ideally, they should also have a report to back up the new products. The reality is that compared to the size of our agricultural sector, we don't see enough new agricultural insurance solutions coming to market. So we encourage the insurance industry to be innovative. We are ready and willing to approve new products.

9 The sandbox is a lab-like place where companies can try out new innovations or business models in a safe environment overseen by the regulator. A regulator can use the sandbox to facilitate development, while at the same time testing their and adapt their policies as needed.

As an insurance regulator, what would you advise private insurance companies to help promote agricultural insurance in Nigeria?

We are confident that the Nigerian insurance sector has the capacity to support the growing agricultural sector. By providing adequate agricultural insurance with sufficient capacity, they can help reduce the inherent volatility of the sector. And if volatility can be reduced, it will attract more investors to invest in Nigeria’s agricultural sector, modernising and strengthening the entire agricultural value chain. With a strong agricultural sector and its fertile soil, Nigeria could potentially become a food basket not only for its own people, but also beyond its borders, improving food security on our continent.

Interview with John Makosya, Senior Consortium Officer, Agro Consortium (U) Ltd

Agro Consortium (U) Ltd. is a coalition of 13 (as at the time of writing) insurance companies and one microinsurer licensed to underwrite agriculture insurance in Uganda under the Uganda Agriculture Insurance Scheme (UAIS). The Agro Consortium (U) Ltd partners are all members of the Uganda Insurers Association.

What do you see as the key factors for improving food security in Uganda?

First. It's vital to protect farmers in times of difficulty, such as after drought, ensuring that they still have some income and can afford to re-plant for the next season. With climate change, this is becoming ever more critical. Uganda has several funds and organisations, like ours, who intervene in such cases to compensate farmers, but there is still a lot of work to do to get the necessary protection to those who need it.

Second. Increased investment in agricultural production, but this can only happen if individuals have sufficient income to invest. Recognising this, the Ugandan Government's Parish Development Model is a lending scheme applied at the local parish level. At the last budget, close to USD 3 million was allocated to the scheme, and it is expected that at least half of this will be invested in agricultural production. Also all initiatives to subsidise insurance premiums and make insurance more affordable to farmers, such as the Uganda Agriculture Insurance Scheme (UAIS), also facilitate financial institutions lending to farmers, as the associated credit risk of loans is reduced.

Why is insurance penetration in Uganda's agricultural sector so low?

It's worth pointing out first that insurance penetration in Uganda is low not just in agricultural insurance, but overall. Insurance companies are perceived for being expensive and not paying claims. A lack of understanding of insurance and its benefit can also be an issue. Motor third-party liability, for example, is considered to be more of a tax in Uganda, rather than an insurance.

Lack of awareness, low literacy levels and high pricing are also major issues. We have to remember that agricultural insurance in Uganda only began in November 2013. In the first few years, just a handful of insurance companies participated and only a few thousand policies were sold. Premium rates therefore remained high, with many areas at 7–12%, and some even reaching 20%. With 98% of Uganda's farmers being smallholders with low literacy levels, insurance was not only unaffordable to many farmers, but also hard to explain, with awareness improving, but still an ongoing issue.

Can you tell us more about the Uganda Agriculture Insurance Scheme and its main challenges?

Given the slow start, several insurers approached the government to discuss the possibility of a Public Private Partnership (PPP) based on private coinsurance and premium subsidies. The UAIS was established, with financial support from the Government, and as of 2016 the Government began providing approximately USD 1.5 million in annual agriculture premium subsidies through the UAIS.

The regulator and the Uganda Insurance Association are working hard to raise awareness of the scheme and help farmers understand what protection is best for them through a variety of initiatives, including training programmes, radio interviews and farmer meetings. For example, many farmers want all-risks coverage, but with drought causing 80% of all claims, all-risks is not necessarily the most appropriate solution. Another challenge is to further improve the take-up of agricultural insurance by digitising processes. However, without sufficient premiums, the funds for such investments are not yet available. Improved standardisation of products and services is another key objective of the scheme.

Another challenge is to further improve the administration of the scheme, including by more digitalisation of the processes. However, without sufficient premiums, the funds for such investment are not yet available. Improved standardisation of products and services, is another key goal.

There are also challenges relating to premium subsidy availability due to over utilisation. This is essential so that we can negotiate lower pricing for farmers through the scheme. However, more recently, as take-up of the scheme has increased – for example, we saw 26% growth overall in sum insured from Q4 2019/20 to Q4 2020/21– the available subsidies are being exhausted faster and there is a lack of clarity around whether or not they will be raised. For example, the 2022/2023 financial year subsidy pot has already been exhausted in Q2. We are already having to tell farmers, individuals who wrestled with themselves and finally took out insurance, that they will have to pay the full premium.

What insurance products does the UAIS offer?

The scheme's products can be divided into indemnity and index-based insurances, and we are continually looking into and providing new product variations to meet the needs of our farmers.

The scheme's indemnity products include crop, livestock, poultry, aquaculture, apiculture, burial and plantation insurance.

Our index products are mostly weather-based, and specifically relative to evapotranspiration. We also offer area yield index insurance and are in the process of testing the Normalised Difference Vegetative Index. We also have an ongoing pilot project looking into soil moisture as a possible index.

Which insurance products do you see as optimal for Uganda's farmers?

We mainly promote, and have been successful in promoting, weather-based index insurance, mostly to protect farmers against drought and excessive rainfall. Even though these protections may not exactly mirror losses and lack the personal touch that many farmers prefer, as all measurements are done remotely, their efficiency and therefore their increased affordability makes them a good solution both for farmers and insurers.

In contrast, for example, with area yield index insurance, enumerators visit farms to carryout crop cutting experiments (CCEs) to measure the yields of randomly selected farmers in each Agro Ecological Zone (AEZ). This puts a human face to the product, but involves a lot of manpower, time and cost. After a loss, farmers need funding quickly so that they can start the next season. Even though we've increased the number of enumerators, back logs are long and can even prevent compensation in time for the next season.

Agro Consortium

Interview with Lovemore Forichi, Senior Underwriter Agriculture – Africa Region, Allianz Re

When one talks about the agricultural sector in Africa, the focus is foremost on the small-scale or subsistence farmers who live off the products they grow. Their farms – mostly a few acres of land – only generates a small margin, if any at all. These smallholder farmers are mostly not commercially minded; their primary objective is to nurture their family. To them insurance presents an extra cost which comes on top of the input-costs that they need to invest to grow their crops or livestock. In terms of managing their risks, they tend to rely on social safety nets other than insurance – like their family, their community or, ultimately, the government.

The agricultural sector in Africa is mostly non-subsidised. However, subsidies are essential to improve the agricultural insurance penetration, as evidenced by the main agricultural insurance markets – USA, China, India – which are all subsidised. Of the worldwide`s approximately USD 46 billion annual premiums (Allianz Re estimate), that are spent on agricultural insurance, about two thirds are generated in subsidised markets. Africa accounts for about 1% of the global agricultural premium volume. South Africa is the only market with a reasonable agricultural insurance penetration, despite having no subsidies. However, the structure of South Africa's agricultural sector is different from most other African countries, as its farms tend to be larger and more commercially driven, and banks in the country tend to demand insurance as collateral for financing of farm inputs.

In agricultural insurance, the government is an important enabler. Senegal, Uganda, Kenya, Rwanda, Nigeria and Zambia (to some extent) are examples where the government participates in and subsidises certain schemes. And so in these countries we see a reasonable degree of insurance penetration. Although an important part of GDP and employment – agriculture is underrepresented in the government's budget of most African countries. Other enablers are Non-Governmental Organisations (NGOs) as well as banks that intervene and either provide subsidies themselves, as many multilateral donors, or – in case of the banks – demand insurance as a collateral to provide credit to farmers.

The third challenge is the product fit. From a farmer's perspective, agricultural insurance products are difficult to understand. They often do no resonate well with reality as farmers see no clear correlation between the premiums they pay and their benefits, as the products are often too narrow in their orientation, and are perceived to be expensive. Due to transparency and operational simplicity, index products tend to be a better fit to address the insurance needs of the smallholder farmers. Most of the index products focus on precipitation – measuring either too much or too little rain. However, farmers are often confronted with other risks too, like pests, diseases or hail, which is a key risk in South Africa.

We thus see an increasing preference for more encompassing products like Areal Yield Index, which cover more and different perils in one policy. But more and more often hybrid covers are provided whereby a defined index covers 80% of the risks of farmers in a specific region – which are mostly water related (drought or excessive rainfall) – and cover is topped-up by an indemnity solution, which protects against the less frequent risks such as fire, and uncontrollable pests and diseases. Through this combination of index (which is mostly satellite based) and indemnity cover, we minimise the problem of basis risk – that farmers see no pay-out when they have a loss, or vice-versa.

Further aspects that challenge the penetration are awareness and distribution, which are somewhat connected. Farmers are often unaware of the existence and benefits of agricultural insurance, even if they are familiar with the concept of insurance. Both the public and the private sector need to make great efforts to educate and reach out to the end-consumer – the farmer. Insurers can't do that all by themselves. They are more effective if they team up with aggregators, such as banks, telecoms, cooperatives – the latter being mostly community organisation that may oversee input-buying, the distribution of harvest or even running a communal bank account for the farmers. The heads of these cooperatives might serve as important «foxes», mediating between insurers and farmers.

Obviously, the advent of the information and communication technology (ICT) has largely improved the outreach to farmers through mobile platforms or tablets and particularly mobile wallets which facilitate premium collection and claims payments. Allianz is currently collaborating with several insurtech partners that help with the distribution of index products through mobile applications that resonate well with the reality of farmers.

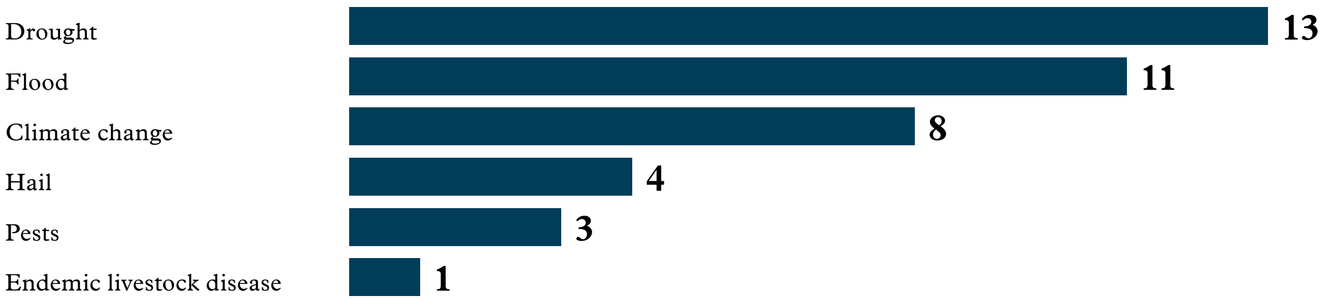
Banks also serve as important aggregators as farmers need access to credit to improve their productivity. Most smallholder farmers pay back the loan with proceeds from their yield. However, frequently farmers are unable to provide collateral for their loan to the bank, because typically they have no title to the land that they cultivate. It is mostly communal or government owned. Thus, insurance can serve as collateral for a bank loan, and often the two are bundled and distributed through the bank to the farmers. Here we are talking about financial inclusion of previously underserved segment of the farming community, and keeping the farmers doing what they know and enjoy best - farming.

Online survey findings on food security and agricultural insurance

Fourteen respondents completed the African Insurance Pulse 2023 online survey on food security and agricultural insurance, eight from English-speaking countries and six from French-speaking countries. Of this group, five were based in Nigeria, three in Morocco, two in South Africa, two in Zambia and one expert from Côte d'Ivoire.[10] Most of the companies represented in this survey serve a single market, with only three companies serving more than one market.

DROUGHT IS THE MAIN AGRICULTURAL RISK IN MOST AFRICAN MARKETS

Chart 8: What are the largest risks to agriculture in your markets (select top three)?



The top three risks to agriculture in these countries are drought with thirteen mentions, followed by floods with eleven mentions and extreme weather due to global warming with eight mentions.

10 One person did not specify the country in which the company is based.

AGRICULTURAL INSURANCE IS A GROWTH SEGMENT: PREMIUMS AND CAPACITY ARE RISING, BUT FROM A LOW BASE

Chart 9: Have agricultural insurance premiums in your markets increased, stabilised or decreased over the past three years (please select the most appropriate)?

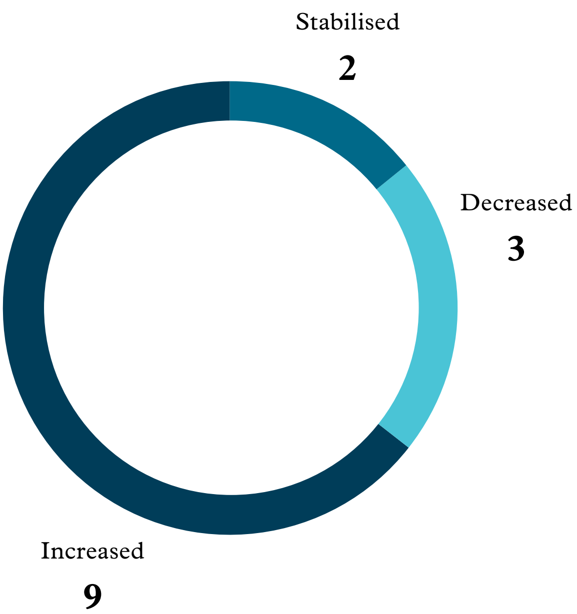
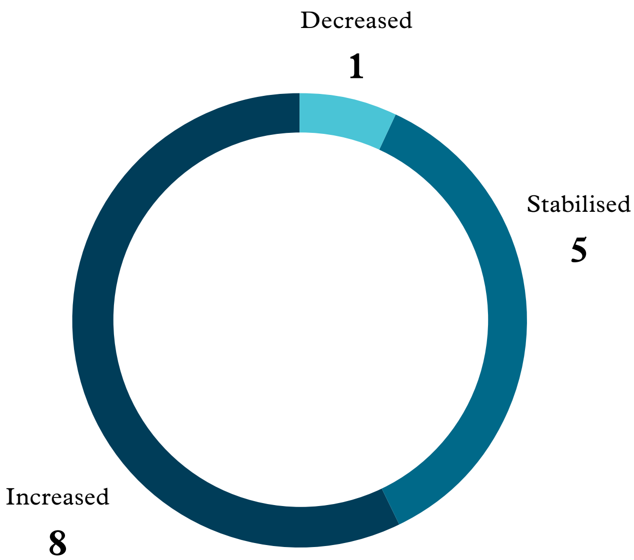


Chart 10: Has agricultural insurance capacity in your markets increased, stabilised or decreased over the past three years (please select the most appropriate)?

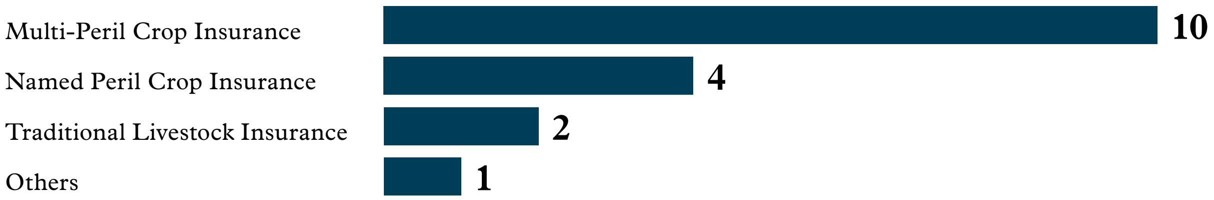


Out of fourteen respondents, nine have noticed an increase in agricultural insurance premiums due to extreme weather events causing sustained high losses over the last three years. This rise in premiums can also be attributed to increases in the cost of commodities and agricultural machinery. There has also been a greater awareness of the adverse effects of climate change, and these have been better priced in. One company reported that it had invested in training and marketing to support premium growth. For those who reported a decline in premiums, the main reason was a reduction in government funding for agricultural insurance. In contrast, the Central Bank of Nigeria's agricultural credit programme has stimulated premium growth. Eight of the experts also observed an increase in re/insurance capacity to support the growth in the agricultural sector. Five observed a stabilisation and only one a decrease.

All fourteen experts see new opportunities for agri-cultural insurers in the future as the effects of global warming need to be addressed. They expect demand for agricultural insurance to continue to grow as awareness of the issue increases and public authorities become more involved. In particular, insurance products based on weather and climate indices are expected to be the driving force behind this expansion.

MULTI-PERIL CROP INSURANCE AND AREA YIELD INDEX INSURANCE ARE THE MOST WIDELY OFFERED AGRICULTURAL INSURANCE SOLUTIONS

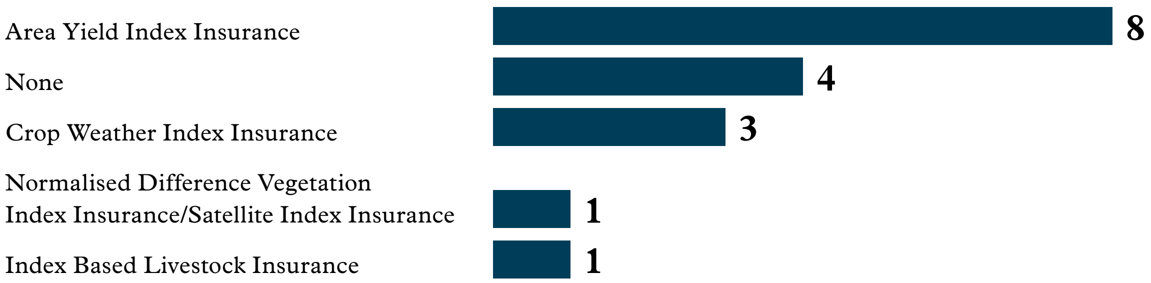
Chart 11: What types of indemnity-based agricultural insurance products are available in your market?



All respondents of the online survey offer one or more indemnity-based agricultural products, but not all offer index-linked agricultural insurance products.

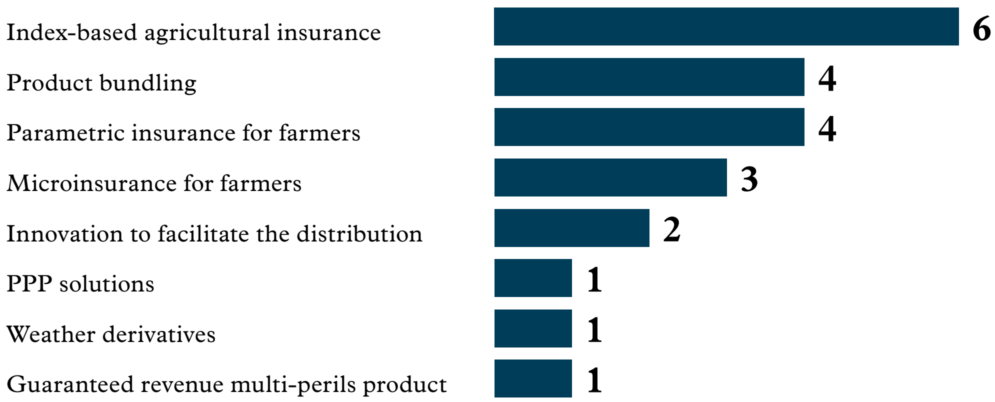
Among the indemnity-based solutions, multi-peril crop insurance is the most commonly offered solution to farmers, such as area yield index insurance for index-linked products.

Chart 12: What type of index-linked agricultural insurance products are available in your market?



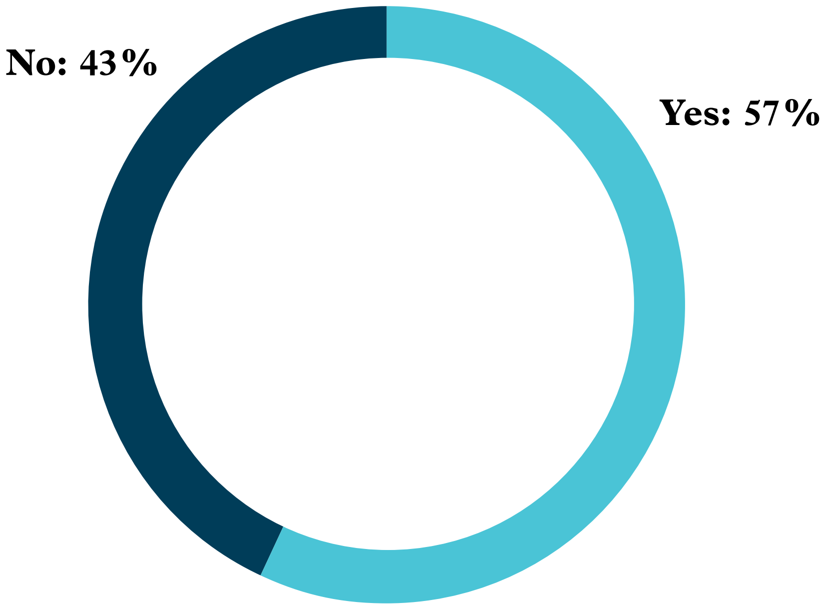
The agricultural insurers who responded to the online survey are very active in developing innovations to better serve the agricultural sector in their respective countries. A total of 22 innovations in agricultural insurance were offered by the companies. Only two companies did not innovate during this period. Most innovation took place in the category of index-linked agricultural insurance products (6 mentions of index-based solutions, 4 mentions of parametric insurance and one mention for weather derivatives). Several providers have offered innovation in that they bundled products (e.g. agricultural insurance with credit or surety products).

Chart 13: What innovations have you introduced in agriculture insurance over the past three years (select what best applies)?



TACKLING FOOD INSECURITY IN AFRICA THROUGH PPP SOLUTIONS

Chart 14: Do your markets have public-private partnerships in place for agricultural insurance?



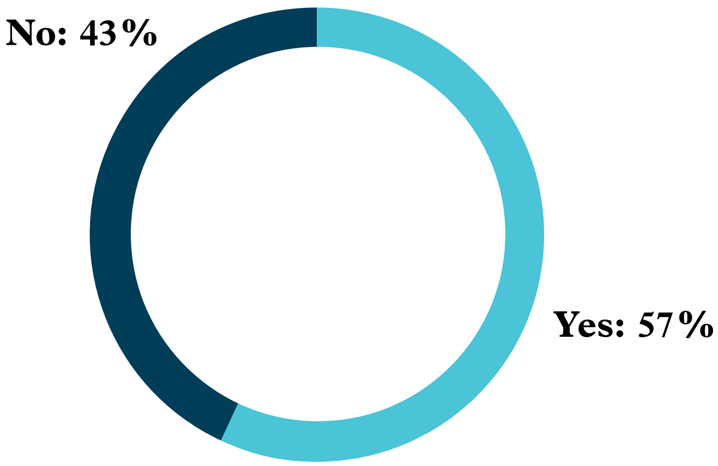
To better address the significant problem of food insecurity in many African countries, the public and private sectors are working hand in hand through public-private partnership solutions. Such PPP solutions already exist in many key agricultural insurance markets. Here are some of those mentioned by the respondents:

- The Kenya Agriculture Insurance Programme (KAIP) is a government-sponsored initiative that aims to provide farmers with insurance against crop losses caused by drought, flood, pests and diseases. The programme provides farmers with affordable and accessible insurance to protect their crops and incomes, ultimately improving the country's food security.
- The Kenya Farm Input Supply Programme (FISP) is a government initiative to provide subsidised agricultural inputs such as seeds and fertiliser to smallholder farmers in Kenya. The programme aims to increase agricultural productivity and improve farmers' livelihoods.
- The Central Bank of Nigeria's Anchors Borrowers Programme is a scheme that provides loans to smallholder farmers to improve agricultural productivity and ensure food security. The programme aims to create a link between anchor companies involved in the processing of key agricultural commodities and smallholder farmers.

- The Global Index Insurance Facility (GIIF) is a World Bank initiative that aims to increase the availability of affordable and reliable insurance in developing countries, particularly for smallholder farmers and other vulnerable groups, to help mitigate the effects of climate change and other risks. It provides technical assistance and financial support to insurance providers to develop and implement index-based insurance products tailored to the needs of local communities.
- MAMDA offers an insurance programme that protects Moroccan agricultural producers against losses due to various risks such as weather events, pests and diseases. It is a public-private partnership between the Moroccan government and the agricultural sector to support and stabilise the country's agricultural industry.

According to the majority of respondents, policymakers and regulators are supportive of agricultural insurance in their respective markets. Governments support the agricultural sector mainly through premium subsidies, PPP solutions, farmer support programmes (bundled with insurance) and lower taxes. Regulators support the growth of agricultural insurance by approving products and supporting capacity building and marketing. However, six out of fourteen respondents believe that governments could do more.

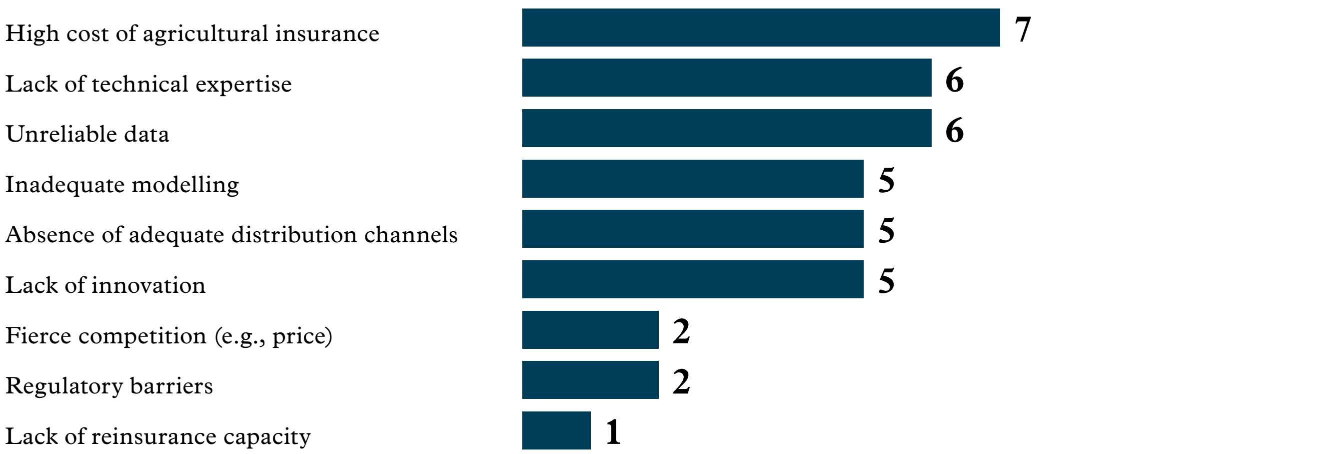
Chart 15: Are regulators/policymakers supporting agriculture insurance in your markets?



CHALLENGES TO AGRICULTURAL INSURANCE SUPPLY AND DEMAND GROWTH ARE MANY

Chart 16: What factors challenge demand growth in agricultural insurance (select top three)?

Chart 17: What factors challenge supply-side growth in agricultural insurance (select top three)?



According to respondents, awareness of agricultural insurance combined with affordability and limited understanding are the top three factors limiting growth on the demand side.

On the supply side, the number of challenges limiting growth is even greater. The top three are the high cost of insurance (mostly indemnity-based agricultural insurance solutions), followed by lack of technical expertise and insufficient or unreliable risk data.

All of these challenges – on both the supply and demand sides – require long-term efforts by the insurance sector in partnership with the public sector to overcome.

The AIO would like to thank all agricultural insurance experts for their generous participation!

1. **Evance Rabongo, Head of Agriculture Underwriting at Continental Reinsurance**
   «Climate change is a reality that threatens our way of life in many ways, the most important of which is food insecurity. To feed Africa, we must therefore empower our farmers and safeguard their production.»
2. **Leonard Maweu, Agricultural and Micro Insurance Manager at W-SAFE Reinsurance Limited**
   «Agricultural insurance is an important change management tool for farmers and could contribute to food security for people in Africa. While traditional insurance is simply too expensive for most smallholder farmers, index-based agricultural insurance could be a promising answer with lower premiums and faster payouts, but key barriers to wider uptake and availability need to be addressed.»
3. **Imo O. Imo, Chief Strategy & Product Officer/Head Agric Desk at Linkage Assurance PLC**
   «Agricultural insurance is vital for food security in Africa!»
4. **John Adedayo Aladetoyinbo, Royal Exchange General Insurance Company Limited**
5. **Violet Kapekele, Inclusive Insurance Manager at Hollard Insurance Zambia**
   «Having uninsured crops robs you of sleep.»
6. **Silenga Wamunyima (BSc. Agriculture), Responsible for the Agriculture Business Unit at Professional Insurance Corporation Zambia PLC**
   «Continued effort, not strength or intelligence, is the key to unlocking our potential.» (a quote by Winston Churchill)
7. **Maurice Koffi Kobenan, Agricultural Underwriter at Continental Reinsurance**
8. **Amine Ryane, Director of the African Disaster Risk Centre (Centre Africain des Risques Catastrophiques)**
   «Insuring agriculture in Africa means securing the future of an entire nation. Investing in the protection of farmers today is sowing the seeds of tomorrow's food security and prosperity.»
9. **Laila Elbahtouri, Head of Africa, SCR Morocco**
   «We do not inherit the earth from our ancestors, we borrow it from our children. » (a quote from Saint Exupéry)
10. **Alain Ehouman, Head of Agricultural Risks at Atlantique Assurances Cote d'Ivoire**
    «The success of agricultural insurance depends on a strong Public Private Partnership.»