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Guidelines
for the Design and Implementation of the Tanzania **Agriculture Insurance Scheme**

December 2023

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Guidelines for the Design and Implementation of the Tanzania Agriculture Insurance Scheme

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[1] Each document is self-contained and includes a table of contents, references and annexes.

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List of acronyms

ACISP	Africa College of Insurance and Social Protection
AMCOS	Agriculture Marketing Cooperative Societies
ARMA	Agricultural Risk Management Agency
ASDP-II	Second Agricultural Sector Development Programme II
ASLM	Agriculture Line Ministries
ATI	Association of Tanzania Insurers
AYII	area yield index insurance
CCE	crop cutting experiment
CNAAS	National Agricultural Insurance Company of Senegal
DRF	disaster risk financing
DRIVE	De-Risking, Inclusion and Value Enhancement of Pastoral Economies in the Horn of Africa
FYDP-III	Third National Five Year Development Plan
GAIP	Ghana Agricultural Insurance Program
GOT	Government of the United Republic of Tanzania
GWP	Gross written premium
IAT	International Advisory Team
IBLI	index-based livestock insurance
IFM	Institute of Finance Management
IIT	Insurance Institute of Tanzania
INSURED	Insurance for Rural Resilience and Economic Development
KAIP	Kenya Agricultural Insurance and Programme
KLIP	Kenya Livestock Insurance Program
M&E	Monitoring and Evaluation
MFIs	Microfinance Institutions
MMT	million metric tonnes
MOA	Ministry of Agriculture
MOF	Ministry of Finance
MOLF	Ministry of Livestock and Fisheries
MPCI	multiple-peril crop insurance
NDVI	normalized difference vegetation index
NPCI	named peril crop insurance
PMFBY	Pradhan Mantri Fasal Bima Yojana
PMO	Prime Minister's Office
SACCO	Savings and Credit Cooperative Organisation
SCGS	Smallholder Credit Guarantee Scheme
SIDA	Swedish International Development Cooperation Agency
SIIPE	Satellite Index Insurance for Pastoralists in Ethiopia
TA	technical assistance
TAIC	Tanzania Agriculture Insurance Consortium
TAIS	Tanzania Agriculture Insurance Scheme
Tan-Re	Tanzania National Reinsurance Corporation Ltd
TIRA	Tanzanian Insurance Regulatory Authority
TSU	Technical Support Unit
UAIS	Uganda Agricultural Insurance Scheme
WII	weather index insurance

Foreword

The agriculture sector plays a pivotal role in Tanzania's economy contributing approximately 26% of the country's GDP and 30% of total export earnings. Despite its vital role in the economy, the sector has yet to reach substantial commercialization and productivity frontiers. Agriculture production and farmers in the country face numerous inherent risks and uncertainties, including climate change, weather variability, pests, and diseases.

It is of great concern to the Government of the United Republic of Tanzania that the agriculture sector has not made significant use of agricultural insurance services to mitigate the risks that continue to limit the sector's productivity. For the past decade, agricultural insurance has been contributing less than 1% of the total insurance market share. This is partly due to the fact that the agricultural insurance products on offer mainly target commercial farmers and not the vast majority of the farming community who are smallholder farmers who cannot afford insurance premiums.

Cognizant of the importance of the agriculture sector and the potential role of the insurance industry in mitigating agriculture sector risks, the Government has announced its aims regarding how the industry is expected to contribute to the nation's agricultural activities. This includes the need to ensure the availability and accessibility of insurance to all actors in the agriculture sector, including smallholder farmers. The Government aims to raise the contribution of agricultural insurance to the total general insurance business from less than 1% currently to 10% by 2030. In order to achieve this target, the Government has started implementing a number of strategies that will lead to the establishment of a national agriculture insurance scheme by July 2024. This will be known as the Tanzania Agriculture Insurance Scheme (TAIS).

On behalf of the Tanzania Insurance Regulatory Authority (TIRA), I am pleased to register my heartfelt appreciation and gratitude to the International Fund for Agricultural Development (IFAD) and its Insurance for Rural Resilience and Economic Development (INSURED) programme for contributing to the Government's efforts to establish the TAIS by providing technical assistance informing important aspects of the design and implementation of the scheme.

IFAD/INSURED carried out a study on agricultural insurance in Tanzania and submitted the report and the technical notes presented in this document. These will guide the Government and other stakeholders in their work to establish and implement the TAIS.

The report provides valuable insights, recommendations, and lessons learned from other comparable jurisdictions in Africa and beyond. It will serve as a valuable resource for policymakers, insurance providers, farmers' organizations, and other stakeholders involved in the development of the agriculture sector. By leveraging the findings, we will work collectively towards a more sustainable, resilient, and prosperous agricultural landscape in Tanzania.

I wish to express my sincere appreciation and gratitude to all the individuals and organizations that have contributed to the study in various ways, including but not necessarily limited to technical guidance, access to information, and data. These include (in no particular order of importance) the Prime Minister's Office - Disaster Management Department; the Ministry of Agriculture; the Ministry of Livestock and Fisheries; the Ministry of Finance; the Bank of Tanzania; the National Bureau of Statistics; the Tanzania Agriculture Development Bank; NMB Limited; the Tanzania Association of Livestock Farmers; the Tanzania Forest Services Agency; and the Association of Tanzania Insurers.

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COMMISSIONER OF INSURANCE

Acknowledgments

This report and the Technical Notes that follow have been developed by an IFAD-INSURED team comprising Charles Stutley and Andrea Stoppa together with Emily Coleman and Joy Kemibaro, under the coordination of Jacqueline Machangu-Motcho and Tara James, and the supervision of Samwel Mwiru and Edgar Shao, TIRA. The documents were finalized with the editing support of Hazel Bedford.

Executive Summary of Key Findings and Recommendations

Context and objectives

The International Fund for Agricultural Development (IFAD), through the Insurance for Rural Resilience and Economic Development Programme (INSURED),[2] has been collaborating with the Tanzanian Insurance Regulatory Authority (TIRA) to provide technical assistance (TA) to the development of the Tanzania Agricultural Insurance Scheme (TAIS). The TA support has been carried out through a combination of desk research, in-country data and information collection, key informant interviews, and meetings with the Commissioner of Insurance, TIRA and the TAIS Technical Committee.

The outputs of the TA activity carried out between 2022 to 2023 are the report "Guidelines for Design and Implementation of TAIS" (this document) and the following Technical Notes: 1) Guidance Note on the Development of an Institutional Framework for the TAIS; 2) Technical Review of the TIRA 2019 Draft Agriculture Insurance Regulations; 3) Roadmap for the Development and Implementation of the TAIS; 4) TAIS Projected Insurance Uptake and Fiscal Costs 2024 to 2030. As a package, this report and the Technical Notes provide practical guidance and best practice knowledge on the different aspects required to bring the TAIS forward to implementation.

The objective of this report is to provide TIRA and the Government of the United Republic of Tanzania (GOT) with technical advice and recommendations, based on research and best practice, on the framework and operational considerations that can guide TAIS activities in the short and medium term.

Agriculture and risk

Agriculture is a cornerstone of Tanzania's economy. The country has 95.5 million hectares of land, of which 44 million hectares are arable, with only 23% under cultivation. The sector contributes to approximately 26% of the country's GDP and accounts for about 30% of total exports (IFAD, 2022). Over a quarter of the population rely on agriculture as their main source of income (FSDT, 2023).

Crop production is the primary activity and livestock production is also very important for smallholder farmers in Tanzania. Food crop production totals 9.1 Million Metric Tons (MMT) and the country has the second largest livestock cattle herd in Africa, with about 34 million head of cattle in total. Tanzania is also richly endowed with forest resources and aquaculture is a growing sector, and both these sectors will be part of TAIS intervention.

The Tanzania agricultural sector is dominated by poor, smallholder producers and, despite its vital role in the economy, it is yet to reach commercialization and productivity frontiers. About 80% of crops are produced by smallholders (IFAD, 2022) and limited access to rural finance and markets exacerbates smallholders' low productivity.

Most farmers in Tanzania are highly exposed to risks. Agriculture production and farm incomes in Tanzania face several inherent risks and uncertainties such as weather variability (increasing due to climate change), pests, and diseases. Susceptibility of agriculture to these risks is compounded by the aforementioned constraints and by outbreak of epidemics and man-made disasters such as fire (TIRA, 2021).

[2] The INSURED programme is financed by the Swedish International Development Cooperation Agency (Sida) and implemented by IFAD through the Platform for Agricultural Risk Management (PARM). It provides technical assistance on agricultural insurance and climate risk insurance to benefit the IFAD-financed portfolio and its partners.

Agricultural insurance

Agricultural insurance is needed to help manage agricultural risks. Most farmers in Tanzania, especially smallholders, are highly exposed to risk, which impacts their consumption, livelihoods, and the wider economy. This has trapped farmers in a low productivity cycle and they do not have access to risk mitigation measures to break out. Agricultural insurance can be one important tool – as part of an overall risk management strategy – to protect farmers, helping to not only stabilize farm income, but also to allow farmers, livestock keepers, aquaculture farmers and foresters to reinitiate production activities after losses have been experienced (TIRA, 2021).

Agricultural insurance is currently a very small class of general insurance business in Tanzania and in 2021 agricultural insurance gross written premium (GWP) amounted to TZS 1,324 million or 0.2% of total market premium. In 2021, six insurance companies provided agricultural insurance in Tanzania. Most companies focus sales of their traditional indemnity-based multiple peril crop insurance (MPCI) or named-peril crop insurance (NPCI) on medium and large cereal producers and agribusinesses with linkages to bank credit. The same applies to traditional livestock insurance, with a focus on provision of individual animal accidental death and named disease cover to commercial dairy producers.

TAIS Objectives and the Public-Private Partnership approach

The broad objective of the TAIS is to contribute to the transformation of subsistence farmers into sustainable commercial farmers by enhancing resilience measures from shock events such as weather and climate vagaries, pests, and diseases. The specific objectives of the scheme, as stated in TIRA, 2021, are to:

i. Promote investment in the agriculture sector.
ii. Promote adoption of new and improved farming practices.
iii. Provide financial support to farmers in the event of losses arising from natural disasters.
iv. Increase the flow of agriculture credit from lending institutions to farmers.
v. Minimize or eliminate the need for emergency assistance provided by government during period of agriculture disaster.
vi. Align insurance with other financial sector players in enabling farmers to access loans for agriculture activities.
vii. Support financial inclusion initiatives.

Under the TAIS, TIRA and GOT are targeting a major increase in agricultural insurance penetration with a plan to reach an agricultural insurance GWP value of 10% of the total general insurance GWP by 2030.

International experience shows that where agricultural insurance programs for smallholder farmers in Africa have successfully scaled-up these have tended to be based on a public-private partnership (PPP) model. Under such an approach the roles of private and public partners are clearly identified: the private sector is best placed to assume responsibility for all product design and rating and risk acceptance, underwriting and claims adjusting, and claims settlement functions; the public sector, in turn, is best placed to provide an enabling legal and regulatory environment; to invest in data strengthening for insurance purposes; to conduct public insurance literacy and awareness campaigns; to finance premium subsidies to make agricultural insurance more affordable and accessible to smallholder farmers, through to acting as a reinsurer in some cases, especially in the start-up phase of new programs (Mahul and Stutley, 2010; Schaeffer and Waters, 2016).

Based on international experience, and in particular on lessons learnt in the development of agricultural insurance programs in Africa, IFAD-INSURED recommends establishing TAIS on the basis of a PPP approach. IFAD-INSURED's suggestion is for Tanzania to start with a lean PPP structure and, as the program develops, potentially plan for more complex structures. The key components around

which such a framework could be structured are: (i) a High-level Steering Committee, (ii) an Interministerial Technical Support Unit and (iii) a Technical Committee.

The private sector is going to take part in TAIS through the Tanzania Agricultural Insurance Consortium (TAIC), launched in July 2023. Interaction between the public and private components of the systems would take place in the Technical Committee. If considered useful, an International Advisory Team could be also set up to provide technical and policy advice, in particular in the initial stages of development and implementation of TAIS products.

Product development, financial support and regulatory environment

The TAIS design, testing and implementation activities should focus on the following insurance products:

- Area Yield Index Insurance (AYII) and other indices for food crops
- Named Peril Crop Insurance (NPCI) for cash crops
- Dairy Cattle indemnity insurance
- Index Based Livestock Insurance (IBLI) for pastoralists (based on NDVI or other indices)
- Aquaculture insurance (Named Peril Indemnity)
- Forestry insurance (Fire FLEXA)

The recommendation is to follow a gradual product development approach, in which the design and implementation activities of the different products are spread over the period 2023 – 2026.

GOT should define the level of support that can be provided to the TAIS system and to the related insurance products. International experience has shown that fiscal support is a key driver of a successful development of an agricultural insurance programme. Support can be provided in the form of premium subsidies, but also for complementary activities such as registering farmers and livestock producers; enhancing farmer insurance awareness and education; strengthening infrastructure and data collection and management systems. A balanced and sustainable long-term commitment of fiscal support will be critical for the long-term sustainability of TAIS.

At the request of TIRA, IFAD-INSURED has prepared some uptake and financial projections for TAIS for the period 2024 up to 2030 along with the indicative costs to GOT of premium subsidies and the costs of other forms of financial support to scheme implementation. Projections have been developed for three main growth scenarios according to the level of agricultural insurance premium reached by 2030 as a share of non-life Gross Written Premium: HIGH, 10%; MEDIUM, 7.5%; LOW, 5%. For the HIGH growth scenario the total costs to government would amount to USD 115 million over seven years, of which USD 96.6 million are for premium subsidies. For the LOW growth scenario the total costs to government would amount to USD 39.7 million over seven years, of which USD 33.5 million are for premium subsidies (full details are presented in Technical Note 4).

Dedicated regulations for agricultural insurance should be developed and enacted. To this end, following a request from TIRA, the IFAD-INSURED team reviewed the 2019 Draft Agricultural Regulations. The suggestions provided in Technical Note 2 include: (i) Extend the scope of regulations to all agricultural insurance products, TAIS and non-TAIS; (ii) Devote specific attention to regulating index insurance products, which are likely to play a major role in the TAIS framework; (iii) Explicitly define the premium subsidy regime that will apply to TAIS and the conditions for insurers to access premium subsidy support; (iv) Consider issuing "Annual Agricultural Insurance Plans", to address more operational and variable details of TAIS, while leaving the Regulations to cover the general features of agricultural insurance; (v) Set up provisions for timely approval of agricultural insurance products and consider a potential “sandbox” approach for regulating innovative products.

A Roadmap for 2023 to 2030

IFAD-INSURED has developed a detailed Roadmap for the implementation of TAIS activities. The Roadmap covers the period from September 2023 to the end of 2030 and is structured in the following groups of tasks and activities that will need to be performed in the planning and design, implementation and scale-up of TAIS over this period:

1. TAIS INSTITUTIONAL FRAMEWORK
2. TAIS NATIONAL POLICY
3. FINANCIAL SUPPORT FOR TAIS FROM 2024 to 2030
4. REGULATION FOR AGRICULTURAL INSURANCE
5. INDUSTRY MARKET ARRANGEMENTS FOR AGRICULTURAL INSURANCE
6. PRODUCT DESIGN AND IMPLEMENTATION
7. MONITORING & EVALUATION and AUDIT
8. PRODUCT DESIGN AND IMPLEMENTATION WORK PLANS (to be developed for each type of insurance product)

The sequence and timing proposed by IFAD INSURED in the Roadmap that has been developed (Technical Note 3) are tentative suggestions and the definition of the actual progression should be left to TAIS stakeholders.

Finally, it is suggested that all TAIS stakeholders carefully take stock of the potential risks that can hamper a successful implementation of TAIS and consider adopting the appropriate mitigation measures. The following table provides examples of the risks that TAIS may face and of the measures that can mitigate their impact.

Table 1. Potential risks and mitigation measures for a successful implementation of TAIS

Risks	Mitigation Measures
Lack of participation by the insurance industry	- Develop a dedicated institutional structure in which the public and private sectors can interact and the requirements and concerns of the private sector can be addressed - Provide fiscal support to agricultural insurance to make the business proposition more sustainable - Establish accurate agricultural insurance regulation to generate a clear and incentivizing operational environment
Lack of take-up from farmers	- Identify the appropriate farmer segments to be targeted - Link insurance with a conditional requirement or value proposition - Reduce the cost of the covers for farmers through dedicated fiscal support (mainly premium co-financing)
Poor performance of the insurance products	- Carry out appropriate design of the products (particularly for index insurance) - Set up a structured and well-planned testing activity for new products, and test different potential approaches comparatively - Carefully monitor and evaluate the results of the testing activity - Strengthen data collection
Issues in long-term sustainability of the program	- Set up a dedicated and effective institutional framework to manage the program - Establish high-level effective public governance of the agricultural insurance program - Carefully assess fiscal cost requirements to support the program and make long-term commitments

Source: World Bank, Forthcoming.

1. Background and introduction

The International Fund for Agricultural Development (IFAD), through the "Insurance for Rural Resilience and Economic Development Programme" (INSURED)[3], has been collaborating with the Tanzania Insurance Regulatory Authority (TIRA) to provide Technical Assistance (TA) to the development of the Tanzania Agricultural Insurance Scheme (TAIS). The TA support was informed by the needs identified by TIRA and the TAIS Technical/Steering Committee following the INSURED-supported study tour to Uganda.[4] It has been carried out through a combination of desk research, in-country data and information collection, key informant interviews, and meetings with the Commissioner of Insurance, TIRA and the TAIS Technical Committee.

The output of the TA activity carried out between 2022 to 2023 are this report "Guidelines for Design and Implementation of TAIS" and the following Technical Notes: 1) Guidance Note on Developing an Institutional Framework for TAIS; 2) Technical Review of the 2019 Agricultural Insurance Regulation Draft; 3) Roadmap for the Development and Implementation of TAIS; 4) TAIS Projected Insurance Uptake and Fiscal Costs 2024 to 2030. As a package, this report and the attached Technical Notes provide practical guidance and best practice knowledge on the different aspects required to bring the TAIS forward to implementation.

This report 'Guidelines for the Design and Implementation of TAIS' is the document that summarizes the findings of the TA activity and includes within it extracts from the four Technical Notes. This report should be read in conjunction with the Technical Notes.

The objective of this report is to provide TIRA and the Government of the United Republic of Tanzania (GOT) with technical advice and recommendations based on research and best practice on the framework and operational considerations that can guide TAIS activities in the short- and medium-term. The document presents technical guidance and recommended ways forward on four main pillars: legal and institutional options, technical agricultural insurance product design and options; operational considerations; and financial support to achieving sustained scale-up and sustainability of TAIS, also drawing from the main findings of the other four Deliverables.

The IFAD-INSURED team wish to extend appreciation to the Commissioner of Insurance and TIRA for their collaboration in the conduct of this TA.

This report is divided into the following remaining sections:

- **Section 2 presents a brief overview of the agricultural sector in the United Republic of Tanzania** (henceforth referred to as Tanzania) and the main natural and climatic risk exposures faced by the country's 7.8 million farmers.
- **Section 3 deals with GOT's objectives to transform the agricultural sector** between now and 2030 and the potential roles of the TAIS to achieving these objectives.
- **Section 4 contains a review of public-private-partnership (PPP) programs for agricultural insurance and presents PPP institutional framework options for TAIS**.
- **Section 5 presents an overview of the findings of a technical review of TIRA's draft agricultural insurance regulations 2019**, which is available in full in Technical Note 2 "Technical Review of the TIRA 2019 Draft Agriculture Insurance Regulations".
- **Section 6 presents a review of the range of traditional indemnity-based and newer index-based insurance products that are available for development under TAIS.**

[3] The INSURED programme is financed by the Swedish International Development Cooperation Agency (Sida) and implemented by IFAD through the Platform for Agricultural Risk Management (PARM). It provides technical assistance on agricultural insurance and climate risk insurance to benefit the IFAD-financed portfolio and its partners.
[4] INSURED supported a study tour of key Tanzanian stakeholders to learn from the Ugandan Agricultural Insurance Scheme (UAIS), from 31st January 2022 to 4th February 2022.

- **Section 7 deals with operating systems, procedures and requirements for agricultural insurance programs**.
- **Section 8 presents a summary of various TAIS insurance uptake and financial projections** of the costs of government premium subsidies and other financial costs, which are explored in more detail in Technical Note 4 "Tanzania Agriculture Insurance Scheme: Projected Insurance Uptake and Fiscal Costs 2024 to 2030".
- **Section 9 presents a Roadmap** for the implementation and scale-up of TAIS between 2023 and 2030.
- **Section 10 presents the conclusions and recommendations arising out of this work**.

Currency exchange: An exchange rate of TZS 2,400 = USD 1.00 has been used in this document, which is in line with that used in the tool outlined in Technical Note 4.

2. Overview of agricultural sector and risk exposure in Tanzania

Agriculture is a cornerstone of Tanzania's economy. The country has 95.5 million hectares of land, of which 44 million hectares are arable, with only 23% of area under cultivation. The sector contributes to approximately 26% of the country's GDP and accounts for about 30% of total exports (IFAD, 2022). Over a quarter of the population rely on agriculture as their main source of income (FSDT, 2023). According to the 2016/17 Annual Agriculture Sample Survey on Crop and Livestock, the total area of farmland used in crop production was 17,120,571 ha of which 99.2% was in Tanzania Mainland and 0.8% in Zanzibar (NBS, 2017). The National Sample Census of Agriculture 2019/20 reports that of the 7,837,405 households involved in agricultural activities, 5,088,135 (65%) were involved in crops only, 2,589,156 (33%) were engaged in crops and livestock, and 154,291 (2%) were involved in livestock only. The least number of households were involved in fish farming (1,358) and pastoralism (1,465), or less than one percent (NBS, 2021).

Crop production is the primary agricultural activity. Food crop production totals 9.1 Million Metric Tons (MMT) of which maize is the major crop (5.7 MMT, 62%); followed by paddy (2.9 MMT, 32%); and sorghum (0.5 MMT, 6%). The main roots and tubers grown by farmers include cassava, sweet potato, and Irish potato. Oilseed production comprises mainly sunflower and sesame. The principal cash crops are coffee, tea, cotton, and cloves (NBS, 2021).

Livestock production is very important for smallholder farmers in Tanzania. The country has the second largest livestock cattle herd in Africa with about 34 million head of cattle in total.[5] More than a third of households depend on livestock rearing for their livelihoods and the sector accounts for 7.4% of GDP (NBS, 2021).

Aquaculture is a growing sector in Tanzania. In 2019, the Fish Farming Census results indicate that 30,261 households were engaged in fish farming, whereby 71.7% were engaged in tilapia fish farming and produced 10,690 tons of fish (NBS, 2021).

Tanzania is also richly endowed with forest resources, which cover 48.1 million ha or 55% of the total surface land area of Tanzania mainland including woodlands, catchment forests, mangroves, coastal forests, and government forest plantations (NBS, 2021).

Tanzania agricultural sector is dominated by poor, smallholder producers. About 80% of crops are produced by smallholders (IFAD, 2022). These farmers mostly live in poverty, which is most prevalent in

[5] FAOSTAT Database accessed in April 2023. Data available up to 2020.

rural areas. Some 80% of the country's poor live in rural areas: the poverty rate is twice as high in rural areas (31.3%) than in urban areas (15.8%) Furthermore, food insecurity is increasing (IFAD, 2022).

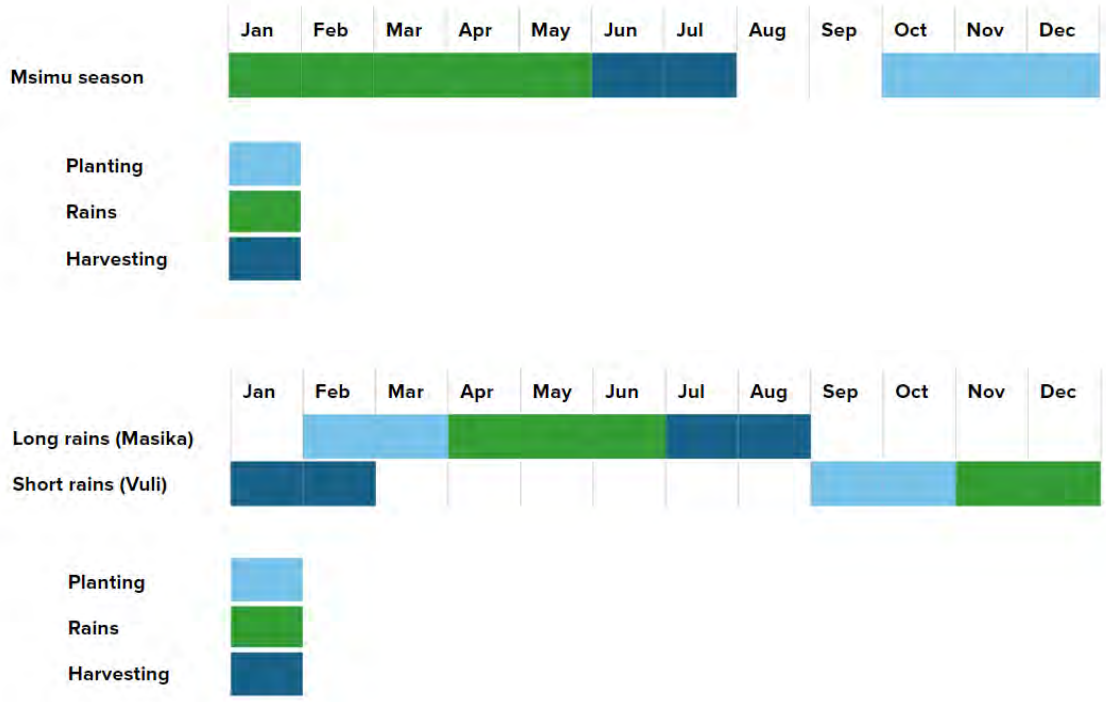
Despite its vital role in the economy, the agricultural sector is yet to reach commercialization and productivity frontiers and faces many constraints. Most crop production in Tanzania comes from rainfed, low-input smallholder farms on plots of 2.1 ha on average (NBS, 2021). Smallholder farmers typically use very low levels of modern technology. The total planted area has only 2.5% under irrigation; with 77% planted to local seeds, and only 21% to improved seeds. Fertilizers are applied to 21% of crop cultivated area, of which 61% is organic fertilizer and 39% is purchased inorganic fertilizer (NBS, 2021). In terms of fisheries, there is unsustainable exploitation of fisheries resources, insufficient storage and value-addition facilities, and poor infrastructure (IFAD, 2022).

Limited access to rural finance and markets exacerbates smallholders' low productivity. Asset ownership is key to accessing credit from most financial service providers. The last Finscope survey reported that this is a huge barrier to access to finance, since only 15% of adults have any form of documentation to prove their ownership of land (FSDT, 2023). Less than a quarter of Tanzanian women own the land they live on.

Most farmers in Tanzania are highly exposed to risks. Agriculture production and farm incomes in Tanzania face several inherent risks and uncertainties such as weather variability (which is increasing due to climate change), pests, and diseases. Susceptibility of agriculture to these risks is compounded by the constraints and by outbreak of epidemics and man-made disasters such as fire (TIRA, 2021).

Rainfed agriculture is highly exposed to weather risk, particularly to the extremes of excess rain and flooding or rainfall deficit and drought (NBS, 2021). There are two rainy seasons and therefore two cropping seasons in northern Tanzania, while the center and south of the country have a unimodal rainfall regime and therefore only one main cropping season (see Figure 1). Bimodal regions have a long rainy and a short rainy season. The long rainy season is the most important cropping season and in 2019/20, 8.3 million ha were planted in this season (72% of total of 11.8 million ha) compared to 3.3 million ha (28% of total) in the short rainy season (NBS, 2021).

Figure 1. Unimodal and bimodal cropping seasons in Tanzania



Source: INSURED, IFAD, 2021 – Unpublished, *quoting original source MOA*
https://www.kilimo.go.tz/uploads/dasip/June_Bulletin-2_(1)_final.pdf

Climate variability is increasing over most parts of the country. Rising temperatures, longer dry spells, more intense heavy rainfall and sea level rise increase vulnerability, hinder poverty alleviation and rural development efforts. Production losses are expected to rise for most crops with more frequent droughts (IFAD, 2022).

Agricultural insurance is needed to help manage agricultural risks. Most farmers in Tanzania, especially smallholders, are highly exposed to risk, which impacts their consumption, livelihoods, and the wider economy. This has trapped farmers in a low productivity cycle and they do not have access to risk mitigation measures to break out. Agricultural insurance can be one important tool – as part of an overall risk management strategy – to protect farmers, helping to not only stabilize farm income, but also to allow farmers, livestock keepers, aquaculture farmers and foresters to reinitiate production activities after losses have been experienced (TIRA, 2021). The main focus of agricultural insurance is on natural, climatic risks affecting production and this sometimes extends to biological risks. In Tanzania, smallholder farmers are also exposed to other sources of risks, in particular price risk. However, insuring against both physical loss or damage to the insured crop and price loss at the time of harvest is not common practice and is limited to very advanced insurance programmes, where price references for the insurance covers are linked to the markets for derivatives on commodities.

3. GOT's objectives to transform the agricultural sector and to provide access to risk transfer products and services under TAIS

3.1. Agricultural and insurance sector development policy context

GOT launched the Third National Five Year Development Plan (FYDP-III) for the period 2021/22 - 2025/26 in July 2021, with the theme 'Realizing Competitiveness and Industrialization for Human Development'. Its main objective is to accelerate the realization of the National Development Vision 2025 goal of making Tanzania a middle-income country by 2025.

FYDP-III reaffirms that agriculture remains central to Tanzania's industrialization agenda and defines the broad direction planned for agriculture, emphasizing competitiveness and forward and backward linkages to other sectors by targeting strategic crops to improve both value and productivity (Ministry of Finance and Planning, 2021). These priority areas are further defined in the second Agricultural Sector Development Programme (ASDP-II 2017/2018 - 2027/2028). The overall objective of ASDP-II is to transform the agricultural sector (crops, livestock and fisheries) through higher productivity, increased commercialization and higher incomes for smallholder producers to improve livelihoods and guarantee food and nutrition security (Government of the United Republic of Tanzania, 2017). Priority commodities are outlined in ASDP-II per agro-ecological zone (Annex 1). ASDP-II implementation is coordinated by the Prime Minister's Office (PMO) and led by the Ministry of Agriculture (MOA), Ministry of Livestock and Fisheries (MOLF), in cooperation with other agriculture line ministries (ASLM). There are approximately 20 specialized government agencies responsible for ASDP-II implementation.

The Insurance Act No. 10 of 2009 (CAP 394), governs the provision of life and non-life or general insurance in Tanzania. Agriculture is a recognized class of general insurance business. TIRA is mandated under the 2009 Act to regulate and supervise the insurance industry, to advise government on all insurance related matters; to uphold consumer insurance protection and to promote and develop the insurance market. In 2021, there were 33 registered and active insurers in Tanzania, comprising 5 life companies, 25 general insurers, 1 composite insurer and the 2 reinsurers TanRe and GrandRe (TIRA, 2022).

Total gross premium written by the commercial insurance companies grew by 10.6% from TZS 824.3 billion in 2020 to TZS 911.5 billion in 2021. Insurance penetration in Tanzania is 1.68% of GDP compared to 0.8% for Uganda and 2.17% for Kenya (with a world average of 7.4%). TIRA has a target for the sector to reach 50% of the adult population with at least one insurance product by 2030. Within the same period, it also aims to increase insurance penetration to 5% of GDP (TIRA, 2022)

3.2. TAIS initiative, objectives and key features

Considering the role of agriculture in the national economy, TIRA, in collaboration with other stakeholders, plan to set-up and roll-out the TAIS to protect farmers against natural and climatic risks.

Agricultural insurance is currently a very small class of general insurance business in Tanzania. In 2021, six insurance companies provided agricultural insurance in Tanzania. These companies are Jubilee General Insurance Company Limited, MGen Tanzania Insurance Company Limited, UAP Insurance Tanzania Limited, National Insurance Corporation of Tanzania Limited, GA Insurance Tanzania Limited, and Britam Insurance Tanzania Limited.

Most companies focus sales of their traditional indemnity-based multiple peril crop insurance (MPCI) or named-peril crop insurance (NPCI) on medium and large cereal producers and agribusinesses with linkages to bank credit. The same applies to traditional indemnity-based livestock

insurance, with a focus on provision of individual animal accidental death and named disease cover to commercial dairy producers. Each insurer currently arranges its own reinsurance through the national reinsurance company Tanzania National Reinsurance Corporation Ltd (Tan-Re) and regional or international reinsurers. Tan-Re is 58.6% owned by state-controlled pension and social security funds. Regional reinsurers used include Kenya Re, East Africa Re, Baobab Re, Continental Re and Ghana Re; other active international reinsurers include Swiss Re and GIC Re. The industry is also supported by the private Association of Tanzania Insurers (ATI).

A total of TZS 1,324 million agricultural insurance gross written premium (GWP) was underwritten by the six agricultural insurers in Tanzania in 2021. This constituted only 0.2% of the total market premium underwritten during the same year. The largest portion of 2021 agricultural GWP, close to 91%, was from crop insurance and the remainder from livestock and fisheries. The agricultural GWP in 2021 represented a 63% growth on the values of 2020 and 2019 combined. In 2020, the total agricultural insurance gross premium was TZS 159 million, equivalent to 0.02% of total gross premiums in general insurance business. Whilst 2019's total gross premium written for agriculture was TZS 330 million, equivalent to 0.1% of total general insurance gross premiums (TIRA, 2022).

Under the TAIS, TIRA and GOT are targeting a major increase in agricultural insurance penetration with a plan to increase the contribution of agricultural insurance premiums from the 2021 level of less than 1% of total GWP to 10% of total GWP by 2030.[6] This is a very ambitious goal and one which cannot be achieved by the private insurance sector alone: rather TIRA has for several years been studying options to form a national agricultural insurance scheme under a suitable public-private partnership, based on international best practice.

The broad objective of the TAIS is to contribute to the transformation of subsistence farmers into sustainable commercial farmers by enhancing resilience measures from shock events such as weather and climate vagaries, pests, and diseases. The specific objectives of the scheme, as stated in the *National Agricultural Insurance Scheme (Zero Draft)* (TIRA, 2021), are to:

i. Promote investment in the agriculture sector.
ii. Promote adoption of new and improved farming practices.
iii. Provide financial support to farmers in the event of losses arising from natural disasters.
iv. Increase the flow of agriculture credit from lending institutions to farmers.
v. Minimize or eliminate the need for emergency assistance provided by government during period of agriculture disaster.
vi. Align insurance with other financial sector players in enabling farmers to access loans for Agriculture activities.
vii. Support financial inclusion initiatives.

[6] See MOF 2020, Financial Sector Development Master Plan 2020/21 to 2029/30, page 56, which states: "10% of the total insurance premium contributed by agricultural insurance by 2030", and TIRA 2023, which states: "Increased agricultural insurance coverage from the current less than 1% to 10% of GWP by 2030 in line with the FSDMP".

4. A public-private partnership approach for agricultural insurance: International experience and recommendations for the TAIS

4.1 Agricultural insurance in Africa

Fifteen years ago, agricultural insurance in Africa was restricted to a very small number of markets including South Africa, Zimbabwe and Morocco, and insurance was only available for medium and large-scale commercial farmers (Mahul and Stutley, 2010). The main insurance products typically offered to these commercial farmers included traditional indemnity-based loss of yield as multiple-peril crop insurance (MPCI) or damage-based named peril crop insurance (NPCI) products. Morocco had also experimented with weather index insurance (WII) and area yield index insurance (AYII). There was limited livestock mortality insurance provision for commercial dairy farmers. Greenhouse insurance was available for export-oriented production of horticultural and vegetable crops. In the case of South Africa only, forestry fire insurance was offered to large commercial timber and pulp operations.

A major breakthrough for smallholder farmer agricultural insurance in Africa came with the acceptance by insurance regulators and insurance and reinsurance companies to the introduction of a new class of "index-based" insurance products and programs that were specifically designed for and targeted at small-scale farmers and livestock herders (pastoralists). These smallholder farmer index insurance programs were typically designed and promoted by international development organisations and humanitarian assistance agencies and the first-generation microinsurance programs included: World Bank-sponsored weather index insurance initiatives in Kenya, Malawi, and Tanzania set-up in 2005; Oxfam America and World Food Program-promoted Harita R4 program providing weather index insurance in Ethiopia, since 2009; and DFID-funded index-based livestock insurance (IBLI) for pastoralists in Kenya and Ethiopia started in 2009. These early pilot index insurance programs were mainly collaborations between development partners and private sector, with little or no involvement of national or local governments. Except for the IBLI program, they carried no form of government-funded premium subsidies, although the design and operating costs of the programs were heavily financed by development partners, and in the case of R4, some premium financing contributions. The products were distributed on a voluntary basis to targeted farmers. Subsequent to these early initiatives there were large numbers of pilot programs for crop weather index insurance (WII) in more than 25 African countries: however, with few exceptions, e.g. the WFP R4 program,[7] most of these development and private sector led smallholder index insurance programs did not attract significant demand from farmers, they failed to scale up and were terminated.

4.2 Experience with PPPs in agricultural insurance

International experience shows that where agricultural insurance programs for smallholder farmers in developing countries have successfully scaled up these have tended to be based on a PPP model. Private insurance companies by themselves lack the rural networks to design and implement agricultural insurance products and programs to large numbers of small-scale farmers who are highly dispersed and lack knowledge and awareness of insurance and the financial means to pay for their insurance premiums. Involvement of the public sector is critical to ensure that agricultural insurance programs meet the needs of small-scale farmers while ensuring the sustainability of financial providers (see Box 1 for the main reasons why government support is needed to support agricultural insurance in developing countries).

Box 1. Reasons why governments need to support agricultural insurance

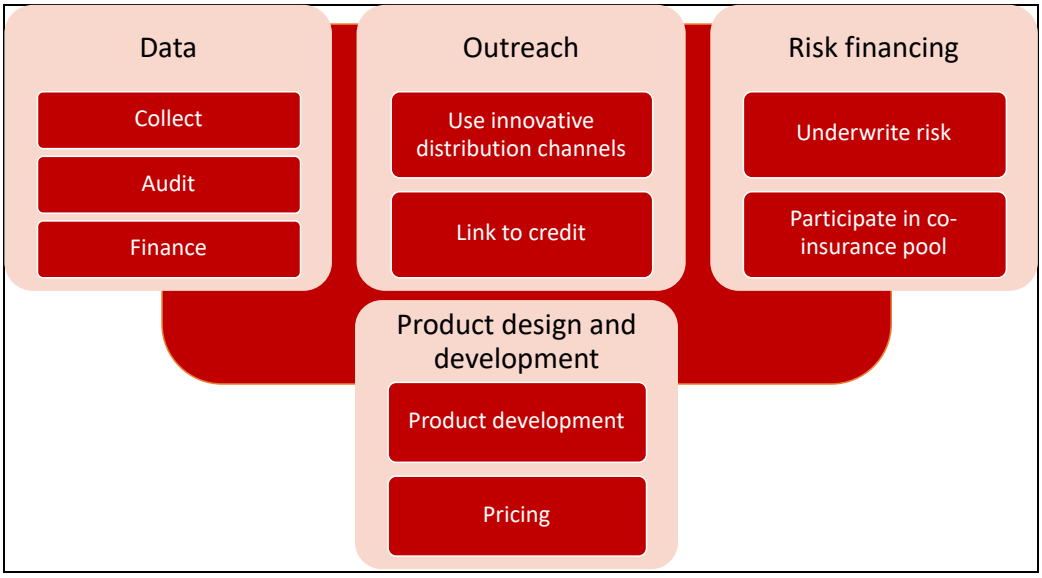
[7] R4 combines the offer of insurance with other tools for resilience like savings, credit, and community-based works for climate adaptation. It generally operates by financing the premium in exchange for work and phases out the in-kind premium support. The success of WFP's index-based insurance programs for small vulnerable farmers and microentrepreneurs is shown by the way the program has scaled-up, especially in Africa. In 2021, WFP supported 395,000 vulnerable households and their families access microinsurance solutions in Bangladesh, Burkina Faso, El Salvador, Ethiopia, Fiji, Guatemala, Kenya, Madagascar, Malawi, Mozambique, Nicaragua, Senegal, Zambia and Zimbabwe.

- Small farm sizes, which make traditional agricultural insurance products unsuitable; and failure or lack of incentive to invest in the development of suitable products.
- Low risk awareness and lack of insurance culture among farmers, which leads to low uptake rates of agricultural insurance.
- Limited understanding of insurance among farmers, which potentially leads to mis-selling of insurance products.
- Asymmetric information between farmers and insurers, which both makes farmers reluctant to buy insurance and increases premiums due to the insurers' fear of moral hazard and adverse selection.
- The possibility of catastrophic events, which threaten the financial stability of insurance companies and deter them from entering into the agricultural insurance market.
- Underdeveloped reinsurance market, due to regulatory impediments, small market volumes, and lack of sufficient data.
- Limited market development, due to regulatory overlay and other government provisions.

Sources: Mahul and Stutley, 2010; World Bank, 2020.

The private sector can play an essential role in the successful implementation of an agricultural insurance scheme and in its commercial sustainability. International experience shows that in successful PPP schemes for agricultural insurance, the private sector should be responsible for a number of key functions including: (i) product design and rating; (ii) risk acceptance and underwriting, (iii) decisions over risk retention and reinsurance strategies; (iv) marketing and distribution of the insurance products and (v) loss adjustment and claims settlement (see Figure 2 for a summary of private sector roles under a PPP).

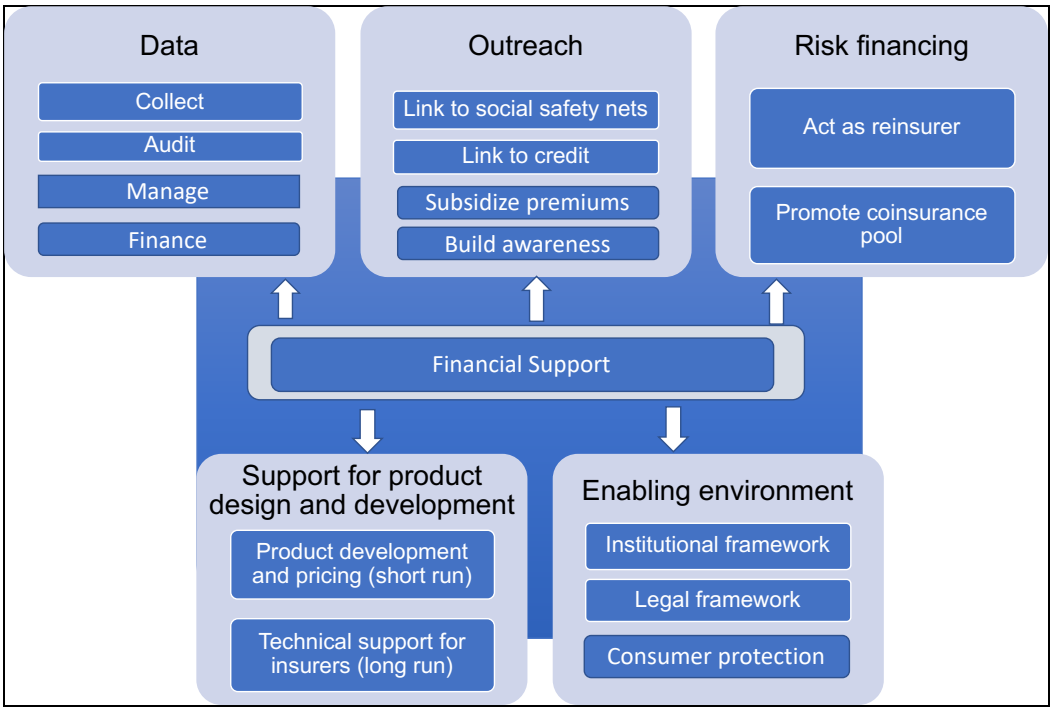
Figure 2. Potential private sector roles for insurance companies to consider in support of the TAIS in Tanzania



Source: World Bank, 2020

The support provided by the public sector is necessary to make agricultural insurance products available to smallholder farmers. Governments for their part, can promote the development of agricultural insurance through investments in data (such as weather and yield data), risk financing arrangements, premium subsidies, financial education and awareness creation, enactment of appropriate policy frameworks, and establishment of an enabling legal and regulatory environment. GOT could promote the expansion of agricultural insurance through the provision of support in several areas to TAIS, which are summarized in Figure 3.

Figure 3. Potential public sector roles for the Government of Tanzania to consider in support of the TAIS



Source: World Bank, 2020

In Sub-Saharan Africa, considerable experience has been gained from successful PPP agricultural insurance programs in countries such as Senegal, Ghana, Kenya, Ethiopia, Uganda, Rwanda and Zambia, from which lessons can be drawn to provide TAIS stakeholders with guidance on best practice in designing and implementing a national agricultural insurance program based on PPP principles. The key features of these national programs include:

(a) **Formation of coinsurance agreements to underwrite agricultural insurance**. In nearly all these countries, leading non-life insurance companies have elected to enter into some form of consortium or coinsurance pool agreement to underwrite the national (in scope) agricultural insurance program. The major advantages of coinsuring agricultural risks include: the scales of economy in sharing operating and administration costs using a single entity to market and promote, underwrite and adjust agricultural insurance claims; the adoption of uniform standards in the design and rating of agricultural insurance products and programs; through to the potential to retain much higher levels of risk locally and to purchase common account reinsurance protection with potential gains from risk diversification and reduced reinsurance costs for a single program. In **Ghana**, in 2010, the entire non-life insurance sector (21 insurance companies) elected to join the Ghana Agricultural Insurance Program (GAIP) under the leadership of one insurer. In **Kenya**, in 2015, seven leading insurers with approval from the Kenya Insurance Regulatory Authority (IRA) formed a coinsurance pool under the leadership of APA Insurance Company to underwrite the Kenya Livestock Insurance Program (KLIP) and then in 2016 a similar group of coinsurers, again under the lead of APA, came together to underwrite the Kenya Agricultural Insurance Program (KAIP). In **Uganda**, the Uganda Agricultural Insurance Scheme (UAIS) was launched in 2016/17 as a PPP between the government and a consortium of 11 coinsurers termed the Agricultural Insurance Consortium (AIC): in this case the AIC has formed a separate Agro-Insurance Secretariat or managing underwriting team to underwrite and settle claims on the coinsurer's behalf. **Rwanda**, more recently, elected to form a coinsurance pool to underwrite the National Agricultural Insurance Scheme (NAIS). Finally, in **Senegal**, which has one of the oldest and most mature and scaled up PPP dating back from 2009, public and private stakeholders elected to incorporate a new specialist

agricultural company with public and private shareholding termed the National Agricultural Insurance Company of Senegal (CNAAS).

(b) **Government-financed premium subsidies**. In nearly all cases government has supported these PPP agricultural insurance programs in the form of premium subsidies, which has enabled the insurers to achieve far greater demand and uptake of their products and programs by farmers than would have occurred under a non-subsidized program. Premium subsidy levels on the micro-level individual farmer agricultural insurance programs are typically 50% in the case of CNAAS Senegal, the KAIP Kenya, and NAIS in Rwanda; in Uganda the government provides higher premium subsidies of 40% to small farmers, compared to 30% for medium and large farmers and up to 80% for farmers located in regions most vulnerable to high climatic risk; while in Kenya under the KAIP livelihoods protection index insurance program against drought for vulnerable pastoralists, government funded 100% of the premiums of the targeted beneficiaries between 2015/16 and 2021/22. The one country which did not provide premium subsidies from the outset was Ghana, and in the absence of subsidies the GAIP has struggled to achieve significant demand and scale-up.

(c) **Under many of the African national PPPs for agricultural insurance, governments have also provided additional financial support to the programs** in the form of investment in strengthening data and information systems (e.g. in weather data or crop production and yield data), support for farmer insurance awareness and financial literacy campaigns, through to support to adjusting crop losses (e.g. under KAIP, support from the Kenyan State Department of Agriculture is provided through extension officers conducting crop-cutting experiments for area yield index insurance). In countries like Kenya and Uganda the insurance supervisory authorities have also been instrumental in creating an enabling regulatory framework for the operation of the government subsidized PPP agricultural insurance programs. In order to incentivise agricultural insurance, governments may also exempt agricultural insurance premiums from insurance taxes such as VAT, stamp duty and other compulsory levies, thereby making agricultural insurance cheaper for the farmer to buy.[8]

In the next stages of planning and design of the TAIS, TIRA and public and private sector stakeholders may wish to study the experiences of other PPP programs, especially those in neighbouring countries of East Africa.

4.3 A PPP structure for Tanzania

In a PPP approach the public sector can get involved in various capacities: from providing financial support and public reinsurance (Ministry of Finance); to planning, collecting and disseminating data, providing education and training (Ministry of Agriculture); to the development of dedicated legal frameworks and regulations (Insurance Regulator); to special assistance in case of disaster events (National Disaster Authority). Hence, participation of the public sector can range from a very light engagement, in which the government provides some technical support through a simple aggregation of staff of selected ministries, up to the development of a governmental agency for agricultural risk management.

A recommendation for Tanzania would be to start by adopting a lean coordination mechanism and, as the program develops, potentially plan for more complex structures. In this respect, an initial approach for the TAIS could be to leverage on the initial institutional arrangements that were set up at the beginning of the explorations on agricultural insurance (namely the TAIS Steering Committee and the Technical Committee), completing the framework with the required additional components.

[8] In the finance act of 2020/2021, the GOT removed VAT on crop agricultural insurance with the aim of promoting agriculture and to encourage farmers to insure crop farming.

As illustrated in Figure 4, the key components around which such a framework could be centered are:

- A **High-level Steering Committee (SC)**, composed of lead government policy makers, that would be responsible for identifying the policy objectives, defining the amount of resources to be allocated to the program, and providing general guidance on policy level issues.

- An **Interministerial Technical Support Unit (TSU)**, composed of the relevant representatives of the public sector. The TSU would focus on implementing the orientations of the Steering Committee; on overseeing the operational activities of the program; and on interacting with the private sector components of the program within the Technical Committee.

- **Over time, the SC and TSU could merge and evolve into a public sector funded Agricultural Risk Management Agency (ARMA)** which would be charged with coordinating, administering and implementing government policy and support programs for agricultural insurance. This ARMA could initially have a small core staff and restricted operating budget and could expand its operations in response to the scale up of the PPP agricultural insurance program and demand-led requirements.

- An **International Advisory Team** (IAT), composed of relevant experts in the area of agricultural risk management, that could provide the various components of the system with the policy advice and technical support that may be required. The advisory team could be jointly appointed and co-funded by GOT and the international development community that could also be represented in the IAT and interact with the other components of the program.

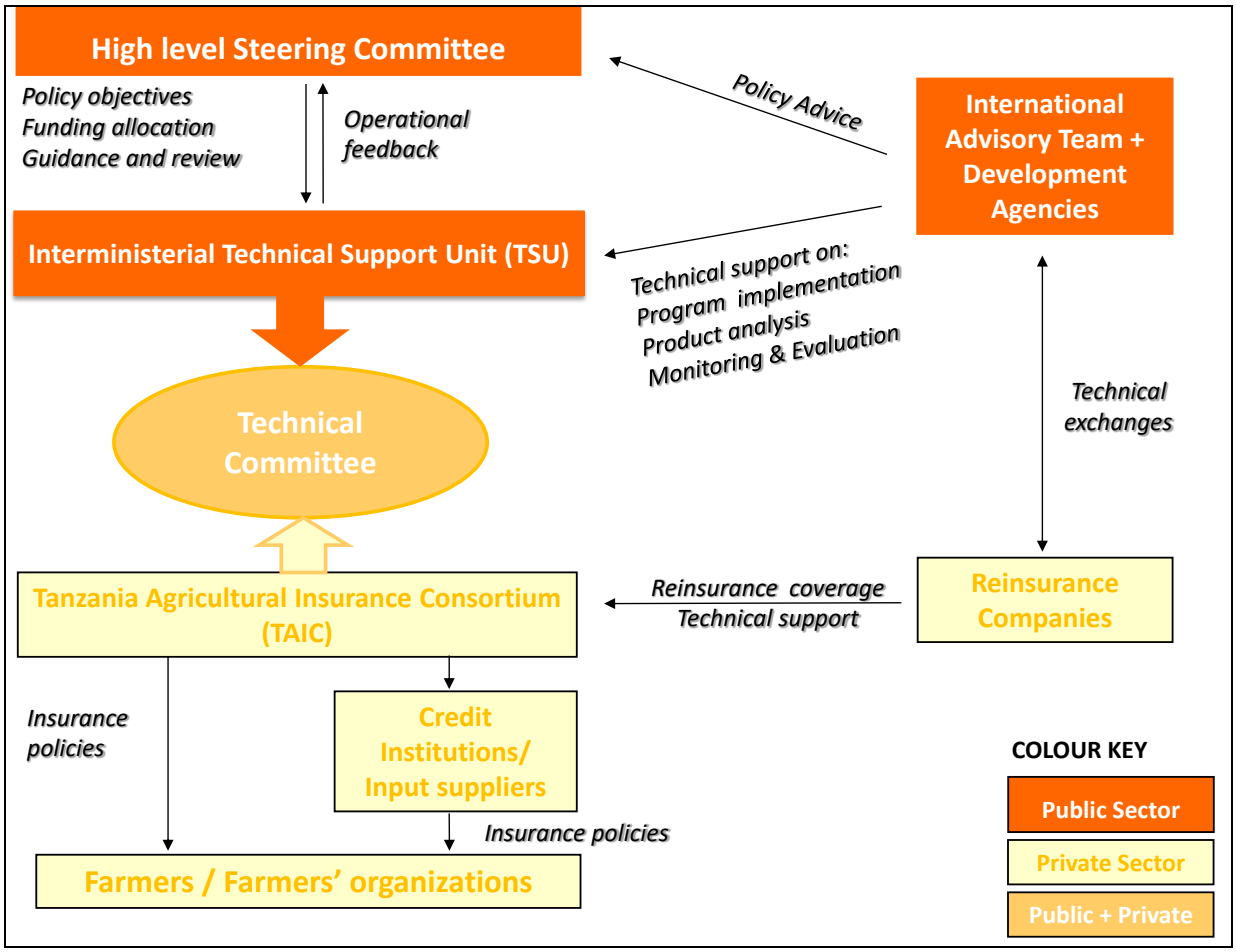
- A **Technical Committee,** that would be composed of select representatives of the Interministerial TSU and of the insurance and reinsurance industry, that would be the seat in which interaction and coordination between the public and the private sector stakeholders takes place and would be responsible for the exchange of information and the negotiations between the public and private components of the scheme.

On the private sector side, the pivotal role should be assigned to insurance companies, that are responsible for the supply of agricultural insurance policies, **and reinsurance companies,** that can provide both reinsurance capacity and technical support for product design and implementation and could also interact with the advisory team on technical issues.

In this context, TIRA has promoted the formation of an agricultural insurance consortium (Tanzania Agricultural Insurance Consortium – TAIC) to underwrite the TAIS. In June 2023 the Commissioner of Insurance convened a meeting of the Association of Tanzania Insurers (ATI) and leading members of the non-life or general insurance industry to discuss proposals for TAIS and, as a starting point for this initiative, to debate the different institutional framework options for underwriting and implementing TAIS. IFAD-INSURED had previously presented to TIRA the Technical Note 1 "Guidance Note on the Development of an Institutional Framework for the Tanzania Agricultural Insurance Scheme" that illustrated several institutional framework options and their relative advantages and drawbacks, including: (1) a single market insurer appointed by government to underwrite TAIS; (2) open market competition model; and (3) various options for a national pool program including (i) a simple coinsurance agreement under a lead insurer; (ii) an agricultural insurance consortium modelled on the lines of the Uganda UAIS and also the recently formed oil and gas consortium of Tanzania; and (iii) a new specialist agricultural insurance pool company owned by public and private sector stakeholders. At the June 2023 meeting TIRA presented options for a coinsurance or pooling agreement. The meeting participants unanimously voted to follow a consortium approach similar to the Uganda UAIS to underwrite

the TAIS. **The TAIC was formally launched by the Minister of Agriculture, Hon. Hussein Bashe, on 1st July 2023.**[9]

Figure 4. Potential initial institutional framework for the Tanzania Agricultural Insurance Scheme



Source: Authors

5. Agricultural insurance regulations

International experience shows that governments can greatly assist the development of any new PPP scheme for subsidized agricultural insurance by providing an enabling legal and regulatory framework for the scheme. Such insurance legislation and regulations should clearly set out aspects including the roles and functions of the public and private stakeholders, the funding agreement by the government for premium subsidy provision and other types of financial support, and the types of farmers eligible for premium subsidies (for a review, see Mahul and Stutley, 2010).

In 2019 TIRA prepared Draft Agriculture Insurance Regulations, setting out the scope of a new agricultural insurance scheme, the insured classes, and insurable perils. A key feature of the draft regulations was the identification of an implementing institution responsible for overseeing

[9] Tanzania Launches Agriculture Insurance Consortium to Boost Farming Sector Resilience https://www.tira.go.tz/news/launch-of-agricultural-insurance-consortium

implementation of the scheme and for administering a government fund - part of which would be allocated to the provision of premium subsidies.

Under the TA to TIRA, IFAD-INSURED has conducted a detailed technical review of the Draft Agriculture Insurance Regulations 2019 and has presented findings and recommendations in the Technical Note "Technical Review of the TIRA 2019 Draft Agriculture Insurance Regulations". The IFAD-INSURED team noted that the draft 2019 regulations have been very carefully and professionally prepared. The draft regulations do, however, require updating to reflect:

- The new regulatory requirements of the TAIS which will be underwritten by the TAIC established in July 2023 (see Box 2); and
- Recent developments in agricultural insurance provision, especially with regard to parametric or index-based insurance applications for agriculture (see Box 3).

Box 2. Key considerations for TIRA new agricultural insurance regulations to reflect TAIS

Regulations that will apply to TAIS versus non-TAIS agricultural insurance:

- TAIS subsidized agricultural insurance underwritten by the newly formed Tanzania Agricultural Insurance Consortium; and
- Non-TAIS unsubsidized agricultural insurance business underwritten by individual agricultural insurers, presumably outside the TAIS framework in Mainland Tanzania and in Zanzibar.

Regulations governing the TAIS premium subsidy regime including:

- Source of premium subsidies, budget, and duration.
- Entity responsible for administering and auditing premium subsidies.
- Rules defining eligibility of insurers to access premium subsidies.
- Target farmer segments: small, medium, large, and eligibility for premium subsidies and levels of premium subsidy for each segment.

Regulations which will apply to agricultural insurance business which is underwritten by:

- TAIC members; and
- Other non-life insurers which elected not to be part of the TAIC Consortium.

Alignment with agriculture and disaster risk government policies and annual operations:

TIRA may also need to consider how best to align with broader issues relating to government policy for agriculture and disaster risk, including the prioritization of types of crops and livestock and other priority classes of agricultural insurance and the annual budget for premium subsidies. These broader policy issues do not necessarily fit into the regulations for agricultural insurance and may best be dealt with through an annual or multi-year TAIS business plan and budget and which would include:

- Government policy for updates and revisions to agricultural insurance lines to enter into the TAIS annual business plan.
- Government budget approval for TAIS premium subsidies and subsidies for other TAIS operations.
- Alignment of subsidized TAIS agricultural insurance and other government-funded programs including: (1) natural disaster compensation programs, (2) subsidized crop production (seeds, fertilisers), and 3) agricultural credit programs.
- Compulsion of insurance for loanee farmers to be eligible for premium subsidies or leave decisions to the financial institutions (Banks, MFIs etc).

Source: IFAD-INSURED Technical Note 2 "Technical Review of the 2019 Agricultural Insurance Regulation Draft"

Box 3. Updating the 2019 Tanzania agricultural insurance regulations to include new index-based crop and livestock insurance products

The 2019 draft agriculture insurance regulations mainly relate to traditional indemnity-based agricultural insurance for crops, livestock, aquaculture and forestry and require updating to include index insurance products for agriculture. In this respect, the 2019 Draft Agriculture Insurance Regulations will require extensive updating and IFAD-INSURED have provided technical recommendations in relevant parts of the draft regulations in Technical Note 2.[10]

Index insurance is a relatively recent innovation in the domain of agricultural insurance. In index insurance products, payments are based on an independent measure highly correlated with farm-level yield or revenue outcomes. Unlike 'traditional' indemnity crop insurance that attempts to measure individual farm yields or revenues, index insurance makes use of variables exogenous to the individual policyholder – such as area-level yield or an objective weather event or measure such as temperature or rainfall – that have a strong correlation to farm-level losses (World Bank, 2005).

Given its specific nature, index insurance contracts require regulation of some aspects that do not apply to indemnity insurance covers. Issues such as those listed below need to be clearly addressed in the regulations on index insurance:

- the existence of an insurable interest;
- basis risk;
- the identification of the risk for which the policy is designed to provide insurance coverage;
- the independence of data generation and fallback options;
- the methodologies for calculating the indices;
- the entities responsible for the calculation of the indices.

It may be important for the updated regulations to address applications of index-based insurance at different levels of aggregation ranging from **micro-level programs** targeted at and purchased by individuals (farmers, pastoralists, microentrepreneurs, etc), through to **meso-level applications** to protect the financial risk exposure of service institutions (banks, MFIs, input dealers, contract farming operations, etc), and finally as a **macro-level, sovereign risk insurance** tool for governments (and relief agencies) to purchase as part of their national disaster risk financing (DRF) programs.

Source: IFAD-INSURED Technical Note 2 "Technical Review of the 2019 Agricultural Insurance Regulation Draft"

6. Technical considerations on insurance products for smallholder and semi-commercial farmers

The Tanzanian agricultural insurance market is currently very small and offers a limited range of traditional indemnity-based and index-based crop and livestock (including poultry), aquaculture and forestry products and programs. Under TAIS it is suggested to adopt a phased approach to the design and testing, implementation and scale-up of a broad range of new agricultural insurance products which meet risk transfer needs of different types of Tanzanian farmer over the period 2024 to 2030. This section presents a review of the technical product design options under TAIS.

6.1. Traditional and index insurance products for crops and livestock

[10] To assist TIRA in this task, IFAD-INSURED, within the context of Technical Note 2, has shared two useful documents: 1) the Kenya 2015 Draft Regulations for Index Insurance; and 2) a publication developed by the Access to Insurance Initiative (A2ii) 2021, which provides specific indications on regulatory issues for index insurance.

Crop insurance products

Currently agricultural insurers in Tanzania are mainly focusing on the underwriting of indemnity-based MPCI and NPCI with direct linkage to credit provision. These covers attract very low premium rates of 1.5% to 2.0%, and the crop insurance market is highly competitive to the point that these crop-credit insurance programs are underpriced and the level of protection/coverage is relatively low as a result.

At least one insurer in Tanzania is also piloting AYII for maize. Insurers report that they have tried introducing crop WII, but this product has not proved popular with farmers and insurers alike because of the restricted range of insured perils (e.g. excess rain and drought cover). Some insurers are also offering greenhouse insurance to large commercial clients involved in floriculture and high value vegetable production for export, and there is a very small forestry fire market for commercial timber plantation owners.[11]

The range of indemnity-based and index-based crop insurance products that are internationally available are listed in Table 1. Index-based crop insurance has become hugely popular in developing countries as a smallholder farmer product over the past ten years or more. In recent years, because of limited ground-based weather station networks in most developing countries, the use of remote-sensing or satellite-based indexes is increasingly popular,[12] typically insuring against excess rainfall, rainfall deficit, windstorm, extremes of temperature and, in a very limited number of cases, flood index insurance applications to the smallholder farming sector.[13]

[11] Currently, only one insurance company is offering forestry insurance. The estimated forest plantation area across Tanzania varies from around 200,000 to 550,000 hectares (MNRT, 2015), with most of the planted area situated in the Southern Highlands. Of these only 183 hectares of planted forests in the country have been insured because most insurers consider the fire exposure to be too high to insure this class of business (TIRA, 2021).

[12] In this context TIRA report that the Tanzania Meteorological Agency (TMA) has only 28 synoptic weather stations throughout the country – a density which is far too low to support ground-based crop weather index insurance, and hence the need to explore remote sensing/satellite-based index insurance solutions (TIRA, 2021).

[13] See for example the innovative meso-level flood index insurance program providing business interruption for landless farm labourers in Bangladesh designed by Oxfam UK (Oxfam, 2015 and Tatin-Jaleran, 2014).

Table 1. Range of indemnity-based and index-based crop insurance products available in international insurance markets

CROP AND FORESTRY INSURANCE COVERS
INDEMNITY-BASED
1. **Named-Peril Crop Insurance (NPCI) for selected natural, climatic and/or biological perils.** An NPCI policy is a damage-based indemnity policy that involves actual in-field measurement of the percentage loss or physical damage to the insured crop.
2. **Multiple Peril Crop Insurance (MPCI).** This is a loss of yield-based indemnity policy that usually insures yield shortfall or loss due to all natural, climatic and biological perils. Yield shortfall is measured in-field immediately prior to the harvest of the crop.
3. **Crop Revenue Insurance.** This policy indemnifies the Insured against both loss of crop yield and a fall in the actual harvest sale price of the crop. Crop Revenue Insurance cover is very restricted to a few countries such as the USA and to commodities that are traded.[14]
4. **Other specialist covers (e.g. Aggregate Production shortfall cover).** Such covers are based on MPCI loss of yield-based principles and are usually tailor-made for major grain producers involved in contract farming operations and are designed to protect them against aggregate production shortfalls. In addition, cover may be designed as a Supplier's Extension Policy to enable the grain producer to make good any production shortfall in its sales contracts with grain traders/processors.
OTHER SPECIALIST CROP & FORESTY INSURANCE (INDEMNITY-BASED)
5. **Greenhouse Insurance (insuring against physical loss or damage to the protected crop and the greenhouse buildings, machinery and equipment).** Most greenhouse crop insurance is named peril percentage-damage based cover.
6. **Forestry Insurance, also known as Standing Timber Insurance providing cover for loss or damage to trees typically against fire, wind, and allied perils.**
7. **Plantation/ Tree Fruit Insurance** involving loss of the productive asset - bush or tree (named peril damage-based indemnity cover, typically insuring against fire, wind, allied perils).
INDEX-BASED
8. **Weather-Index Insurance (WII), also known as Climate Risk Index Insurance (CRII) based on Ground Weather Stations** providing cover against selected named perils such as excess rainfall and rainfall deficit, temperature (excess heat and frost/freeze), evapotranspiration, windspeed, soil moisture. Cover may also include other natural perils (e.g. earthquake intensity indices).
9. **Weather-Index Insurance (WII), also known as Climate Risk Index Insurance (CRII) based on Remote Sensing/Satellite Indexes** providing cover against selected named perils such as excess rainfall and rainfall deficit (rainfall estimates RFEs), temperature (excess heat and frost/freeze), evapotranspiration , windspeed, soil moisture, vegetation indices (NDVI, EVI) sea surface temperatures (SST) etc. Cover may also include other natural peril indices (e.g. earthquake intensity, tsunami, sea surge).
10. **Area Yield Index Insurance (AYII). A multi-peril crop yield-based insurance policy that makes payouts according to yield loss in a defined geographical area (the Insured Unit – IU).** AYII establishes a normal average yield (the "area yield index") for an insured crop in a defined IU. An Insured Yield is established as a percentage of the average yield, termed the "coverage level". At harvest, farmer's yields are measured on a random sample basis to establish the actual average yield in the IU and where the actual yield falls short of the Insured Yield, all farmers receive the same yield shortfall payout. As such AYII does not indemnify yield loss at the individual farmer level.
11. **Other (e.g. specialist Flood Index insurance)** involving measurement of river water flow (cubic m/sec), or height at recording stations.

Source: Authors

Livestock (including poultry) insurance products

There is currently a very small livestock insurance market in Tanzania which is offered by two insurers to commercial dairy cattle producers: the cover provides individual animal accident and disease cover leading to death of the animal. Several large commercial poultry enterprises also purchase poultry insurance from these insurers. It is understood that there is no commercial

[14] In developing countries there is a very restricted market for Crop Revenue Insurance, which insures against both physical loss or damage to the insured crop and price loss at the time of harvest: the USA is the main global market for Crop Revenue Insurance for traded commodities such as wheat, maize and soybean.

insurance market at present for pigs and shoats. There is no index-based livestock insurance available in Tanzania.

There are a wide range of additional traditional indemnity-based products that are available in European and North American markets for commercial livestock producers of milk and beef and for commercial pig and poultry owners (see Table 2). The most common policy is a standard individual named-peril animal accident and mortality policy which typically excludes death due to diseases. The market for all risk livestock insurance including epidemic diseases is much more restricted and in developing countries is usually offered only where animals have been vaccinated against the disease.

Index insurance includes livestock mortality index insurance as provided under the IBLI programs in Mongolia and in Kenya. Satellite-pasture drought insurance is much more widely available today in Kenya, Ethiopia and Somalia where the product is being promoted under the World Bank financed De-Risking, Inclusion and Value Enhancement of Pastoral Economies in the Horn of Africa (DRIVE) program.

Table 2. Range of indemnity-based and index-based livestock insurance products available in international insurance markets

LIVESTOCK & POULTRY INSURANCE COVERS (POLICIES)
INDEMNITY-BASED
1. **Named-Peril Livestock Accident and Mortality Insurance** (Individual Animal insurance; poultry on flock basic)
2. **All Risks Livestock Mortality Insurance including diseases** (Individual Animal Insurance; poultry on flock basis)
3. **Epidemic disease/ Business Interruption cover (herds).** Specialist policies designed to indemnify both loss of animals following an epidemic and also the reduction or loss of income arising out of the ban on sales of animals or animal products (milk, eggs, etc.) for up to 12 months post-event. (e.g., Germany since 1990 and Mexico since 2005). Very restricted to large commercial livestock enterprises operating under very high levels of sanitary and husbandry measures.
4. **Bloodstock (Individual animal insurance).** This insurance is for high-value animals (e.g., race horses, semen bulls, and prize cows). The insured perils commonly include all risks mortality, disability, infertility, medical treatment, and surgery.
5. **Livestock revenue insurance.** Which includes insurance products that protect a producer against a decline in revenue reflected in the market. Very few countries offer such cover. E.g. USA/RMA Livestock Gross Margin (LGM); Livestock Risk Protection (LRP). Cover offered to intensive beef fattening producers.
6. **Other Livestock Insurance Covers** (usually provided as additional covers, i.e. as an 'add-on' to a named peril livestock mortality cover):
Transit Insurance. Covering accidental injury/death of animals which are being transported from one farm to another or being transported to market for sale.
Exhibition Insurance. For animals which are temporarily away from their usual location and being exhibited at shows.
Loss of Use Insurance. E.g., for commercial dairy cattle which as a result of severe mastitis are no longer able to produce milk.
Insurance of slaughtered animals (Carcass removal/destruction insurance). In many countries farmers can only dispose of carcasses of dead animals at official centers where the animals are then destroyed by the authorities. Insurance covers the costs of livestock carcass removal and destruction.
7. **Bee Insurance.** Named peril insurance for loss or damage to beehives and the bees against perils such as fire lightning, storm. In some countries (e.g. USA) insurance extends to product liability cover and third party injury liability.
INDEX-BASED
8. **Index-based livestock Mortality Insurance (IBLI)** implemented in Mongolia and in Kenya
9. **Satellite Index Insurance (NDVI for loss of pasture/grazing mainly due to failed rains and drought).** This cover is designed for pastoralists and agro-pastoralists and has been commercially implemented in Kenya and Ethiopia for more than one decade both as a micro-retail cover IBLI and also as a macro-level livelihoods cover purchased by government of Kenya (Kenya Livestock Insurance Program) and the Regional government, Somali Region Ethiopia (SIIPE).

Source: Authors

Aquaculture insurance is a specialist class of livestock insurance for onshore or offshore farmed finfish, crustaceans and molluscs. Fish farmers can typically purchase "named-peril" cover against storm damage and allied perils, or less commonly, "all risks" cover including epidemic disease cover for loss of the farmed fish and/or damage to the ponds, floating cages, installations and equipment. Currently aquaculture insurance is only provided by one insurer in Tanzania and in this case only for commercial producers.[15]

6.2. Suitability for different types of farmer: one size does not fit all

TAIS target farmers

According to TIRA, TAIS will target smallholder farmers who make up more than 80% of the farming population (TIRA, 2021). TIRA, 2021 contains a classification of small-scale farmers and large-scale livestock, poultry, and aquaculture producers, which is shown in Table 3. At the time of drafting this report TIRA had not yet defined small-scale and large-scale crop producers.

Table 3. Classification of small-scale and large-scale crop, livestock, poultry and aquaculture producers for TAIS

S/N	Type of Farming	Small Farming Scale	Large Farming Scale
1	Crops	TBA	TBA
2	Cattle (No. of animals)	1 – 30	More than 30
3	Pigs (No. of animals)	1 – 50	More than 50
4	Poultry (No. of birds)	500 – 2000	More than 2000
5	Fishing		Only large scale

Source: TIRA, 2021

TAIS target farmers and the need to design insurance products for each farmer segment

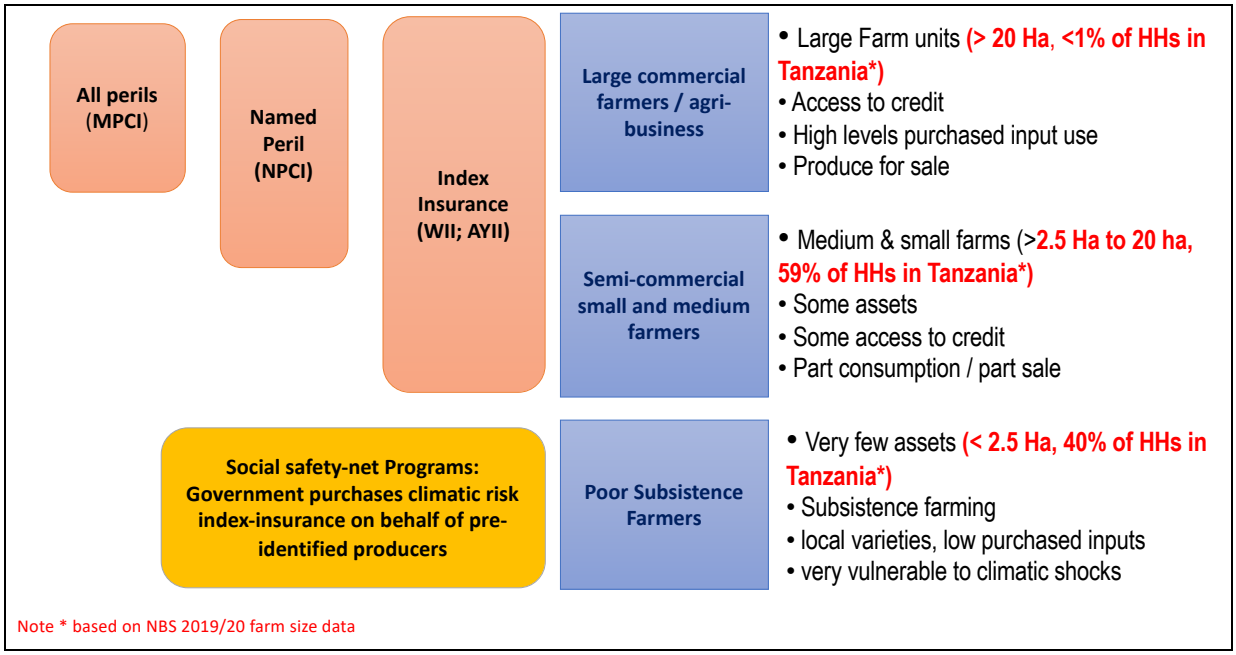
As shown in Figure 5, different types of farmers have different risk management needs that should be attended to with different approaches. For example, international experience indicates that micro-level insurance is not the recommended risk transfer approach for subsistence farmers, who are frequently not linked to the markets and have limited capacity to contribute to insurance premiums. For the poorest subsistence farmers social safety net programs may prove more effective support tools. At the other extreme, large-scale commercial farmers will probably prefer indemnity-based insurance, such as MPCI, over index insurance products that are settled at an area level. It is therefore recommended that TAIS stakeholders develop agricultural insurance products and programs that meet the risk transfer needs of each segment of the farming population.

In Tanzania, the National Bureau of Statistics provides data on the farm size distribution of the 7.8 million farmers. In the 2019/20 sample census, 40% of farming households owned or farmed less than 2.5 ha (classified by IFAD-INSURED as mainly subsistence farmers); 59% of farmers had 2.5 ha up to 20 ha (small and medium farmers) and less than 1% of farmers had more than 20 ha (large farmers). This farm size structure suggests that under TAIS the TAIC insurers should be focussing on the design and implementation of individual-farmer (micro-level) crop insurance products that serve the risk transfer

[15] Despite the growth and importance of aquaculture in the country, only one insurance company has ventured into aquaculture insurance. Fish farms have increased from 14,100 earthen fishponds in 2004 (FAO, 2012) to 26,445 in 2019, producing in total around 18,018.6 MT annually (URT, 2019). The main reason for the underdevelopment of aquaculture insurance is the lack of expertise and technical capacity of the insurance sector to underwrite this type of complex risk. The technical capacity to underwrite and to perform the surveys, follow-up, and loss assessment needed in aquaculture insurance is yet to be developed in the country (TIRA, 2021).

needs of the 59% of small and medium emerging farmers with between 2.5 ha and 20 ha of land. There may also be opportunities to develop macro-level climate risk index insurance covers to provide livelihood protection for the poorest segment of subsistence farmers (see Figure 5).

Figure 5. Farmer classification in Tanzania and suitable risk management options



Source: Authors based on Farm Size Data (NBS, 2021)

6.3 Opportunities for the phased design and implementation of agricultural insurance products and programs under TAIS

The Commissioner of Insurance has advised that under the TAIS, new agricultural insurance programs must be carefully designed, rated and tested to ensure they provide value added risk transfer protection to the targeted farmer audience, and that the insurance products should meet the priorities of the national agricultural development policies and programs over the period 2024 to 2030.[16] For these reasons the Commissioner of Insurance has requested guidance on a phased roll-out plan for the design and implementation and scale-up of TAIS crop, livestock (including poultry), aquaculture and forestry insurance products and programs starting with launch in 2024 and scale up to 2030. IFAD-INSURED note that international experience from other African national agricultural insurance programs shows that it typically takes between six months and two years to design, test and finalise a new agricultural insurance product (policy) and to put in place the operating systems and procedures and to train the stakeholders involved in distribution, marketing and promotion and education and in field inspections and loss adjustment. Bearing this in mind, as well as government priorities for the staple food crop and cash crop/export crop sectors and livestock, IFAD-INSURED have prepared an outline phased product and program development plan for TAIS over the period 2024 to 2030, which is summarized in Table 4. This phased product development and implementation, and roll-out plan is described in more detail in the TAIS roadmap (IFAD-INSURED Technical Note 3) that provides the basis for TAIS uptake and financial costings plan for 2024 to 2030 (IFAD-INSURED Technical Note 4).

[16] TAIS will include priority food crop and cash crop commodities identified in the ASDP II – see Annex 1.

Table 4. TAIS phased agriculture product design and implementation program 2024 to 2030

Year / Agricultural Insurance Products/Programs	2023	2024	2025	2026	2027	2028	2029	2030
TAIS Launch	1 July 2023							
CROP Program 1. Area Yield Index Insurance for Food Crops								
CROP Program 2. NPCI and Index Insurance for Cash Crops								
LIVESTOCK 1. Dairy Cattle Indemnity Insurance								
LIVESTOCK 2. Index-Based Livestock Insurance (IBLI)								
AQUACULTURE INSURANCE (Indemnity-based)								
FORESTRY INSURANCE (indemnity-based)								

COLOUR CODES:
Planning and design of insurance product and field procedures
Launch of program, testing and proof of concept
Scale-up and expansion to include other crops and regions

Source: Authors

In Tanzania there appears to be a major opportunity under the TAIS starting in 2023/24 to develop Area Yield Index Insurance (AYII) as a micro-level product for staple food crops for small-scale and emerging farmers with direct linkage to production credit. Experience from Kenya, Uganda and Rwanda over the past decade shows that, if governments and the private sectors are willing to invest in strengthening the collection of local (ward and sub-district) level crop sown and harvested area, production and average yields using appropriate sample crop-cutting experiments (CCEs), then AYII can be developed for major smallholder food crops grown under rainfed conditions, such as maize, wheat, sorghum and rice, and distributed by insurers through banks and microfinance institutions lending to small-scale farmers. IFAD-INSURED recommends starting with maize AYII in 2024 and, as experience is gained, to then scale this program into other food crops between 2025 and 2030 (Table 4).

It is suggested that this is followed in 2024/25 with the design of at least one new named peril crop insurance (NPCI) program for smallholder cash crops and the development of indemnity-based livestock insurance for small-scale owners of dairy cattle. In addition to developing NPCI covers for cash crops, TAIS underwriters should also conduct research into index-based crop insurance products and programs as a micro-level individual farmer cover – here caution will need to be exercised because of the basis risk exposure of micro-level crop index insurance products and programs. TAIS could also usefully study the smallholder dairy cattle insurance programs that have been successfully launched and scaled-up both in Uganda under the UAIS and in Rwanda under the NAIS with a view to launching in 2025/6 (Table 4).[17]

There appears to be a significant opportunity in Tanzania to develop satellite pasture drought index insurance for pastoralists and agro-pastoralists.[18] Based on the success of the large-scale satellite pasture-drought IBLI programs in Kenya (KLIP) and in Ethiopia (Satellite Index Insurance for Pastoralists in Ethiopia, SIIPE) and their successor, the DRIVE program, which was launched in 2022/23, as well as on the demand for such cover by the Tanzania Ministry of Livestock and Fisheries (MoLF), it is proposed to also roll out similar IBLI cover in Tanzania for vulnerable pastoralists starting in 2026/27 (Table 4).

[17] Accident and mortality covers for the dairy sector are already available in Tanzania, and the experience so far has been successful as losses of insured animals have been effectively compensated. However, the program is still at very low uptake levels and TAIS may provide the opportunity to streamline the implementation process and scale up the number of policies sold.
[18] According to TIRA, 2021, most open grazed livestock are located in the northeast region of Tanzania and the number of livestock units living under areas hit by drought will increase from 11% (1.5 million units) to 33% (4 million livestock units).

The demand for aquaculture insurance and forestry insurance by the TAIS target audience of mainly smallholder farmers is likely to be relatively small given these sectors are traditionally dominated by large commercial companies. For these reasons the design and launch of aquaculture and forestry insurance products and programs has been scheduled to come later – in 2025/26 and 2026/27 respectively (Table 4).

There may also be opportunities to develop catastrophe climate risk parametric or index insurance as a macro level cover for national and regional governments to purchase as part of the national disaster risk financing programs for vulnerable rural people/farmers.

7. Operational considerations

This section highlights a series of operational considerations for the implementation of agricultural insurance. These considerations will need to be addressed by public and private sector stakeholders in the planning and design of TAIS policies, and should build on operating systems and procedures already put in place by the agricultural insurers.

7.1. Distribution channels

The identification of appropriate ways to distribute agricultural insurance is one of the key factors for achieving scale. Without this, even a perfect TAIS program framework and significant fiscal support may not be enough to reach uptake objectives.

Retailing insurance to smallholder farmers is extremely challenging and there are multiple reasons for this. Apart from the difficulty to efficiently reach large numbers of dispersed smallholders to service them with insurance, there are issues to do with understanding, affordability, and willingness and ability to pay. If not prompted by a clearly identifiable benefit, there are many reasons that discourage farmers from buying insurance, in particular if retailed as a stand-alone business proposition. Smallholders are frequently not familiar with insurance principles and modalities and, therefore, they may not be able to rationally assess the opportunities offered by insurance; they tend to follow traditional risk management strategies that protect for the more frequent low-to-medium impact events, but also limit their productivity; they may lack trust and are required to follow religious or cultural norms. Smallholder farmers also need to make income allocation choices for their limited resources, may see insurance as an unnecessary cost, and frequently lack the cash to actually purchase insurance or are unable to pay in full at the beginning of a growing season when premiums are due. Furthermore, in case of major shocks, farmers may also expect to receive government relief support, and this further reduces motivation to purchase insurance.

The main model of distributing insurance in Tanzania is the relationship between the insurer or insurance intermediary (agent or broker) and the policyholder. The agent model prevails in Tanzania as farmers generally access insurance through their groups or organizations – Agriculture Marketing Cooperative Societies (AMCOS), Savings and Credit Cooperative Organisations (SACCOS), Banks (Bancassurance agent) and Microfinance Institutions (MFIs) – who are either registered as insurance agents or act as administrators.

Potential distribution channels that TAIS could use are as follows:

- **Formal financial institutions (MFIs and Banks).** In Tanzania, MFIs and banks offer distribution opportunities for micro-level agricultural insurance, which can be bundled with credit. The rationale for bundling crop credit and insurance centers on leveraging access to finance for smallholder farmers. Banks and other lending institutions are often very risk averse and are therefore not prone to providing crop production loans to smallholder farmers because of their concerns about the farmers' inability to repay their loans in the event of severe climate-induced crop losses. Bundling

permits the banks to protect their loans against risks and a crop insurance policy can sometimes be used as an alternative form of collateral. Smallholder farmers benefit from bundling by having access to formal credit with which to invest in improved seed and fertilizer technology. Finally, insurers benefit from bundling of credit and insurance by having a risk aggregator to distribute their insurance products at very low cost; banks aggregate demand and are generally willing to pre-finance the farmers' crop insurance premiums against repayment at harvest.

- **However, whilst the latest FinScope survey reported that formal financial inclusion has reached 76% of the adult population, only 22.2% of adult Tanzanians have or use formal bank services. Those in rural areas, who are dependent on agriculture, remain the most financially excluded people**. Youth financial exclusion has increased to 51%. Although it is reported that overall, women do not face a significant financial services gap, it should be noted that compared to men, they have 9% less access to formal bank services (FSDT, 2023). The same study also reports that the penetration of the MFI sector is low with only 2.6% borrowing from an MFI. Agricultural insurance could potentially help scale up access to other formal financial products, and it is in line with GOT aims who are encouraging farmers to set up bank accounts. The leading banks that currently use some form of crop insurance cover are: Tanzania Agricultural Development Bank (TADB); National Microfinance Bank (NMB); CRDB Bank. Other banks that offer a potential for TAIS to work with in future including to explore microinsurance product distribution are: NBC Limited, Azania Bank, TPB, Stanbic, Finca Microfinance, UCHUMI Commercial Bank, Tandahimba Community Bank (TACOBA) and Mufindi Community Bank (MUCOBA).

- **Government input subsidy scheme.** Linking to input subsidy schemes is also an interesting option for scaling up agricultural insurance programs (see the Zambia case in section 7.2). A key opportunity for TAIS would be to leverage on the existing Ruzuku la Mbolea, the subsidized crop fertilizer scheme, to bundle and distribute crop insurance. This is for three main reasons: (i) it creates a scalable opportunity for TAIS to piggy-back on (it has registered 3,149,824 farmers of whom 826,336 have benefitted from the scheme in 2022/23); (ii) the farmer due diligence has already been carried out in terms of the registration and mapping by the government; and (iii) the farmers are familiar with the mobile money payment modalities.

- **Agro-dealers**. Crop and livestock input products offer a rationale and opportunity for bundling with agricultural insurance. In Tanzania for example, the SEEDCO maize seeds have an embedded, free basic crop insurance cover called Linda Mbegu (seed protection) underwritten by UAP Insurance. Each maize seed bag purchased has a QR code contained in the bag that needs to be scanned by the farmer for the registration process. The farmer is guided by the agro-dealer during the registration process. The Linda Mbegu cover indemnifies the farmer with replacement seeds should the ones purchased fail to germinate due to lack of rainfall during the prescribed planting window. The farmer can choose to add on to the Linda Mbegu cover by taking the top-up cover that the agro-dealer is also responsible for explaining to them. If the farmer chooses to enhance the existing cover, farmers pay the premiums through the guidance of the agro-dealers via a mobile money pay-bill number. The farmers and agro dealers have long standing customer-seller relationships based on trust that is built during the purchasing stage where farmers receive technical advice. For maize, which is recommended to be promoted under TAIS, the main dealers for TAIC to target include: Agricultural Seed Agency (ASA); Uyole, Staha, TMVI and Stuka (OPV); SeedCo, Dekalb, Meru Agro, Pioneer and Pannar (Hybrid seeds).[19]

- **Member-owned farmer or financial institutions, like AMCOS and SACCOS respectively** are also key players who could promote the uptake of both crop and livestock insurance products, and bundling with other products and services they offer, such as inputs, credit etc. The Smallholder Credit Guarantee Scheme (SCGS) and community-based financial institutions such as savings and

[19] Maize input dealers identified in IFAD-INSURED, 2021 – Unpublished. Contact insured@ifad.org to request a copy.

credit cooperative societies and village community banks were considered a breakthrough in Tanzania's agricultural financing ecosystem, reaching 2.5 million smallholder producers. These also offer linkages to digital payment channels, which are discussed in Section 7.3.

7.2. Compulsion of cover

A special case of bundling is when purchasing insurance in connection with another activity is made compulsory. Typical examples of conditional requirements are having insurance as a requisite to access input support programs or lending facilities.

International experience shows that many crop insurance programs mandatorily bundle insurance with credit provision from financial institutions (Mahul and Stutley, 2010; Schaeffer and Waters, 2016). India was until recently the world's largest compulsory crop-credit insurance market. Under the government-sponsored national crop insurance scheme (the Pradhan Mantri Fasal Bima Yojana - PMFBY), over 50 million farmers were insured per/annum of which the majority were small and marginal farmers with less than 2 ha accessing crop production loans. After more than 40 years of compulsory insurance purchase when accessing credit, in 2020, India elected to make all PMFBY insurance voluntary. However, in practice, the financial institutions have continued to automatically bundle the products, unless the farmer requests to opt out of the PMFBY. Other major crop insurance markets that have enacted legislation to make agricultural insurance compulsory for loanee farmers include Mexico, Brazil, Thailand, the Philippines. In many other countries, including in Kenya and Uganda, even in the absence of specific regulation mandating a bundled approach, financial institutions choose to make the purchase of agricultural insurance a condition of their lending to smallholder farmers. In Tanzania, the Central Bank (Bank of Tanzania) seems to be against enacting regulation to make bundling agricultural credit with insurance compulsory and is rather in favor of allowing financial institutions to adopt the preferred approach.[20]

Requesting farmers to purchase insurance to access input subsidies is another example of a mandatory conditional requirement. In Zambia, for example, agricultural insurance is bundled with a public scheme to provide subsidized agriculture inputs. In 2017/18, the government introduced a requirement to purchase insurance as a condition to access the Farmers Input Subsidy Program, which provides significant support for the purchase of production input subsidies. The purchase of insurance in Zambia scaled up in one season by a factor of 50, reaching more than 900,000 farmers. The rapid development of the Zambia program was accompanied by operational and managerial issues that needed to be addressed, but the direct link with the subsidy program allowed it to scale exponentially in just one crop season.

7.3. Payment systems (premiums and claims) and the role of digital solutions

Premium payments

Agricultural insurance premium payments are usually made through the retailing agents. Banks, MFIs, SACCOS and AMCOS provide credit solutions to farmers for the purchase of inputs and other purposes. Prior to the disbursement of the loan to the farmers, when a related agricultural insurance cover is available, a portion is allocated to the payment of the related premium. The agents remit the premiums to the insurers on behalf of the farmers. This is applicable through a concession from the regulator and applicable to microinsurance contracts.

In 2019, TIRA issued a circular as a means of ensuring that all premiums are remitted to the insurer and are not withheld by the brokers. Unfortunately, this was not happening in the past which meant that policyholder claims would not be honoured due to non-remittance of premiums. This "cash and carry"

[20] Personal communication of Bank of Tanzania to IFAD-INSURED, 8 June 2023.

approach means that neither a cover-note nor policy document can be issued to the customer prior to the payment of the premium.

Claims payments

In Tanzania most farmers do not have bank accounts themselves. Therefore, insurers make the claims payments through the AMCOS who in turn make cash payouts to the farmers. The alternative mode of claims payments to farmers is through the use of mobile money, where the farmers are indemnified through their mobile wallets on the mobile number they used to register for the agricultural insurance cover.

The role of digital solutions

Mobile and digital platforms have contributed to the growth of financial inclusion in Tanzania and offer a conducive environment for facilitating TAIS premium and claims payments. FinScope Tanzania 2023 shows mobile money agents are the most common form of financial access point: 72% of adults use mobile money services (FSDT, 2023). Although less women, youth and people in rural areas own a phone (FinScope 2023 reports 69% of Tanzanians in rural areas own a mobile phone compared to 85% in urban areas). Some mobile network operators (MNOs) are already working with insurers to operate schemes for other classes of microinsurance, such as Tigo Bima and Voda Bima.

Given their link with other distribution channels, mobile wallets offer additional opportunities for TAIS. Farmers' personal details being their National Identification Number (NIN) and mobile numbers are registered by the entities they belong to, namely SACCOS, AMCOs, Banks and MFIs and Agro-dealers. These personal details are also importantly a pre-requisite for inclusion in the government-subsidized input scheme, Ruzuku la Mbolea, which as aforementioned, offers a strong opportunity for linking with TAIS distribution. The government subsidizes the cost of a bag of fertilizer by 50%. The farmer is registered and mapped by the government. Registered farmers who opt to join the subsidy program are required to pay the remaining 50% through a mobile money pay bill number (*lipa namba*). The payment is usually done through an agro-dealer who is tasked with guiding the farmer through the various steps.

7.4. Farmer awareness and education

One of the demand side constraints related to increased insurance penetration is the lack of or limited insurance awareness by the general population.

Farmer awareness and education are crucial to build awareness and trust; to facilitate responsible purchase of insurance; to avoid any misinformed negative behaviour by the insured (such as not vaccinating livestock, when this would invalidate the cover); to allow farmers understand clearly what they are and are not covered for.

Education and awareness raising must be a concerted effort, supported also through national financial inclusion agendas, as well as integrated within a TAIS strategy itself.

There are different models used in Tanzania for micro-level agricultural insurance that could be drawn on in the first instance to learn from for TAIS:

- **Training of Trainers (ToTs) for farmers**. This is deemed effective because the master trainers are known by the fellow farmers and, since they have similar experiences to the farmers they are informing, they are best placed to be trainers.
- **Using mobile platforms to educate farmers through short messages (SMS)** – most farmers have an analogue handset rather than a smartphone. The farmers' mobile numbers are obtained either during the registration process or provided to the insurers by the agents who already have them on file (Banks, MFIs, SACCOs and AMCOs). The SMSs sent to the farmers range from

guidance on when to plant, inputs to use/how to use/when to use, and when to harvest. The farmers have the option to opt out whenever they wish to do so.

In addition, the TAIS will want to explore simple and effective information and awareness materials, understanding what is most utilized by the TAIS targets: e.g., simple pictorial pamphlets; posters in agro-dealerships; videos and radio spots. It is very important that insurance education materials are produced in Kiswahili (FSDT, 2023). One effective way to build understanding is also to show communities how other farmers are benefitting from the insurance cover – in this regard, an effective mechanism to include in TAIS implementation can be in-person payout ceremonies, which are held for more widespread index-insurance payouts.

7.5. Capacity-building and training for public and private sectors

In addition to the farmer awareness efforts mentioned in Section 7.4, consideration needs to be given on how to support capacity-building of TAIS stakeholders – all those with any management, regulatory, design, implementation (including delivery of farmer education), or monitoring role. This will be a key role of the TAIS and will require GOT investment to finance the development of training and also for its roll-out. For example, in Uganda, the UAIS developed modules and have a small budget for AIC to deliver these to train distribution channels on their roles in farmer awareness, farmer registration, premium payment, and payout distribution. Typically, however, capacity-building budgets do not match the scale ambitions of the insurance programs, and capacity gaps at all levels of the agricultural insurance market are a common challenge to helping national agricultural insurance schemes realize their potential.

Currently, there are some existing, but separate, capacity-building initiatives related to agricultural insurance in Tanzania, which are carried out by both the public and private sector as follows:

Public sector. The government holds meetings and training sessions (at most quarterly) led by the Agricultural Officers at the Provincial and District levels with leaders of the Cooperatives. The training course content focuses on crop and livestock insurance, product options and the sharing of experiences and lessons learnt.

Private sector. The capacity-building sessions are mainly carried out by insurance intermediaries and insurers for AMCOS, SACCOS, MFIs, and Banks who may have or be interested in playing a distribution role in a scheme. The training course content is similar to the public sector content as it also focuses on crop and livestock insurance, product options and the sharing of experiences and lessons learnt.

The insurance sector also carries out scheduled training courses on agricultural insurance through the main institutes and colleges: Insurance Institute of Tanzania (IIT), Institute of Finance Management (IFM) and the Africa College of Insurance and Social Protection (ACISP). These capacity-building sessions are facilitated by in-country practitioners and in some case external experts. TAIS could also consider leveraging these platforms to develop future industry capacities.

7.6. Field inspection and loss adjustment systems and procedures

Under TAIS, it will be necessary to develop and scale up field inspection and loss adjustment staffing, systems and procedures to meet the major anticipated increase in demand for subsidized indemnity-based crop, livestock, aquaculture and forestry insurance products and programs by large numbers of Tanzanian farmers. Currently in Tanzania, few of the agricultural insurance companies have invested in their own dedicated teams of crop and livestock inspectors and loss adjusters to assess and measure in field-crop damage and/or yield losses and this also applies to the assessment of causes of livestock loss. There are 27 non-life general loss adjusting companies which are registered with and approved by TIRA, but these firms do not have expertise in adjusting agricultural losses. Local

insurers currently contract two agricultural insurance technical service providers that offer specialist field services.

With the formation of the TAIC to underwrite the TAIS products, all field inspection and loss adjusting could potentially be contracted out by the Consortium to one or more existing/new service providers. Conversely, the Consortium may wish to invest in its own field-level loss inspection and loss adjusting capability. The main advantage of contracting out services to existing specialist companies is that the Consortium would be able to immediately start underwriting crop and livestock insurance business. However, if it must form its own loss adjusting capability and recruit and train its own staff, this will take at least six-months or more. A further advantage of the Consortium contracting out loss adjusting to a third party is that it ensures independence (and therefore reduces the potential conflict of interest) of and between the underwriting and risk acceptance functions by the insurers, and the assessment of damages and losses by the contracted loss adjusters.

In Tanzania service providers have developed crop field inspection and loss adjustment procedures for:

- NPCI damage-based crop insurance policies, where the adjusters conduct individual farmer and plot in-field sampling at the time of loss to estimate the percentage damage or loss of the crop;
- MPCI loss of yield-based crop insurance policies, where the adjusters conduct individual farmer and plot in-field yield sampling at the time of harvest to estimate the actual yield for the plot and the amount of insured yield shortfall. These procedures adopt standard CCE methodology to estimate yield shortfall on the MPCI programs.
- AYII, where CCEs are carried out on a sample of randomly selected farmers' fields to estimate the area average yield (the index) of the insured crop in each defined unit area of insurance (e.g. a Ward).

Box 4. Example of field Inspection and loss adjustment systems and procedures for index insurance adopted in the Tanzanian market

The following is an example of loss assessment procedures carried out in Tanzania. The systems and procedures for loss adjustment are dependent on the insurance product and crop.

In the case of AYII covers, the following procedure is followed;

- The region is mapped to determine homogenous areas.
- The cropping calendar is set.
- Field officers are trained (the number of field officers is based on number of farmers and size of plots in the area).
- The tools (weighing scale, ropes, etc.) are procured and in place.
- Three visits are carried out in each location during the cover period.
- The probability of the of loss is determined.
- CCEs are then done to carry out the loss adjustment.

In the case of WII covers, the following procedure is currently followed:

- GIS mapping of the area is carried out.
- The weather monitoring systems are connected.
- The selected weather variables are measured and monthly weather reports are generated.
- If there is a claim, the system automatically alerts the user.

Source: Authors' personal communications with service providers

In-field crop loss adjustment is both time consuming and very expensive to conduct on small farm units and therefore the TAIC will need to balance the amount of business it writes on an individual farmer basis (e.g. NPCI and MPCI) with that on an index-based basis, ideally using AYII for which the costs of the sample CCEs are spread over many insured farmers.

In the case of livestock insurance, if the TAIC plan to underwrite individual animal dairy and/or beef cattle insurance, it will need to develop field inspection and loss assessment systems and procedures, either recruiting public sector veterinary staff from MoLF, and/or private sector veterinarians. The Consortium will need to develop low-cost pre-inspection systems and procedures for dairy cattle that cover:

- Unique animal identification using tagging, or RFID micro-chip identification.
- Animal health inspection and certification of a clean bill of health at the time of risk acceptance.
- Vaccination of animals for insurance purposes.
- Registration of all animals for insurance purposes.

Leading on from the above, it will be necessary for the TAIC to develop low-cost procedures for livestock producers to notify losses to the insurer and for the insurers to appoint a veterinarian to certify the cause of accidental injury and or death of the animal.

8. Financial requirements to support sustained scalability and sustainability of TAIS

8.1. Government targets for TAIS

GOT places high priority on the development of agricultural insurance under TAIS with a focus on insurance for smallholder and semi-commercial farmers and it has set very ambitious targets for agricultural insurance uptake and penetration with a goal of reaching 10% of total insurance premium by 2030.[21] IFAD-INSURED note that in 2021 actual agricultural insurance gross written premium (GWP) was TZS 1,323.7 million (USD 0.55 million) or only 0.2% of total non-life (general) GWP of TZS 746.4 billion (USD 311.0 million) (TIRA 2022).[22] If we assume government plans to increase the share of agricultural insurance premium to 10% of non-life GWP by 2030, this implies a very ambitious fifty times increase in agricultural insurance written premiums over the next seven years.

At the request of TIRA, IFAD-INSURED has prepared some uptake and financial projections for TAIS for the period 2024 up to 2030 along with the indicative costs to GOT of premium subsidies and the costs of other forms of financial support to scheme implementation. Under Technical Note 4, a simple Excel-based TAIS insurance uptake and fiscal costing tool has been designed to enable TIRA and MOF to develop scenarios by modifying any of the parameters and underlying assumptions used in this analysis. Technical Note 4 details the assumptions used in the design of the Excel tool and full results of the various scenarios that have been modelled. The following sections summarize the key results from Technical Note 4 where the full analysis is available.

8.2. Government financial support to TAIS

Premium subsidies

Under TAIS, GOT is studying the role of premium subsidies and the levels of premiums subsidies that it may prudently afford. A central aim of this IFAD-INSURED uptake analysis and fiscal costings

[21] See the Financial Sector Development Master Plan 2020/21 to 2029 (MOF, 2020, page 56), which states: "10% of the total insurance premium contributed by agricultural insurance by 2030", and TIRA, 2023, which states: "Increased agricultural insurance coverage from the current less than 1% to 10% of GWP by 2030 in line with the FSDMP".

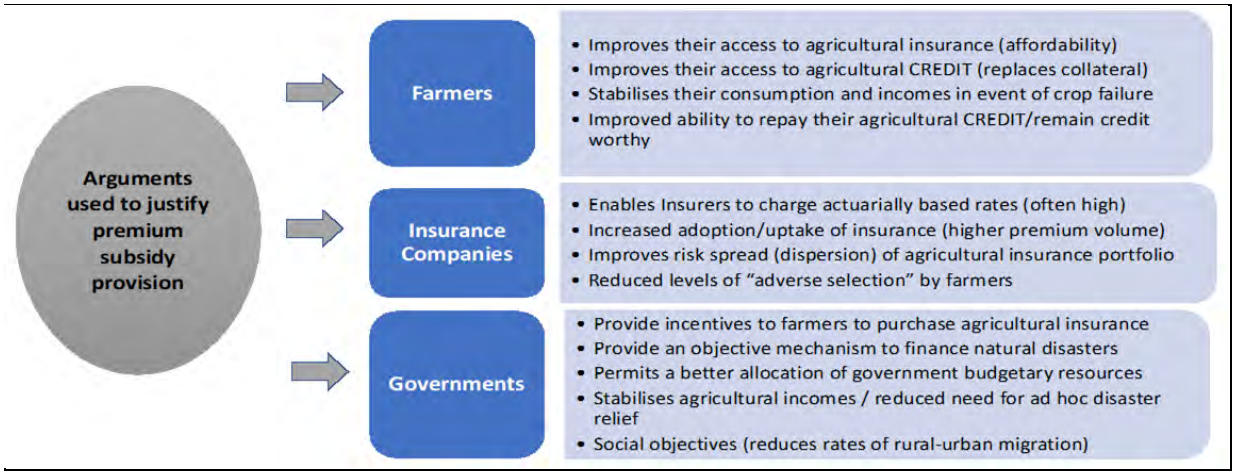
[22] IFAD-INSURED note that, in the illustrative modelling of TAIS agricultural insurance uptake and fiscal costings, the target of 10% of Non-Life Gross Written Premium has been used and not "total insurance premium", which would include life and non-life premium.

exercise is to provide TIRA and GOT guidance on international best practice with premium subsidy provision and to provide estimates of the costs of premium subsidies under different uptake scenarios.

Premium subsidies are the most widely practised form of government support to the (mainly) individual-farmer micro-level agricultural insurance programs operating in both developed and developing countries. A 2008 study of agricultural insurance provision in over 65 countries, reported that premium subsidies were the most common form of government support in nearly two-thirds (63%) of countries (Mahul and Stutley, 2010).

The rationale for government premium subsidies centers on the need to make agricultural insurance policies more affordable and accessible to small-scale farmers who are usually their primary target. Financial institutions (banks and insurers) also benefit where premium subsidy provision leads to increased uptake and penetration by farmers: where a farmer has a crop insurance policy, banks can improve their loan recovery rates in the event of severe crop failure, while increased adoption of insurance usually means that insurance companies achieve a better spread of risk and benefit from reduced adverse selection. Finally, governments can use premium subsidies to promote private sector agricultural insurance as a means of replacing ad hoc disaster relief (see Figure 6 below for further details).

Figure 6. Rationale for the use of premium subsidies in agricultural insurance



Source: Authors

There are, however, several potential drawbacks of premium subsidies unless these are carefully planned. The provision of non-discriminatory premium subsidies is potentially regressive because it disproportionately benefits the larger farmers to the detriment of small and marginal farmers: the best programs therefore either put a cap on the amount of subsidy that larger farmers can receive, and/or reduce the level of premium subsidy that larger farmers are eligible for (as per UAIS in Uganda).[23] Premium subsidies that cover a large part of the overall premium can promote moral hazard, encouraging farmers to grow high-risk crops in regions that are not technically suited to the crop. Once premium subsidies have been introduced by governments, it is politically very difficult to reduce or to withdraw them. In many of the countries that operate nondiscriminatory premium subsidies, the fiscal costs to the government are extremely high; and as insurance penetration increases, subsidies place an increasing burden on the national budget (Mahul and Stutley, 2010).

For the purposes of the TAIS, IFAD-INSURED recommend that TIRA, GOT and TAIS stakeholders consider a simple form of premium subsidies that could be set at 50% of the commercial premium for nearly all crop, livestock, aquaculture and forestry programs, with the possible exception of satellite drought index insurance for vulnerable pastoralists (IBLI), where premium subsidies may need

[23] For example, TIRA could put a cap of 5 ha or 10 ha per farmer for premium subsidy purposes, and also consider offering larger farmers a lower premium subsidy level such as 30% of premium, compared to a 50% subsidy for small and medium farmers as defined.

to be considerably higher to reflect the high premium rates on this product and the low purchasing power of small scale livestock herders of cattle, sheep and goats.

Other forms of government financial support to TAIS

In the context of Tanzania, IFAD-INSURED believe that, in addition to premium support, there are three other key areas under which GOT can support the roll-out and scale-up of TAIS including contributions towards the costs of:

1) **Registering farmers and livestock producers in opening of payment accounts** so that they can pay premiums to insurers and directly receive claims payments from the insurers.
2) **Farmer insurance awareness and education.** International experience shows that major investment is required in farmer training so that over time they gain knowledge and understanding of and trust in the insurance products and are more likely to renew cover in subsequent years.
3) **Strengthening of data systems,** including financial support for the costs of developing staffing and systems and procedures for AYII CCEs, animal registration and tagging (see Technical Note 4 for full details).

8.3. Uptake projections and costs

TAIS uptake and financial projections have been presented for three main agricultural insurance uptake and premium growth scenarios between 2024 and 2030:

- **HIGH uptake**: agricultural insurance premium reaches 10% of non-life GWP or USD 61.4 million by 2030. This is the premium target that TIRA / GoT aim to achieve by 2030.
- **MEDIUM uptake**: agricultural insurance premium reaches 7.5% of non-life GWP or USD 46.0 million by 2030.
- **LOW uptake**: agricultural insurance premium reaches 5% of non-life GWP or USD 21.5 million by 2030.

Under the "High uptake scenario", whereby TAIS agricultural insurance premiums will reach 10% of non-life Gross Written Premium, the estimated number of insured farmers would increase from slightly less than 75,000 farmers in 2024 to slightly more than 1 million farmers by 2030, with a corresponding growth in annual premium from USD 3.9 million in 2024 to USD 61.4 million by 2030 (Table 5). Under the assumption that government finances 50% premium subsidies for nearly all TAIS product lines/programs (see discussion above), the costs of premium subsidies under the high uptake scenario would rise from USD 2.0 million in 2024 to USD 33.2 million in 2030, with a total cost of premium subsidies over seven years of USD 96.9 million. With the inclusion of financial support for other TAIS operational costs such as farmer registration, farmer education and training and opening of payment accounts, the total costs to government would rise to USD 115 million over seven years.

The TAIS high uptake scenario is very ambitious and could only be achieved through major financial commitment from GOT and/or donors and an equal commitment by the TAIC insurers to invest in new distribution channels and high levels of staffing, systems and procedures to reach the very large numbers of insured farmers implied under the high uptake scenario. If budgetary constraints apply it may be necessary to downscale the uptake projections and, for these reasons, IFAD-INSURED have modelled the medium and low uptake scenarios, the results of which are summarized in Table 5. Further details of the TAIS uptake scenarios and costs of government premium subsidies assuming different levels of subsidies are contained in Technical Note 4.

Table 5. TAIS uptake scenarios, premiums, premium subsidies and other government support costs from 2024 to 2030

TAIS: Number of Insured Farmers (crops, livestock, aquaculture and forestry)			
Year	**High Uptake**	**Medium Uptake**	**Low Uptake**
2024	74,299	37,150	37,150
2025	197,563	79,025	59,269
2026	289,547	124,092	82,728
2027	396,911	220,506	132,304
2028	460,286	322,200	184,114
2029	733,365	488,910	244,455
2030	**1,043,608**	**782,706**	**365,263**
Total	**3,195,579**	**2,054,588**	**1,105,282**
TAIS: Premium income by year (US$ Million)			
Year	**High Uptake**	**Medium Uptake**	**Low Uptake**
2024	3.9	2.0	2.0
2025	10.5	4.2	3.2
2026	15.9	6.8	4.5
2027	22.0	12.2	7.3
2028	26.4	18.5	10.6
2029	42.7	28.5	14.2
2030	**61.4**	**46.0**	**21.5**
Total	**182.7**	**118.1**	**63.2**
TAIS: Premium Subsidies by year (US$ Million)			
Year	**High Uptake**	**Medium Uptake**	**Low Uptake**
2024	2.0	1.0	1.0
2025	5.3	2.1	1.6
2026	8.1	3.5	2.3
2027	11.4	6.3	3.8
2028	14.0	9.8	5.6
2029	22.9	15.3	7.6
2030	**33.2**	**24.9**	**11.6**
Total	**96.9**	**62.9**	**33.5**
TAIS: Total Costs of Premium Subsidies and Other Financial Support by year (US$ Million)			
Year	**High Uptake**	**Medium Uptake**	**Low Uptake**
2024	2.6	1.3	1.3
2025	6.7	2.6	1.9
2026	9.7	4.2	2.8
2027	13.6	7.7	4.6
2028	16.2	11.6	6.6
2029	27.2	18.1	8.9
2030	**38.9**	**29.5**	**13.7**
Total	**114.9**	**75.0**	**39.8**

Source: IFAD-INSURED Technical Note 4 "Tanzania Agricultural Insurance Scheme: Projected Insurance Uptake and Fiscal Costs 2024 to 2030"

By way of next steps, TIRA and TAIS public and private sector stakeholders are encouraged to use the Excel model to refine these uptake projections and fiscal costs to government.

9. TAIS Roadmap 2023 to 2030

The TAIS Roadmap developed by IFAD-INSURED covers the period from September 2023 to the end of 2030. It is structured in the following groups of tasks and activities, which will need to be performed in the planning and design, implementation and scale-up of TAIS over this period:

1. TAIS INSTITUTIONAL FRAMEWORK
2. TAIS NATIONAL POLICY
3. FINANCIAL SUPPORT FOR TAIS FROM 2024 to 2030
4. REGULATIONS FOR AGRICULTURAL INSURANCE
5. INDUSTRY MARKET ARRANGEMENTS FOR AGRICULTURAL INSURANCE
6. PRODUCT DESIGN AND IMPLEMENTATION
7. MONITORING & EVALUATION and AUDIT
8. PRODUCT DESIGN AND IMPLEMENTATION WORK PLANS (to be developed for each type of insurance product)

The paragraphs that follow provide a summarized description of the activities listed in the Roadmap. The full Roadmap is provided in Technical Note 4 "Roadmap for the Development and Implementation of the Tanzania Agricultural Insurance Scheme" which is composed of two parts: a Word document and an accompanying Excel workbook.

9.1. TAIS Institutional Framework (Roadmap point 1)

The development of TAIS should start with the set-up of the TAIS Institutional Framework. IFAD-INSURED Technical Note 1 "Guidance Note on the Development of an Institutional Framework for the Tanzania Agricultural Insurance Scheme", provides specific recommendations on the type of institutional framework that could suit the needs of Tanzania. The note recommends structuring the framework around a High-level Steering Committee, an Interministerial Technical Support Unit, and a joint Public-Private Technical Committee. Significant progress has been achieved on this side: under the leadership of TIRA, a Steering Committee and a Technical Committee have been already set up. Technical Note 1 also presented potential market coordination mechanisms for the insurance industry and, as mentioned above, this has been addressed with the formation of the TAIC that was launched on the 1st of July 2023.

A critical activity for allowing the TAIS Institutional Framework to function effectively is the identification of sources and amounts of funding for operating TAIS institutions, and this is a key activity to be carried out in the immediate future.

The timeframe suggested for carrying out tasks related to point 1 of the Roadmap is between September and December 2023.

Figure 7. TAIS INSTITUTIONAL FRAMEWORK (Roadmap point 1). Tasks and timeline

			2023				2024	
Code	Item	Responsibility	Sep	Oct	Nov	Dec	Jan	Feb
1	TAIS INSTITUTIONAL FRAMEWORK							
1.1	Establish the TAIS Institutional Framework, potentially composed by a High-level Steering Committee, an Intergovernmental Technical Support Unit , and a joint Public-Private Technical Committee (see IFAD-INSURED Deliverable 1)	TIRA, GOT						
1.2	Identify funding sources and amounts for operating TAIS institutions	TIRA, GOT						

9.2. TAIS National Policy (Roadmap point 2)

In parallel to the establishment of the TAIS Institutional Framework under point 1 of the Roadmap, particular care should be provided by the relevant line ministries – in particular by MOA and MOLF – in the definition of the TAIS policy environment. Parameters such as the farmers to be targeted; the

sectors and the specific commodities to be covered; government policy towards TAIS premium subsidies and other types of financial support to TAIS; the retail/distribution linkages for TAIS insurance policies to be adopted are all items that need clear policy guidelines. Such guidelines will then also inform the Regulation on Agricultural Insurance (point 4 of the Roadmap) to be enacted by the Commissioner of Insurance.

The timeframe suggested for carrying out tasks related to point 2 of the Roadmap is between September and December 2023.

Figure 8. TAIS NATIONAL POLICY (Roadmap point 2). Tasks and timeline

Code	Item	Responsibility	Sep	Oct	Nov	Dec	Jan	Feb
2	TAIS NATIONAL POLICY							
2.1	Develop TAIS National Policy specifying the parameters of the program, including: • Identification of target farmers for TAIS support • Identification of target sectors and commodities for TAIS support • Identification of retail/distribution linkages between TAIS insurance policies and other government programs for agriculture, including natural disaster relief, subsidised input supply and credit • Proposals for TAIS policy towards premium subsidies and other types of financial support	TIRA, MOA, MOLF						

9.3. Financial support for TAIS from 2024 to 2030 (Roadmap point 3)

In addition to the funding for operating TAIS institutions mentioned in point 1, and on the basis of the TAIS policy guidelines discussed in point 2, the relevant line ministries and government institutions should coordinate to allocate budget for: a) financial support for the purchase of insurance (i.e., premium subsidies); b) other financial support for data strengthening, awareness creation, farmer registration, livestock identification, etc. To this end, IFAD-INSURED Technical Note 4 "Tanzania Agricultural Insurance Scheme: Projected Insurance Uptake and Fiscal Costs 2024 to 2030" provides a detailed analysis of the funding potentially required.

A critical related activity is the development of systems and procedures for managing premium subsidy disbursements and the identification of the institution that will manage premium subsidy payments to insurers and monitor and audit subsidy payments. This is very important in order to allow the system to operate in a coordinated and transparent way.

Given the significant fiscal impact of supporting the national program on agricultural insurance, GOT may also want to engage in exploring potential donor support for premium subsidies and other activities.

The timeframe suggested for carrying out tasks related to point 3 of the Roadmap is between September 2023 and February 2024.

Figure 9. FINANCIAL SUPPORT FOR TAIS FROM 2024 to 2030 (Roadmap point 3). Tasks and timeline

			2023				2024			
Code	Item	Responsibility	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
3	FINANCIAL SUPPORT FOR TAIS FROM 2024 to 2030									
3.1	Based on National Policy decisions in point 2. and on IFAD-INSURED Deliverables 4 and 5, review uptake and costing projections and submit to relevant line ministries and government institutions to allocate budget for: - Premium subsidies - Other financial support for data strengthening, awareness creation, farmer registration, livestock identification using tagging or RFID technology etc)	MOF, MOA, MOLF, TIRA								
3.2	Design systems and procedures for managing premium subsidy disbursements and identify the entity that will manage premium subsidy payments to insurers and monitor and audit subsidy payments	TAIS, MOF, TIRA								
3.3	Explore potential donor support for premium subsidies and other activities	TAIS, MOF, TIRA								

9.4. Regulations for agricultural insurance (Roadmap point 4)

Based on the policy decisions discussed in point 2, and on IFAD-INSURED Technical Note 2 "Technical Review of the TIRA 2019 Draft Agriculture Insurance Regulations", TIRA could revise the Agricultural Insurance Draft Regulations of 2019 and enact the definitive text. As suggested in Technical Note 2, the Regulations could take a broad and comprehensive approach, covering both subsidized and non-subsidized agricultural insurance products. With respect to the enhancement of the 2019 Draft, specific care should be put into adding provisions for index insurance. Also, addition of regulations for Sharia compliant agricultural insurance market development could be considered and included.

Given the need to constantly monitor and update the TAIS operational mechanisms, TAIS institutions could consider issuing "Annual Agricultural Insurance Plans", as happens in the main agricultural insurance programs around the world. This may also allow the Regulations on Agricultural Insurance to cover the general features of agricultural insurance, leaving to the TAIS annual plans the definition of the more operational details and the uptake projections and government budget for premium subsidies and other support costs for the forthcoming year.

The timeframe suggested for carrying out the preparatory tasks related to point 4 of the Roadmap is January to February 2024, following the completion of the tasks for points 1 and 2. The potential "Annual Agricultural Insurance Plans" could be issued before the start of the year the plan relates to.

Figure 10. REGULATIONS FOR AGRICULTURAL INSURANCE (Roadmap point 4). Tasks and timeline

			2023				2024				
Code	Item	Responsibility	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
4	REGULATIONS FOR AGRICULTURAL INSURANCE										
4.1	Based on National Policy decisions in point 2. and on IFAD-INSURED Deliverable 2, revise and enact Agricultural Insurance Draft Regulations, covering both subsidised and other non-subsidised agri-insurance products, and adding provisions for index insurance (if required, study potential for Sharia compliant agricultural insurance market development).	TIRA									
4.2	Develop "Annual Agricultural Insurance Plans" to define and update the operational details of the TAIS programs for each year.	TAIS INSTITUTIONS					TO BE ISSUED BEFORE THE START OF THE YEAR THE PLAN RELATES TO				

9.5. Develop industry market arrangements for agricultural insurance (Roadmap point 5)

Under the guidance of TIRA and the coordination of the Association of Tanzania Insurers (ATI), and with the objective of developing and scaling up the market for agricultural insurance, the insurance industry of Tanzania has decided to form the Tanzania Agricultural Insurance Consortium (TAIC). The TAIC will be responsible for underwriting the TAIS and is comprised of 15

non-life insurance companies. The TAIC was launched on the 1st of July 2023 at an official ceremony led by the Minister for Agriculture, Hon. Hussein Bashe. Hence, this point of the Roadmap has been addressed.

Figure 11. INDUSTRY MARKET ARRANGEMENTS FOR AGRICULTURAL INSURANCE (Roadmap point 5). Tasks and timeline

			2023				2024	
Code	Item	Responsibility	Sep	Oct	Nov	Dec	Jan	Feb
5	INDUSTRY MARKET ARRANGEMENTS FOR AGRICULTURAL INSURANCE	Activity completed. The insurance industry has established the TAIC						

9.6. Product design and implementation (Roadmap point 6)

With the objective of distributing TAIS policies to farmers as soon as possible, whilst TAIS' institutional framework, funding, and regulatory aspects are being addressed, the design and the testing of TAIS agricultural insurance products (policies) should also begin in 2023. This is one of the most complex and relevant set of activities covered in the Roadmap, and the success of the program will be heavily dependent on how these are carried out.

It is important to highlight that in Tanzania, the insurance industry is already active in retailing and implementing different types of agricultural insurance products (e.g. NPCI, MPCI, AYII – see Section 6.1 for more details). However, TAIS will provide the industry with the opportunity to revise, improve and retail products in different and more competitive ways. Hence, although there is a significant amount of experience and expertise in the Tanzanian agricultural insurance market, integrating product development in the TAIS process will allow the industry to improve the supply of agricultural insurance and increase its penetration.

The steps suggested by IFAD-INSURED for crop, livestock, aquaculture and forestry insurance product design and implementation under the TAIS are the following:

- In the framework of the "joint Public-Private Technical Committee", allow the TAIC to liaise with the other TAIS stakeholders to specify industry requirements for design and implementation of agricultural insurance policies. In particular, it would be critical that TAIC and other stakeholders coordinate on who will carry out product design, and if and how external expertise can contribute to the product development process.
- Coordinate with international development partners that can provide funding and expertise in product design and implementation – this is strictly related to the point above in which TAIC should first indicate their interest and availability in cooperating with international partners that can support the product design and implementation process.
- Carry out detailed surveys with farmer focus groups to examine the risks to be covered and the loss histories in the various regions. This is a fundamental activity to achieve good product design, in particular for index insurance programs, and government staff or dedicated service providers should be mandated to carry out such tasks.
- Carefully identify programs to which insurance can be linked (e.g., input subsidy programs, agricultural credit) to grant appropriate scale-up of insurance products – even if appropriate institutional settings and financial support are made available, the program is unlikely to reach scale if distribution links are not properly established.
- Design, test and implement the following insurance products:
  - Area Yield Index Insurance (AYII) and other indices for food crops
  - Named Peril Crop Insurance (NPCI) for cash crops

- Dairy Cattle indemnity insurance
- Index Based Livestock Insurance (IBLI) for pastoralists (based on NDVI or other indices)
- Aquaculture insurance (Named Peril Indemnity)
- Forestry insurance (Fire FLEXA)

To avoid overloading the TAIS system, IFAD-INSURED proposes to follow a gradual approach, in which the design and implementation activities of the different products are spread over time, in the order in which the products are listed above. The sequence and timing proposed by IFAD INSURED are clearly tentative suggestions and the definition of the actual progression should be left to TAIS stakeholders.

The timeframe suggested for carrying out tasks related to point 6 of the Roadmap is between September 2023 and January 2024 for the coordination and planning activities, and between 2023 and 2027 for the implementation of all product typologies. In the Roadmap tables the preliminary design and testing activities that are foreseen for all products are highlighted in orange.

Figure 12. PRODUCT DESIGN AND IMPLEMENTATION (Roadmap point 6). Tasks and timeline

			2023				2024		
Code	Item	Responsibility	Sep	Oct	Nov	Dec	Jan	Feb	Mar
6	PRODUCT DESIGN AND IMPLEMENTATION								
6.1	Coordinate with the Tanzania Agricultural insurance Consortium within the "joint Public-Private Technical Committee" to identify industry requirements for design and implementation of agricultural insurance policies	TIRA, TAIC, ATI							
6.2	Coordinate with international development partners for funding and expertise in product design and implementation	TIRA, TAIC							
6.3	Carry out detailed surveys with focus groups discussions to examine the risks to be covered and the loss histories in the various regions (this is critical for good product design)	APPOINTED RESEARCH INSTITUTION / PRODUCT DESIGNERS							
6.4	Carefully identify programs to which insurance can be linked (e.g.input subsidy programs, agricultural credit, etc.) to guarantee appropriate scale up of insurance products	MOA, MOLF, TIRA, TADB, COMMERCIAL BANKS							

			2023				2024				2025		2026		2027	2028	2029	2030
Code	Item	Responsibility	Sep	Oct	Nov	Dec	1st Q	2nd Q	3rd Q	4th Q	1st S	2nd S	1st S	2nd S				
6.5	A) Policy design and testing (ORANGE) + B) full implementation (YELLOW) for the following covers:	APPOINTED PRODUCT DESIGNERS, TAIC																
6.5.1	- AYII (and other indices) for food crops																	
6.5.2	- NPCI for cash crops																	
6.5.3	- Dairy Cattle indemnity insurance																	
6.5.4	- IBLI for pastoralists (based on NDVI or other insdices)																	
6.5.5	- Aquaculture (Named Peril Indemnity)																	
6.5.6	- Forestry (Fire FLEXA)																	

Color Key:	ORANGE: Policy design and testing	YELLOW: Product implementation

With respect to product design and implementation, the Roadmap also provides example work plans that are specific to three of the key products that should be developed: (i) AYII for food crops, (ii) Weather/vegetation index insurance for food crops; (iii) IBLI for pastoralists. Annex 2 presents the lists of activities for these products. Such examples of product design and implementation work plans need to be reviewed and validated by TAIS stakeholders and then developed for all TAIS products.

9.7. Monitoring & Evaluation and Audit (Roadmap point 7)

Finally, crucial elements of an agricultural insurance program are Monitoring & Evaluation (M&E), and Auditing. An M&E system is a key requirement to track the performance and implementation progress of an agricultural insurance program. The implementation of an M&E system allows assessment of the program's inputs and outputs, timeliness, effectiveness, and impact; it also facilitates information-sharing, decision making and periodical reviews to address any new challenges and emerging issues.

Equally important, appropriate auditing procedures are fundamental for guaranteeing the transparent and correct use of fiscal resources allocated to support the TAIS. The tasks to be carried out can be segmented between the development and testing of both the TAIS M&E and Auditing systems from December 2023 to March 2024, followed by their implementation starting in April 2024.

Figure 13. MONITORING & EVALUATION and AUDIT (Roadmap point 7). Tasks and timeline.

			2023				2024												2025				2026		2027		2028		2029		2030	
Code	Item	Responsibility	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	1st Q	2nd Q	3rd Q	4th Q	1st S	2nd S	1st S	2nd S	1st S	2nd S	1st S	2nd S	1st S	2nd S
7	MONITORING & EVALUATION and AUDIT																															
7.1	Develop and test TAIS Monitoring & Evaluation framework	TAIS INSTITUTIONS																														
7.2	Develop and test TAIS Audit Protocols																															
7.3	Implement TAIS Monitoring & Evaluation framework																															
7.4	Implement TAIS Audit Protocols																															

10. Conclusions and recommendations

This report brings together the analyses and recommendations developed by IFAD-INSURED for TIRA for the set-up of TAIS, the national scheme for agricultural insurance in Tanzania. The report is supported by four Technical Notes that explore in more detail topics such as the development of a PPP institutional framework for TAIS; the regulations for agricultural insurance; the activities required to develop and implement the TAIS framework and the insurance products; and the uptake and financial dynamics of insurance supply under the TAIS.

The broad objective of the TAIS is to contribute to the transformation of subsistence farmers into sustainable commercial farmers by enhancing resilience measures from shock events such as weather and climate vagaries, pests, and diseases (TIRA, 2021).

Based on international experience, and in particular on lessons learnt in the development of agricultural insurance programs in Africa, IFAD-INSURED recommends establishing the TAIS on the basis of a PPP approach. IFAD-INSURED's suggestion is for Tanzania to start with a lean PPP structure and, as the program develops, potentially plan for more complex structures. The key components around which such a framework could be structured are: (i) a High-level Steering Committee (SC), (ii) an Interministerial Technical Support Unit (TSU), and (iii) a Technical Committee (see Section 4). The private sector is going to take part in the TAIS through the coinsurance consortium TAIC, which was launched in July 2023. Interaction between the public and private components of the systems would take place in the Technical Committee. If considered useful, an International Advisory Team could be also set up to provide technical and policy advice, in particular in the initial stages of development and implementation of TAIS products.

IFAD-INSURED recommends that dedicated regulations for agricultural insurance are developed and enacted. To this end, following a request from TIRA, the IFAD-INSURED team reviewed the 2019 Draft Agriculture Insurance Regulations. The suggestions provided in IFAD-INSURED Technical Note 2, which are summarized in Section 5 of this report, include: (i) Extend the scope of regulations to all agricultural insurance products, TAIS and non-TAIS; (ii) Devote specific attention to regulating index insurance products, which are likely to play a major role in the TAIS framework; (iii) Explicitly define the premium subsidy regime that will apply to TAIS and the conditions for insurers to access premium subsidy support; (iv) Consider issuing "Annual Agricultural Insurance Plans", to address more operational and variable details of TAIS, while leaving the Regulations to cover the general features of agricultural insurance; (v) Set up provisions for timely approval of agricultural insurance products and consider a potential "sandbox" approach for regulating innovative products.

IFAD-INSURED recommends that GOT accurately and prospectively defines the level of fiscal support that can be provided to the TAIS system and to the related insurance products. International experience has shown that fiscal support is a key driver of a successful development of an agricultural insurance program. Support can be provided in the form of premium subsidies, but also for

complementary activities such as registering farmers and livestock producers; enhancing farmer insurance awareness and education; strengthening infrastructure and data collection and management systems. A balanced and sustainable long-term commitment of fiscal support will be critical for the long-term sustainability of TAIS. To assist TIRA, MoF and other stakeholders to assess the likely costs of premium subsidies and other support costs for TAIS, under Technical Note 4, a series of TAIS farmer uptake scenarios over the period 2024 to 2030 and corresponding indicative costs of premium subsidies and other support costs are provided. Under the high uptake scenario whereby agricultural insurance premium reaches 10% of non-life total gross written premium, the indicative costs to GOT of TAIS financial support would be USD 39 million per year by 2030 (assuming full-scale implementation) and the total costs over seven-years would be about USD 115 million (see Section 8 of this report for a summary).

IFAD-INSURED suggests that TAIS should focus the design, testing and implementation activities on the following agricultural insurance products:

- Area Yield Index Insurance (AYII) and other indices for food crops
- Named Peril Crop Insurance (NPCI) for cash crops
- Dairy Cattle indemnity insurance
- Index Based Livestock Insurance (IBLI) for pastoralists (based on NDVI or other indices)
- Aquaculture insurance (Named Peril Indemnity)
- Forestry insurance (Fire FLEXA)

The recommendation is to follow a gradual product development approach, in which the design and implementation activities of the different products are spread over the period 2023 to 2026.

IFAD-INSURED has developed a detailed Roadmap for the implementation of TAIS activities. The Roadmap covers the period from September 2023 to the end of 2030 and is structured in the following groups of tasks and activities that will need to be performed in the planning and design, implementation and scale-up of TAIS over this period:

1. TAIS INSTITUTIONAL FRAMEWORK
2. TAIS NATIONAL POLICY
3. FINANCIAL SUPPORT FOR TAIS FROM 2024 to 2030
4. REGULATIONS FOR AGRICULTURAL INSURANCE
5. INDUSTRY MARKET ARRANGEMENTS FOR AGRICULTURAL INSURANCE
6. PRODUCT DESIGN AND IMPLEMENTATION
7. MONITORING & EVALUATION and AUDIT
8. PRODUCT DESIGN AND IMPLEMENTATION WORKSTREAMS (to be developed for each type of insurance product)

The sequence and timing proposed by IFAD-INSURED in the Roadmap that has been developed (see Section 9 of this note and Technical Note 3), are tentative suggestions and the definition of the actual progression should be left to TAIS stakeholders.

Finally, IFAD-INSURED recommends that all TAIS stakeholders carefully take stock of the potential risks that can hamper a successful implementation of the TAIS and consider adopting the appropriate mitigation measures. Table 6 provides examples of the risks that the TAIS may face and of the measures that can mitigate their impact.

Table 6. Potential risks and mitigation measures for a successful implementation of the TAIS

Risks	Mitigation Measures
Lack of participation by the insurance industry	- Develop a dedicated institutional structure in which the public and private sectors can interact and the requirements and concerns of the private sector can be addressed - Provide fiscal support to agricultural insurance to make the business proposition more sustainable - Establish accurate agricultural insurance regulation to generate a clear and incentivizing operational environment
Lack of take-up from farmers	- Identify the appropriate farmer segments to be targeted - Link insurance with a conditional requirement or value proposition - Reduce the cost of the covers for farmers through dedicated fiscal support (mainly premium co-financing)
Poor performance of the insurance products	- Carry out appropriate design of the products (particularly for index insurance) - Set up a structured and well-planned testing activity for new products, and test different potential approaches comparatively - Carefully monitor and evaluate the results of the testing activity - Strengthen data collection
Issues in long-term sustainability of the program	- Set up a dedicated and effective institutional framework to manage the program - Establish high-level effective public governance of the agricultural insurance program - Carefully assess fiscal cost requirements to support the program and make long-term commitments

Source: World Bank, Forthcoming.

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ANNEX 1. Priority commodities by value chains in agro-ecological zones/clusters in Tanzania

The Agricultural Sector Development Programme II (ASDP II), page 33, provides the following information (Government of the United Republic of Tanzania, 2017):

Priority commodity selection. Using contributions to national food security, the food import bill and export revenues, and contributions to the value of agricultural production as criteria, few commodities emerged as critical for economic growth and poverty reduction. In terms of contribution to kilocalories of food intake by Tanzanians, maize, cassava, rice and pulses contribute about 53%. In the area of agricultural trade, tobacco (17.6%), cotton (14.5%) and coffee (14.1%) contribute about 46% of the export value. Wheat (31.4%) and palm oil (27.3%) form the main share of total food import value as shown in the Table below.

Table 7. Commodities coverage, agricultural production, trade and diet (2005–2010)

Commodity	Share of production value	Share of export value	Share of import value	Share of kcal intake*
Cashew nuts	1.2	6.7	0.0	0.2
Coffee	0.8	14.1	0.0	0.0
Cow milk	7.3	0.0	0.6	2.6
Maize	**6.5**	**0.8**	2.9	**24.3**
Pulses	10.6	7.5	0.7	8.5
Rice	5.2	n.d.	n.d.	9.1
Cotton	2.9	14.5	0.1	n.a.
Sugar	1.2	1.6	8.6	4.0
Wheat	0.2	1.4	**31.4**	5.9
Cassava	*8.2*	***0.0***	***0.0***	***10.5***
Livestock	*12.0*	*d 0.1*	*d 0.6*	*1.6*
Sorghum/millet	*2.4*	*0.1*	*0.2*	*3.8*
Tea	*0.5*	*6.3*	*0.0*	*0.0*
Bananas	***12.7***	*0.0*	*0.0*	***4.0***
Palm oil	*0.0*	*1.6*	***27.3***	*3.3*
Tobacco	*1.3*	*17.6*	*1.1*	*n.a.*

Source: Government of the United Republic of Tanzania 2017, based on *MAFAP (2013). Review of food and agricultural policies in the United Republic of Tanzania.* MAFAP Country Report Series, FAO, Rome, Italy, p 62.

ANNEX 2. Examples of product design and implementation work plans

The tables that follow are extracted from IFAD-INSURED Technical Note 3 “Roadmap for the Development and Implementation of the Tanzania Agriculture Insurance Scheme” and present examples of work plans for product design and implementation for some of the products to be retailed under the TAIS.

8	**DESIGN AND IMPLEMENTATION OF "AREA YIELD INDEX INSURANCE" FOR FOOD CROPS**	
8.1	**Identify target counties and commodities (the initial crop suggested is maize)**	**MOA, TAIS**
8.2	**Carry out detailed surveys with farmer focus groups to examine the the loss histories in the various regions (this is critical for good product design)**	**APPOINTED SERVICE PROVIDER/ PRODUCT DESIGNERS**
8.3	**Crop Yield Data Study and Training in Crop-Cutting Experiments**	**APPOINTED SERVICE PROVIDER / PRODUCT DESIGNERS**
8.3.1	- Develop Yield Data Management Framework (define how data will be collected, managed, auditied, transferred to insurers and Government, and financed)	
8.3.2	- Dry test of Yield Data Management Framework for maize	
8.3.3	- Study on data (including crop cutting experiments) and insurance units for maize	
8.3.4	- Training in Crop Cutting Experiments (CCEs), and application of technology	
8.4	**Crop Area-Yield Index Insurance Product Design & Planning of Operational Systems and Procedures**	**APPOINTED PRODUCT DESIGNERS, TAIC, INSURERS AND REINSURERS**
8.4.1	- Product design and rating	
8.4.2	- Develop operating systems and procedures (underwriting claims, business processes, collection of premiums)	
8.4.3	- Insurance and reinsurance planning	
8.5	**Identify appropriate linkages with distribution channels (credit, input programs, etc.)**	**TAIS, TAIC, MOA, TADB, COMMERCIAL BANKS**
8.6	**Implementation Planning and Program Launch**	**TAIC, INSURERS, DISTRIBUTION CHANNELS**
8.6.1	- Launch date	
8.6.2	- Awareness creation / education	**TRAINING / DISSEMINATION AGENT**
8.6.3	- Marketing & Sales of Individual Farmer Crop AYII Insurance Cover Linked to Credit and/or to Input Subsidy Program	**INSURERS, DISTRIBUTION CHANNELS**
8.6.4	- Inception of cover date	**TAIC, INSURERS**
8.6.5	- Implement Area-based Yield estimation crop cutting experiments (CCEs)	**MOA or SERVICE PROVIDER**
8.6.6	- Implement Monitoring & Evaluation framework	**TAIS**
8.6.7	- Expand to other food field crops (e.g. sorghum, millet, rice, cassava, etc)	**TAIC, INSURERS**

9	**DESIGN AND IMPLEMENTATION OF WEATHER/VEGETATION INDEX INSURANCE FOR CROPS**	
9.1	**Identify target counties and commodities**	**MOA, TAIS**
9.2	**Carry out detailed surveys with focus groups discussions to examine the risks to be covered and the loss histories in the various regions (this is critical for good product design)**	**APPOINTED SERVICE PROVIDER / PRODUCT DESIGNERS**
9.3	**Collect Crop Yield Data for selected crops in target counties**	**APPOINTED SERVICE PROVIDER / PRODUCT DESIGNERS**
9.3.1	- On the basis of the risks identified, select the appropriate source of weather and vegetation indices from remote sensing and/or from ground measurement	
9.3.2	- Develop Data Management Framework (define how data will be collected, managed, auditied, transferred to insurers and Government and financed)	
9.4	**Product Design & Planning of Operational Systems and Procedures**	**APPOINTED PRODUCT DESIGNERS, TAIC, INSURERS AND REINSURERS**
9.4.1	- Products design and rating	
9.4.2	- Develop operating systems and procedures (underwriting claims, business processes, collection of premiums)	
9.4.3	- Insurance and reinsurance planning	
9.4.4	- Identify and appoint index "calculation agent"	**TAIS, TIRA**
9.5	**Identify appropriate linkages with distribution channels**	**TAIS, TAIC, MOA, TADB, COMMERCIAL BANKS**
9.6	**Implementation Planning and Program Launch**	**TAIC, DISTRIBUTION CHANNELS**
9.6.1	- Launch date	
9.6.2	- Awareness creation / education	**TRAINING / DISSEMINATION AGENT**
9.6.3	- Marketing & Sales of Individual Farmer Crop Index Insurance Cover	**INSURERS, DISTRIBUTION CHANNELS**
9.6.4	- Inception of cover date	**TAIC, INSURERS**
9.6.5	- Implement data collection and verification for settlement	**SERVICE PROVIDER**
9.6.6	- Implement Monitoring & Evaluation framework	**TAIS**

10	Design and Implementation of Index Based Livestock Insurance	
10.1	**Identify and register beneficiaries of Index Based Livestock Insurance scheme**	**MOLF, SERVICE PROVIDER**
10.1.1	- Define target beneficiaries	
10.1.2	- Registration process	
10.2	**Carry out detailed surveys with focus groups discussions to examine the risks to be covered and the loss histories in the various regions (this is critical for good product design)**	**APPOINTED RESEARCH INSTITUTION / PRODUCT DESIGNERS**
10.3	**Product Design & Planning of Operational Systems and Procedures for large Scale Livestock Insurance Program based on weather or vegetation indices**	**APPOINTED PRODUCT DESIGNERS, TAIC, INSURERS AND REINSURERS**
10.3.1	- Product design & rating	
10.3.2	- Develop operating systems and procedures (underwriting, claims, business processes, collection of premiums)	
10.3.3	- Insurance and reinsurance planning	
10.3.4	- Identify and appoint index "calculation agent"	
10.4	**Implementation Planning and Program Launch**	**TAIC, DISTRIBUTION CHANNELS**
10.4.1	- Launch date	
10.4.2	- Awareness creation / education for livestock index insurance	**TRAINING / DISSEMINATION AGENT**
10.4.3	- Marketing & Sales of voluntary individual livestock insurance	**INSURERS, DISTRIBUTION CHANNELS**
10.4.4	- Inception of cover date	**TAIC, INSURERS**
10.4.5	- Implement data collection and verification for settlement	**SERVICE PROVIDER**
10.4.6	- Implement Monitoring & Evaluation framework	**TAIS**

Technical Note 1

Guidance Note on the Development of an Institutional Framework for the Tanzania Agriculture Insurance Scheme

Table of Contents

1. Context and objectives

The objective of this Technical Note is to provide the Tanzania Insurance Regulatory Authority (TIRA) and the Government of the United Republic of Tanzania (GOT) with recommendations on the potential features of an "institutional framework" for the Tanzania Agriculture Insurance Scheme (TAIS) initiative. While the Technical Notes that follow describe in more detail the features of agricultural insurance and the potential way forward for implementing such products in the context of Tanzania, the specific purpose of this Technical Note is to provide information and considerations that can allow TIRA and GOT to fast track the work required to set up the institutional structure of the scheme.

The contents of this Technical Note are structured as follows:

- Section 2 provides a brief introduction on the distinctive features of agricultural insurance and on the support that can be provided by the public sector to national agricultural insurance programmes;
- Section 3 illustrates the current structure of the agricultural insurance market in Tanzania;
- Section 4 describes the organizational structures for government support to agricultural insurance schemes;
- Section 5 reviews the different organizational arrangements of the market for agricultural insurance;
- Section 6 provides recommendations for a potential initial structure of a TAIS institutional framework;
- Section 7 presents the immediate next steps that should be considered for setting up the institutional framework of TAIS.

Note: This Technical Note was delivered to TIRA in May 2023 and reflects the situation of the insurance market at that time. The developments that followed led to the launch of the Tanzania Agriculture Insurance Consortium (TAIC) on the 1st of July 2023.

2. Institutional and market considerations for National Agricultural Insurance Programmes[1]

Given the distinctive features of agricultural production activities, developing agricultural insurance programmes presents numerous challenges. In the first place, not all insurability conditions hold in agriculture[2] and there are well documented obstacles that hinder the development of private insurance markets (Skees and Hartell, 2006). The main issues that affect the implementation of agricultural insurance are that:

a) agricultural risks are generally "correlated" and, therefore, the diversification effect that insurers count upon does not hold;

b) there are relevant asymmetries in information (i.e., the different parties of the contract have different levels of information on the object of the coverage and the risk of damage or loss to that object) that lead to "adverse selection" and "moral hazard" effects;

c) the structural features of agricultural production (especially smallholder agriculture) generate high transaction costs for underwriting, monitoring and loss adjustment activities. All these elements have traditionally generated a market failure in agricultural insurance and, in fact, viable markets for this class of products do not develop unless there are specific conditions and/or dedicated support is provided.

Given the challenges in operating agricultural insurance, different models have been tested in various countries and, after decades of tests and experiences at the international level, both the "entirely public" and the "entirely private" approaches to implementing agricultural insurance have shown their limitations. Experience shows that models based on Public-Private Partnerships (PPP) can generate synergies that allow each component of the system to contribute to a more effective and efficient intervention (Figure 1). Most successful subsidized national agricultural insurance programmes that have scaled-up and which are financially stable are based on some form of PPP agreement.

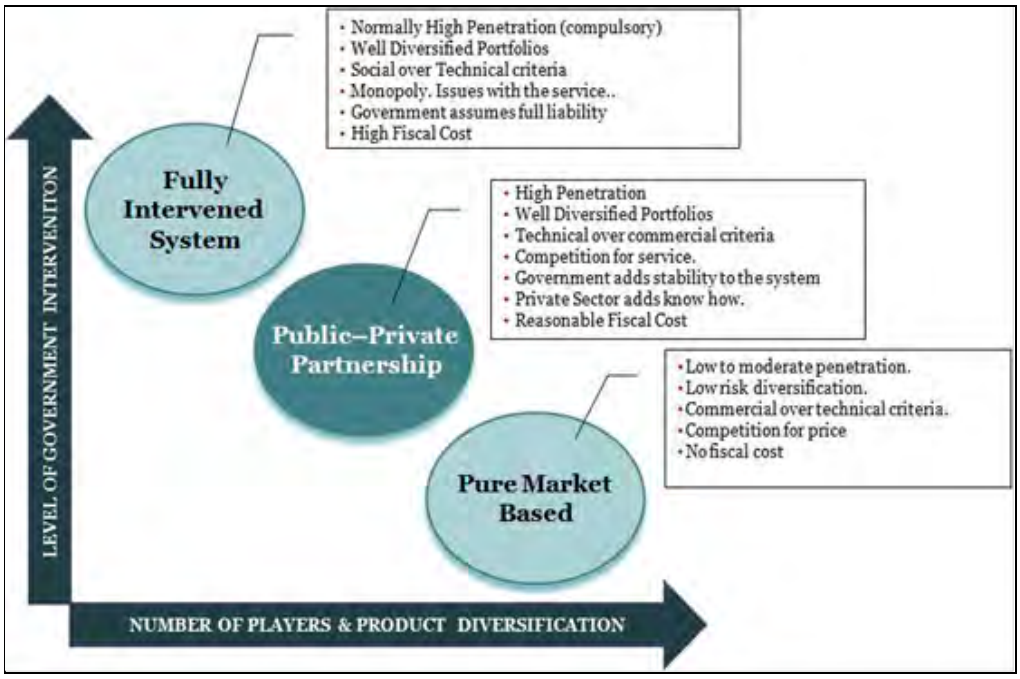
Under a PPP the **public sector** can play vital roles in: setting policy for agricultural insurance; establishing enabling legislation and regulation to support the PPP; strengthening data and information systems; providing farmer awareness and insurance education and training; strengthening fintech and digital payment systems; funding of smart premium subsidies to make insurance more accessible and affordable to farmers, especially smallholders; and, in some cases, in providing reinsurance support.

On the **private sector** side of a PPP, insurance companies should be responsible for product design and rating, for risk acceptance and underwriting and for loss adjusting and claims settlement.

The set of possible arrangements for an agricultural insurance PPP is broad and there is no predefined approach to be prescribed so each country should assess the solution which best suits its specific needs.

[1] Part of this section is based on contents published in Stoppa and Dick, 2018.
[2] Insurability conditions, as presented by Skees and Hartell, quoting Rejda, are the following:
- Determinable and measurable loss;
- Accidental and unintentional loss;
- Calculable expected frequency and magnitude of loss;
- Potential insureds can be accurately classified into roughly homogeneous pools;
- Large number of independent exposure units.

Figure 1: Roles of public and private sectors in different types of agricultural insurance programmes



Source: Iturrioz 2010

As shown in Table 1, implementation of micro-level (i.e., individual farmer covered with a policy) agricultural insurance programmes requires the involvement of several public and private sector stakeholders.

Table 1: Stakeholders typically involved in traditional indemnity or index insurance programmes

Category	**Potential Stakeholder**
Local Insurers	Private Commercial Insurance companies Insurance Association
Reinsurers	National and International Reinsurance companies
Intermediary Channel / Distributors	Agricultural banks, Rural banks, Cooperative banks, NGOs, MFIs, Input suppliers, Agribusiness Companies and Outgrower or Contract Farming schemes
Farmers	Farmer associations, Cooperatives
Government Departments	Meteorological Service Regulator of Insurance Ministry of Finance Ministry of Agriculture Planning Ministries Research and Specialist Institutes
Donors	Technical assistance and project funding

Source: Stoppa and Dick, 2018

3. Structure of the agricultural insurance market in Tanzania[3]

The existing structure of the agricultural insurance market in Tanzania at the time of drafting of this Technical Note is illustrated in Figure 2. Prior to the establishment of the Tanzania Agriculture Insurance Consortium (TAIC), in Tanzania there were a limited number of private insurance companies competing against each other to underwrite crop and livestock insurance. Most companies focus sales of their traditional indemnity-based multiple peril crop insurance (MPCI) or named-peril crop insurance (NPCI) on medium and large cereal producers and agribusiness with linkage to bank credit. The same applies to traditional livestock insurance, with a focus on provision of individual animal accidental death and named disease cover to commercial dairy producers.

Insurers arrange reinsurance through the local reinsurance company Tanzania National Reinsurance Corporation Ltd (Tan-Re) and international reinsurers. Tan-Re is 58.6% owned by state-controlled pension and social security funds.

As indicated by AXCO (2022), insurers are obliged to make compulsory cessions to TanRe and then to AfricaRe and ZEPRe as below:

TanRe compulsory cessions (as per: Tanzania National Reinsurance Corporation (Establishment) (Amendment) Order 2005):

- 10% of each policy written (life or non-life);
- 20% of each treaty cession.

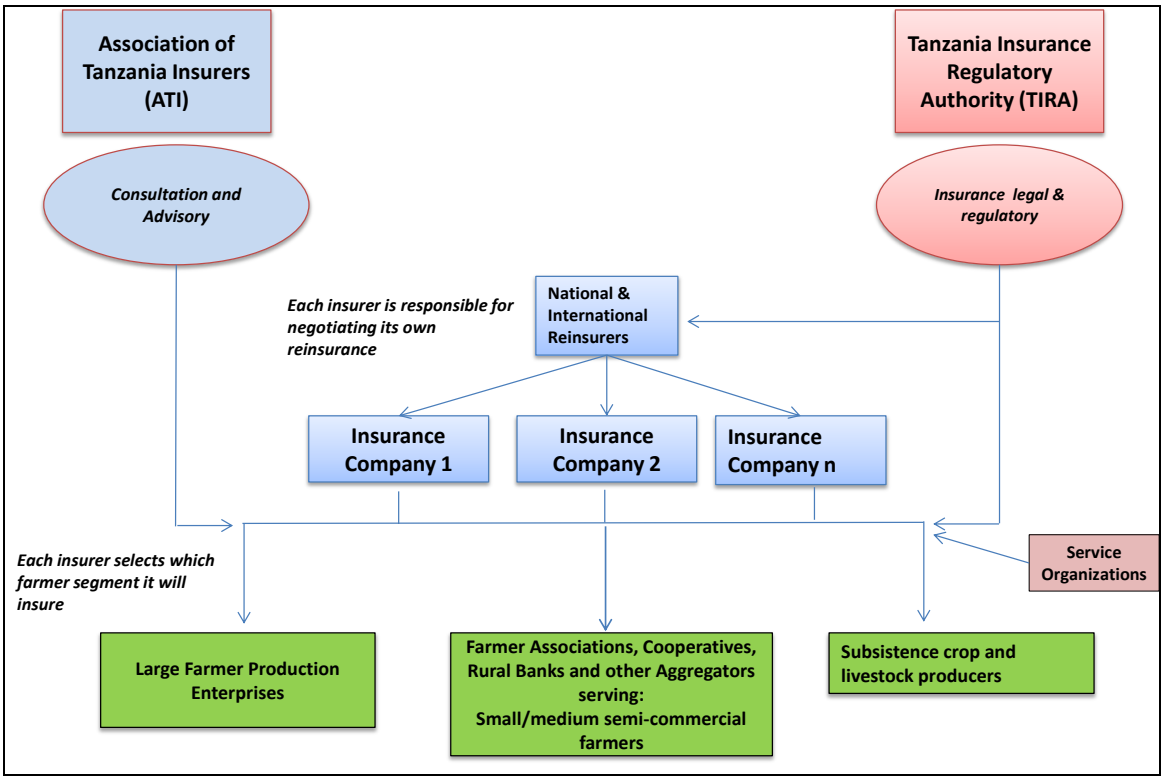
Local insurers are also obliged to make reinsurance cessions of 5% to Africa Re and 10% to ZEP-RE (PTA Reinsurance Company). Regional reinsurers used include Kenya Re, East Africa Re, Baobab Re, Continental Re and Ghana Re; other active international reinsurers include Swiss Re and GIC Re.

The role of the public sector under the current private agricultural insurance market structure is limited to the supervisory activity of the Tanzania Insurance Regulatory Authority (TIRA).

The industry is also supported by the private Association of Tanzania Insurers (ATI).

[3] As mentioned above, this Technical Note was delivered to TIRA in May 2023 and it reflects the situation of the insurance market at that time. The developments that followed led to the launch of the Tanzania Agriculture Insurance Consortium on the 1st of July 2023.

Figure 2: Agricultural insurance market structure in Tanzania before the establishment of the TAIC



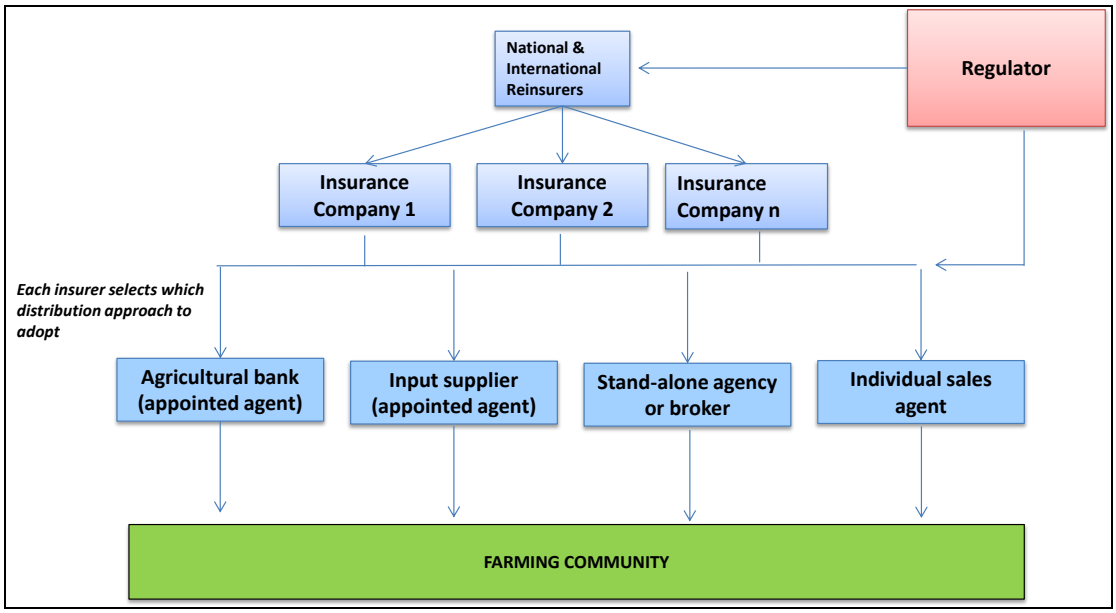
Source: Authors

4. Organizational structures for government support

Figures 3 and 4 provide potential examples of organizational structures of an agricultural insurance programme.

In the first case (Figure 3) the structure of the programme is entirely managed by the private sector and there is no involvement of public institutions, except for regulatory purposes. In this type of structure farmers may be provided with insurance policies by different types of agents (direct sales agents, brokers, input suppliers, banks) that offer products on behalf of insurance companies that have acquired protection from reinsurers. This type of structure can be suitable for countries that have very specific structural and risk profiles, or for programmes that mainly target covers against hail or fire, which are localized and not covariate perils.

Figure 3: Private market structure for agricultural insurance with no public support



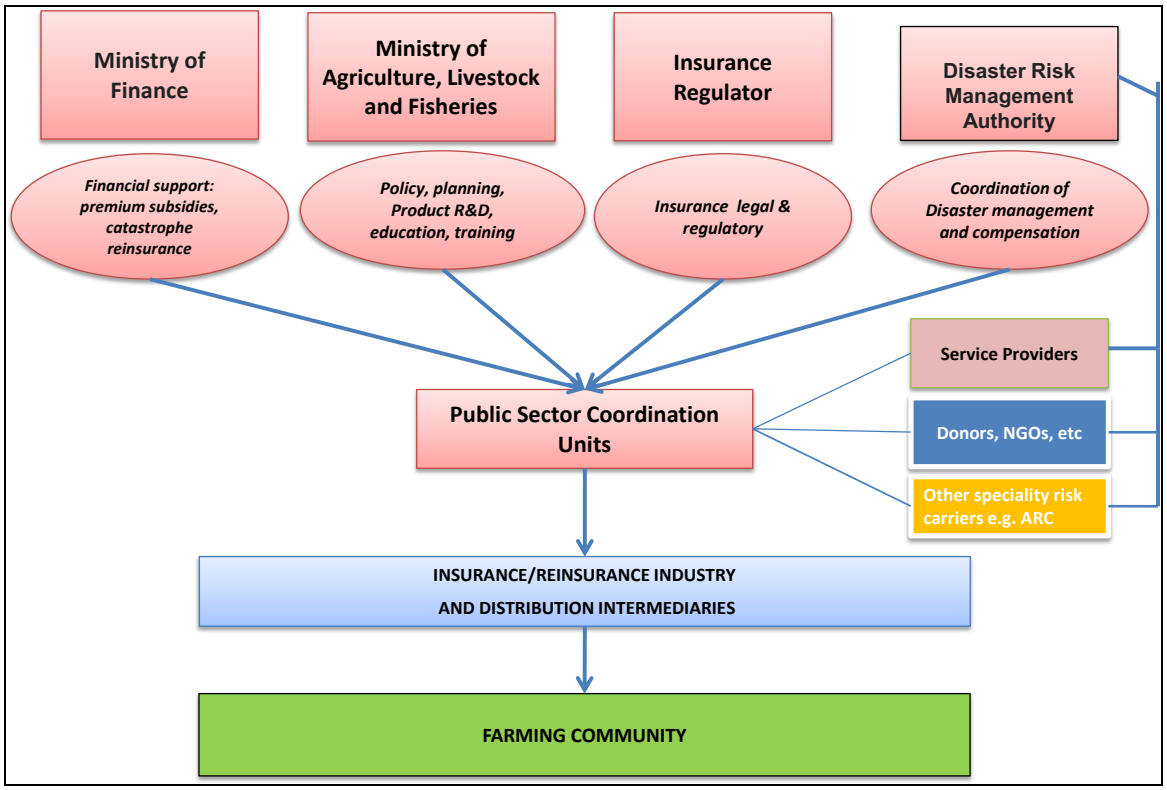
Source: CABFIN, 2017 (modified)

At the other extreme, Figure 4 presents a PPP structure in which the public sector is heavily involved in various capacities: from providing financial support and public reinsurance (Ministry of Finance); to planning, collecting and disseminating data, providing education and training (Ministry of Agriculture); to the development of dedicated legal frameworks and regulations (Insurance Regulator); to special assistance in case of disaster events (National Disaster Authority); all feeding into a public sector coordination unit system which can be structured at different levels of involvement and complexities. Such options (Figure 5) can go from a very light engagement, in which the government provides some technical support through a simple aggregation of staff of selected ministries, up to the development of a **governmental agency for agricultural risk management**.

In addition, further expansion of government participation in an agricultural insurance PPP can be pursued by taking an active role in financing reinsurance, as it happens in various countries (USA, Spain, Morocco, Mexico, Brazil, India etc.).[4]

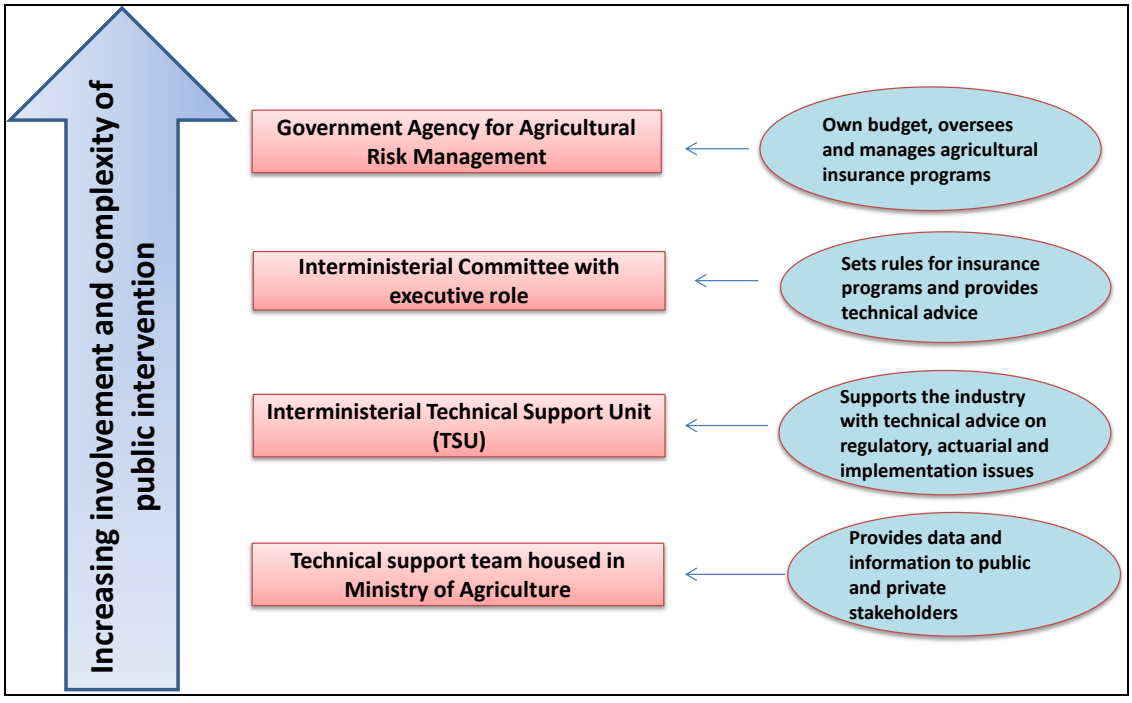
[4] See Mahul and Stutley (2010) for a detailed analysis of public support to reinsurance of agricultural risk management schemes.

Figure 4: Advanced PPP organizational structure for agricultural insurance programmes with coordination of public intervention



Source: CABFIN, 2017 (modified)

Figure 5: Potential structures for public support to an agricultural insurance programme



Source: Stoppa and Dick, 2018

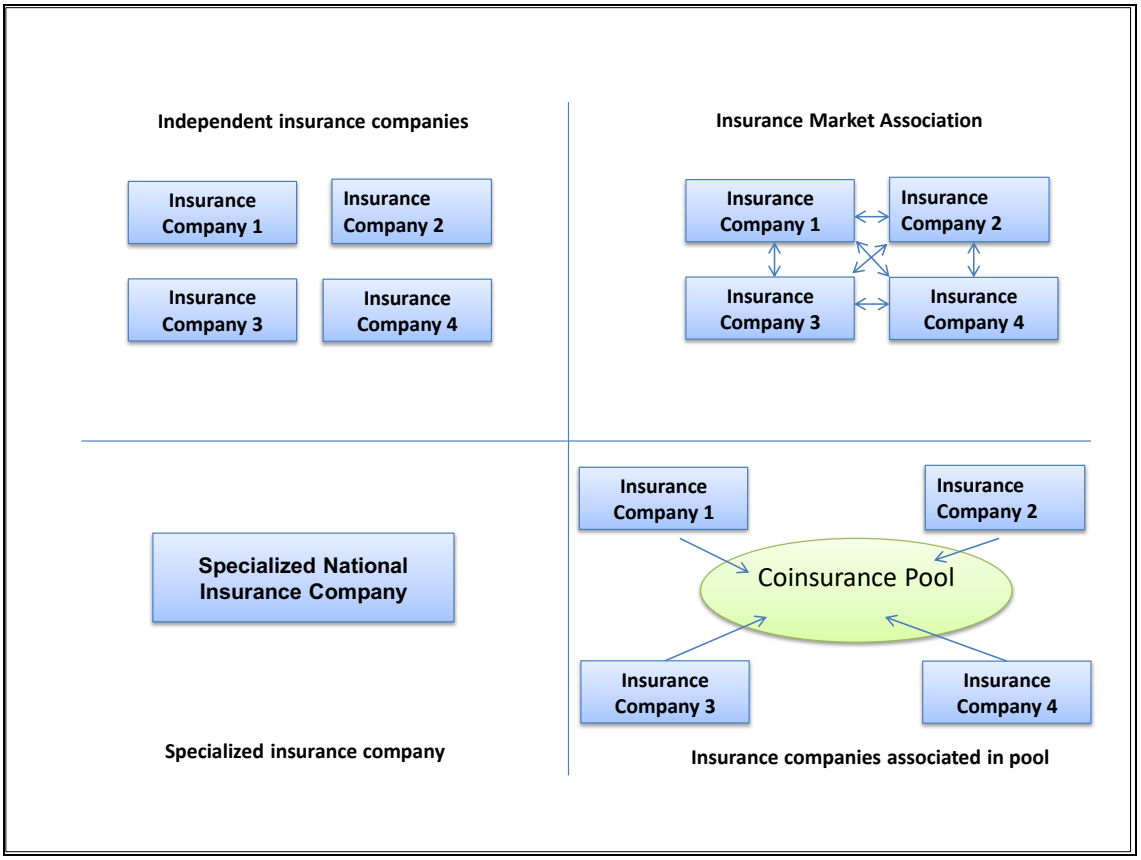
At the international level, the more complex institutional structures are observed in countries that have the longest tradition in crop insurance, like for example in the USA, in which crop insurance dates back to the 1930s, or in Spain that started working on covers for farmers at the beginning of the 1900s. Thanks to the experience and the lessons learned in these and other pioneering countries, it may be possible to directly implement advanced institutional structures; however, **a recommendation for Tanzania would be to start by adopting a lean coordination mechanism and, as the programme develops, potentially plan for more complex structures. In this respect, as suggested in Section 6, an initial approach for Tanzania could be to leverage on the initial institutional arrangements that were set up at the beginning of the explorations on agricultural insurance (namely the Steering Committee and the Technical Committee), completing the framework with the required additional components.**

5. Organizational structures for the insurance industry

5.1 Market coordination arrangements for agricultural insurance

The insurance industry has different ways in which it can interact with the government and the farming communities (Figure 6). Insurance companies can obviously work independently, but can also develop different types of coordination arrangements that go from a simple market association, to a co-insurance pool, up to a specialized national insurance company.

Figure 6: Possible aggregation structures of insurance companies



Source: Stoppa and Dick, 2018

Co-insurance agreements, pools, and consortia are arrangements in which several insurance companies work together to issue insurance policies for specific products: a group of insurers decide that an insurance policy for a new or difficult class of insurance can be issued as a joint ("co-insurance") policy, where each insurance company is named as underwriting a certain share of the overall risk. Such aggregations can appoint a Lead Insurer to be responsible for taking underwriting decisions. Co-insurance arrangements can be statutory (i.e., established by specific legislation) or non-statutory (i.e., not established by specific legislation) and Annex 1 provides a detailed discussion on the features of the different types of arrangements. Box 1 provides a summary of the benefits and limitations of coinsurance arrangements.

Key reference examples of agricultural insurance programs based on co-insurance arrangements are the cases of Spain, Turkey, Senegal, Ghana, Uganda, and Kenya, that each have their own specificities. In particular:

a) The programmes developed in Turkey and Senegal have involved the incorporation of a new "**specialist insurance company**", respectively TARSIM and CNAAS – *Compagnie Nationale d'Assurance Agricole du Sénégal* – which are entities established to have responsibility for all business related to agriculture in a specific country. These companies may be state owned, or with joint state and private sector shareholding.[5]

b) The programmes of Spain, Ghana, Uganda, and Kenya have not incorporated any new insurer but are operated through specific **coinsurance arrangements** each of which has its specific features:

   i. In **Spain**, Agroseguro was created in 1980 to act a "Managing Agent" to manage the business on behalf of the over 20 pool coinsurers (See Box 2 below);

   ii. In **Uganda**, under the Uganda Agricultural Insurance Scheme (UAIS), the 10 consortium Insurers have created the AgroConsortium Secretariat (a "mini-Managing Agent" or "Technical Support Unit") to manage the business on their behalf;

   iii. In **Ghana**, the 19 non-life insurers that are part of the Ghana Agricultural Insurance Pool (GAIP) have created a Technical Management Unit (TMU) to manage implementation of the Ghana Agricultural Insurance Programme: the TMU is simply a "Technical Support Unit" as it cannot bind risk without approval of the lead coinsurer;

   iv. In **Kenya**, the Kenya Agricultural Insurance Programme (KAIP) and the Kenya Livestock Insurance Programme (KLIP) are simple consortium coinsurance agreements whereby a **lead insurer** binds business on behalf of following coinsurers; collects premiums and shares these with the coinsurers according to their pre-agreed share of the risk; arranges reinsurance and manages claims adjusting while each coinsurer is responsible for settling their own share of the claims.

The implications of the different types of integration levels for insurance companies are quite important and all have advantages and disadvantages. Successful schemes have been structured around fully integrated models (e.g., Spain, Morocco, Turkey), but also with relatively independent market players

[5] Other relevant examples of "specialist insurance companies" – that, however, are not established by a pool of insurance companies – are the Agricultural Insurance Company of India (AIC); the Nigerian Agricultural Insurance Corporation (NAIC); the mutual insurance company MAMDA in Morocco.

(e.g., USA, Italy). Depending on the specific market and regulatory conditions, each country should develop the insurance industry approach that better suits the national situation.

It should be noted that integrated operational models for insurance companies may require specific regulatory exemptions since, due to their potential collusive behavior, regulations may not allow aggregation of market players.

Box 1: Benefits and limitations of coinsurance arrangements

Benefits of coinsurance pools:

- **They achieve economies of scale through operating as a single unit with shared (pooled) administration and operating functions**. These lead to costs savings from (i) reduced staffing requirements (fixed costs); (ii) shared costs of product research and development, and actuarial services including rating; and (iii) reduced costs of underwriting and claims control and loss adjustment.
- **There are cost advantages to companies when they purchase common account (pooled) reinsurance protection rather than trying to place their own reinsurance programme**. The advantages arise from (i) a stronger negotiating position with reinsurers; (ii) larger and more balanced portfolio and better spread of risk; (iii) reduced costs of reinsurance due to pooled risk exposure; and (iv) reduced transaction costs (reinsurance brokerage, etc.).
- **There is no competition on rates in a soft market, and pools can maintain technically set rates**. Most pools operate as the sole insurance provider or monopoly (as in Austria, Senegal, Spain, and Turkey, for example), and there is therefore no competition on pricing.
- **Pools can maintain underwriting and loss adjustment standards**. Under a pool monopoly arrangement, the pool manager can ensure that common and high standards are maintained in the underwriting of crop and livestock insurance and in the adjusting of claims. Where companies are competing against each other for standard crop insurance business, there is often a problem of varying loss adjustment standards between companies.
- **Within a PPP, governments can more easily coordinate support to a pool than to individual insurers**. Governments seeking to coordinate national agricultural insurance policy and planning and specific support functions (e.g., provision of premium subsidies, research and development, education and training) can work more easily with a pool than with individual insurers, each of which may have very different priorities for agricultural insurance.

Limitations of coinsurance pools:

- **When a pool acts as the sole agricultural insurer, lack of competition in the market may result**. This could (i) limit the range of products and services offered by the monopoly pool underwriter; (ii) restrict the range of perils insured; (iii) restrict the regions where agricultural insurance is offered and/or the type of farmer insured; and (iv) lead to a lack of competitiveness in premium rates charged by the pool.

Source: Mahul and Stutley 2010.

Box 2: Agroseguro Spain: Functions and Structure

Agroseguro is responsible for the ***management of agricultural insurance*** in the name and on behalf of insurance companies that are part of the co-insurance pool. It is not, therefore, an insurance company, but a management entity.

The purpose of the Company is to manage, on behalf of the shareholder insurers, everything related to combined agricultural insurance.

Following that objective, its main activities include issuance and collection of receipts to and from policyholders, as well as receiving claim statements from insured parties and carrying out adjustment procedures, assessment and payment of claims on behalf of the Co-insurers.

It also conducts statistical studies and actuarial research regarding the establishment of tariffs that apply to the different lines of insurance, as well as managing payment of premiums for the reinsurance cover provided by the Insurance Compensation Consortium, and the collection of subsidies payable by the National Agency for Agricultural Insurance (ENESA) and the different Autonomous Communities (regional governments).

The Company also manages the reinsurance not covered by the aforementioned institution, through Reinsurance Companies in the international market, who are paid and billed accordingly on behalf of those co-insurers who wish to join this reinsurance programme.

Agroseguro also has a Department of Consultancy and International Relationships whose main purpose is to provide technical assistance and expertise to other countries in the implementation and management of agricultural insurance.

Finally, the Company carries out additional work complementary to agricultural insurance, such as the assessment and verification of crops, crop damage due to causes other than those covered by the insurance, etc., commissioned by the Public Administration.

Agroseguro has one central delegation and eleven regional branches covering the entire country.

Source: https://agroseguro.es/agroseguro/quienes-somos/agroseguro-funciones-y-estructura/agroseguro-functions-and-structure

5.2 Potential options for agricultural insurance market coordination arrangements in Tanzania

Based on international experience and on the current Tanzanian context, suggestions for potential organization of the insurance companies interested in offering agricultural insurance products under the government promoted TAIS could focus on two main options:

1. Separate insurance companies competing for business under TAIS
2. Formation of a Coinsurance Agreement for agricultural insurance.

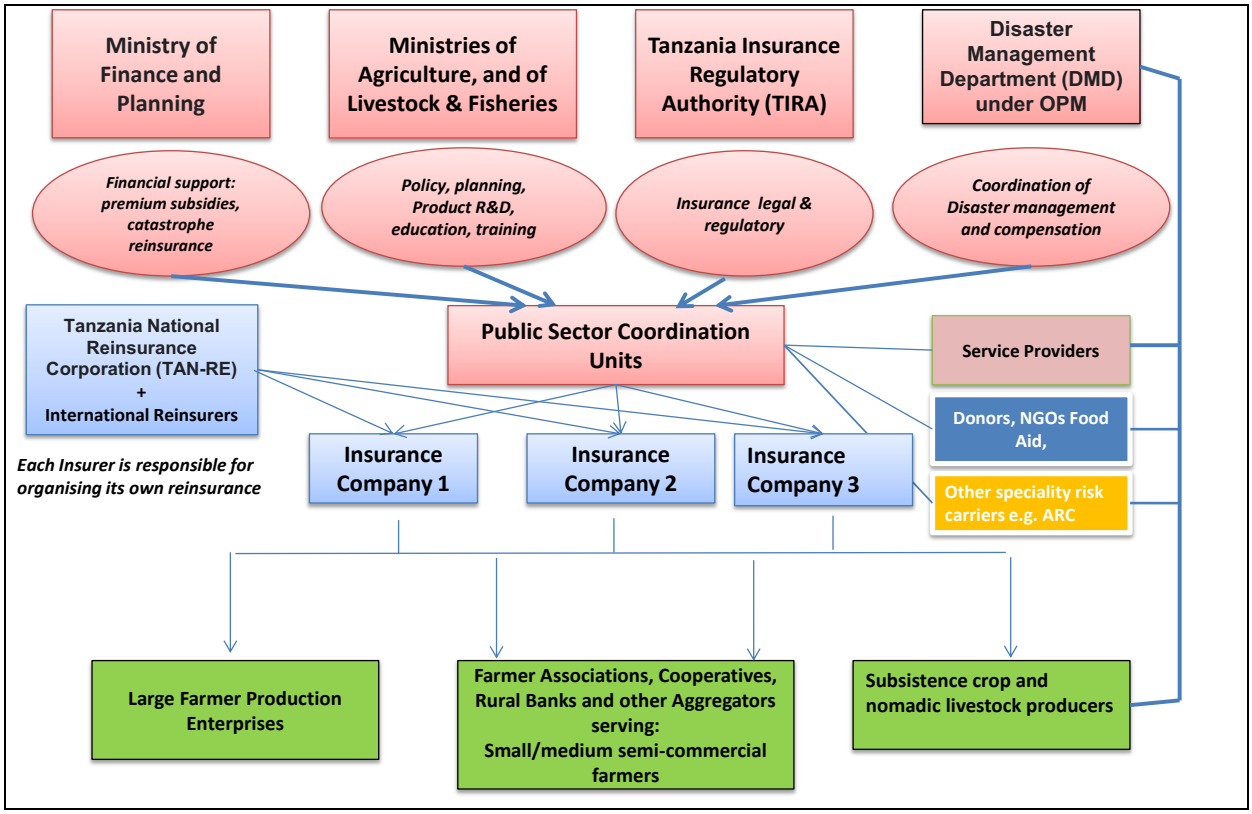
Option 1. Separate insurance companies competing for business under TAIS.

Under this option the existing private insurance company market structure would be maintained, and the private agricultural insurance companies that are approved to underwrite TAIS policies would actively compete for business with each other and maintain their own agricultural insurance departments and separate reinsurance negotiations. In order to coordinate the activities of these competing insurers, GOT may wish to consider forming a public sector coordination unit whose central roles would be to approve the agricultural insurance products offered by each insurer and to coordinate government financial support in the form of premium subsidies.

It is noted that this institutional model has similarities to the US Federal Crop Insurance Program (FCIP) where 17 Managing General Agencies, Mutual and Private Insurance Companies implement the world's largest subsidized crop and livestock insurance programme under the supervision of the Risk Management Agency (RMA) which acts as a coordinating body for the approval of standard crop insurance policies and rates, in the setting of premium subsidy levels, and in administering the Government's excess of loss reinsurance programme.

In Tanzania, the Association of Tanzanian Insurers could perform an important role in interacting with government and the public coordination unit and in agreeing on the priority crops and livestock, regions and farmer segments that would be targeted by insurance under the TAIS.

Figure 7. Illustrative Institutional Framework for a PPP for TAIS, maintaining the existing individual company open-market competition structure



Source: Authors

Option 2: Formation of a Coinsurance Agreement for agricultural insurance

Another option that the insurance market in Tanzania could consider under the TAIS would be to promote the formation of a national coinsurance agreement between the insurance companies interested in underwriting agricultural insurance. This model is illustrated in Figure 8.

Under this option, interested private sector insurers could decide to form one of the following:

- A **Simple Coinsurance Agreement** by the participating insurers, as is practised in Kenya by the 6/7 insurance companies, which, under the leadership of APA Insurance company, coinsure the government subsidised KAIP and KLIP.

- A **Consortium Agreement** such as the Ugandan UAIS where 10 insurance companies have formed a consortium to coinsure the UAIS: the coinsurers set up a small technical support unit called the Agro-Consortium Secretariat to underwrite the business on their collective behalf and they finance this unit out of the pooled premium. Another example of a consortium agreement is the Ghana Agricultural Insurance Pool (GAIP), where the non-life coinsurers fund a small technical support unit (TSU) to manage the business on their behalf.

- A **Managing Agent** to manage the business on behalf of the pool coinsurers, along the lines of Agroseguro in Spain (Box 2).

- A **New Agricultural Insurance Pool Company** which would be incorporated by the private insurance sector with or without participation by government. As mentioned in Section 3, examples of major national subsidized agricultural insurance pool programmes include the TARSIM program in Turkey, and CNAAS in Senegal.

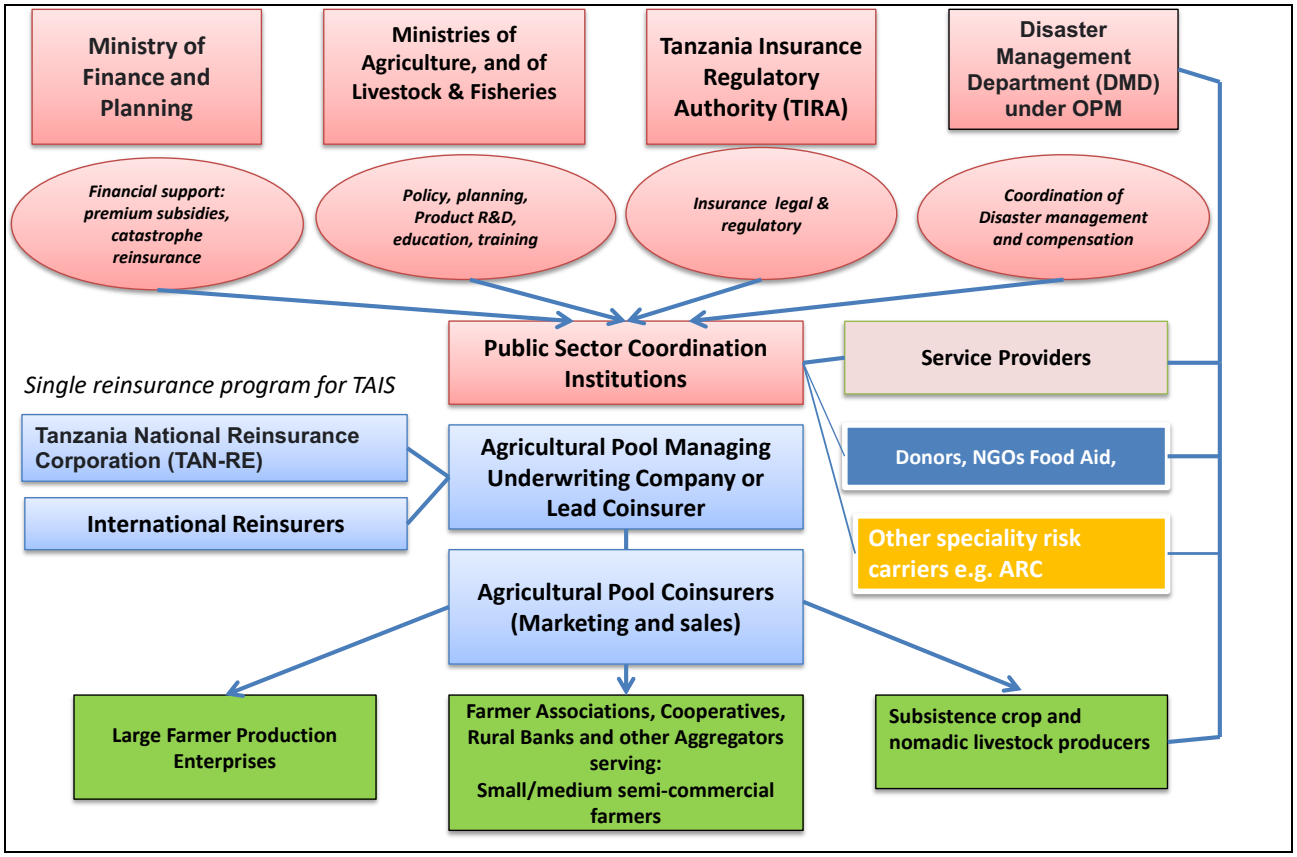
A major difference under the coinsurance or pool option is that, instead of each individual insurance company negotiating its own reinsurance programme with Tan-Re and international reinsurers, the coinsurers would purchase common account reinsurance protection on their aggregate portfolio (Figure 8). There are potential cost savings through purchasing a common account reinsurance protection because of the diversification of risk (Box 1).

The major potential benefits of the single coinsurance agreement or pool entity would include the much greater ease of coordinating and agreeing government policy for agricultural insurance with the pool and then in channelling government financial and other support through a single entity. Under the coinsurance or pool option there is less need for a dedicated government agricultural risk management agency to be formed because the various public sector entities can coordinate directly with the coinsurance leader or with the coinsurance pool managing underwriter team (Figure 8).

In the Tanzanian insurance market, for the short-term, TAIS stakeholders could consider a simple coinsurance agreement with a lead coinsurer like KLIP/KAIP in Kenya, or possibly the consortium approach adopted by UAIS coinsurers in Uganda, with a separate technical support unit to manage implementation on behalf of the consortium members. Once the coinsurers have gained experience of working together to underwrite TAIS under a coinsurance agreement, they could then consider the need to incorporate and capitalize a new specialist agricultural pool company.

Note: In June 2023 the Commissioner of Insurance convened a meeting of the Association of Tanzania Insurers (ATI) and leading members of the non-life or general insurance industry. The meeting participants unanimously voted to follow a consortium approach similar to the Uganda UAIS to underwrite the TAIS. The Tanzania Agricultural Insurance Consortium (TAIC) was formally launched by the Minister of Agriculture, Hon. Hussein Bashe, on 1st July 2023.

Figure 8. Illustrative Institutional Framework for a PPP for TAIS with the formation of a Coinsurance agreement



Source: Authors

6. An initial institutional framework for the Tanzania Agriculture Insurance Scheme

Given GOT's intention to promote the development of the TAIS, the key recommendation is to rapidly set up a preliminary institutional framework on the public sector side that can start to coordinate and operationalize the scheme. As mentioned in Section 4, **the GOT can leverage on the institutional committees (namely the Steering Committee and the Technical Committee) that were set up to guide the development of a national agricultural insurance scheme for Tanzania, completing the framework with the required additional components** (Annexes 2 and 3 present the TORs for the Steering Committee and the Technical Committee that are currently operating)**.**

As graphically illustrated in Figure 9, the key components around which such a framework could be centered are:

- A **High-level Steering Committee (SC)**, composed of lead government policy makers, that would be responsible for identifying the policy objectives, defining the amount of resources to be allocated to the programme, and providing general guidance on policy level issues.

- An **Interministerial Technical Support Unit (TSU)**, composed by the relevant representatives of the public sector, that would represent the seat for coordinating the different instances of the public stakeholders. The TSU would focus on implementing the orientations of the Steering

Committee; on overseeing the operational activities of the programme; and on interacting with the private sector components of the programme within the Technical Committee.

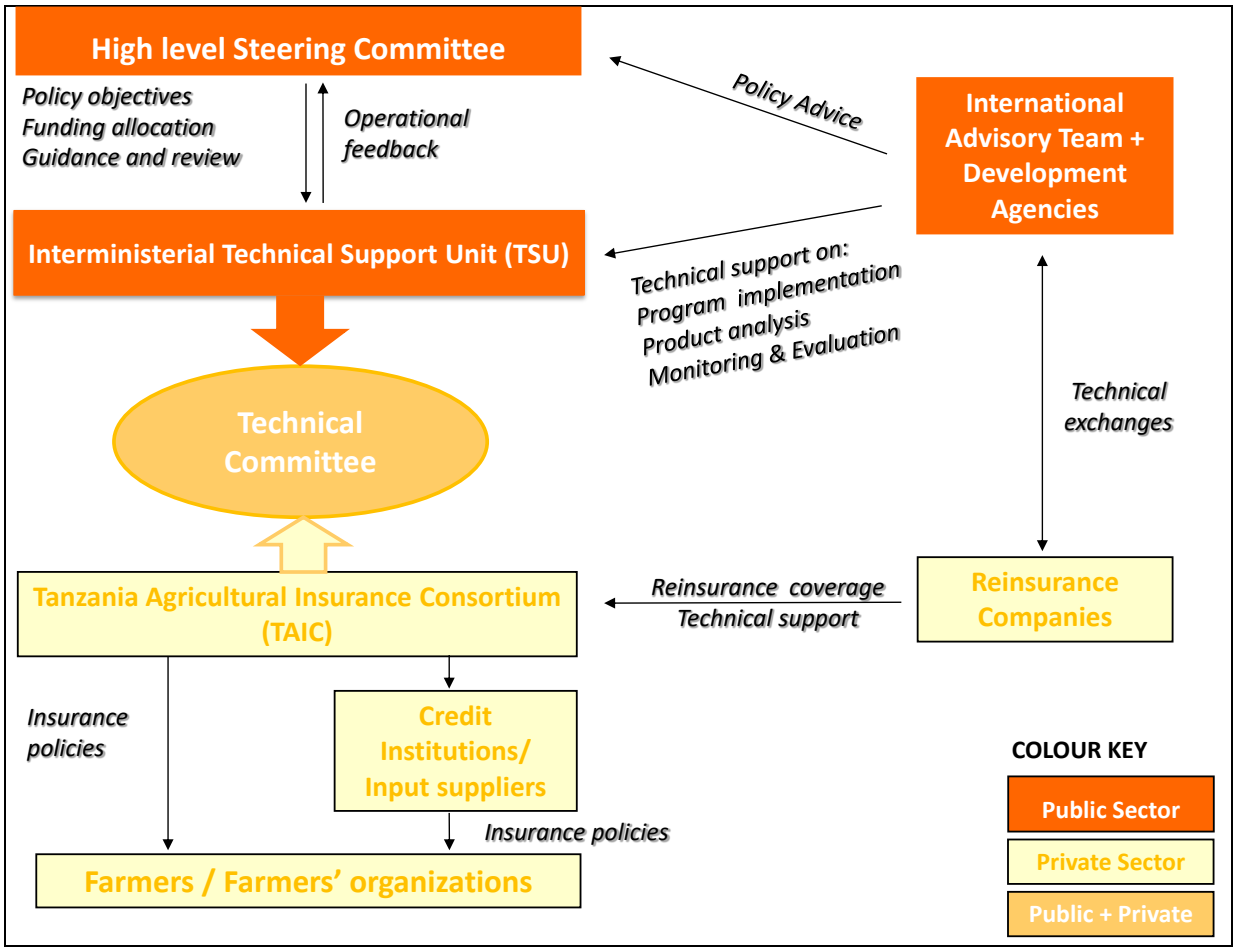
Over time, the SC and TSU could merge and evolve into a public sector funded Agricultural Risk Management Agency (ARMA) which would be charged with coordinating and administering and implementing government policy and support programmes for agricultural insurance. This ARMA could initially have a small core staff and restricted operating budget and could expand its operations in response to the scale up of the PPP agricultural insurance programme and demand led requirements.

- An **International Advisory Team** (IAT), composed by relevant experts in the area of agricultural risk management, that could provide the various components of the system with the policy advice and technical support that may be required. The advisory team could be jointly appointed and co-funded by GOT and the international development community, that could be also represented in the IAT and interact with the other components of the programme.

- A **Technical Committee,** that would be composed of select representatives of the interministerial TSU and of the insurance and reinsurance industry, **that would be the seat in which** interaction and coordination between the **public and the private sector** stakeholders takes place and that would be responsible for the exchange of information and the negotiations between the public and private components of the scheme.

On the private sector side, the pivotal role should be assigned to insurance companies, that are responsible for the supply of agricultural insurance policies, **and reinsurance companies** that can provide both reinsurance capacity and technical support for product design and implementation and could also interact with the advisory team on technical issues.

Figure 9: Potential initial institutional framework for the Tanzania Agriculture Insurance Scheme[6]



Source: Authors

[6] The figure has been updated to reflect the establishment of the Tanzania Agriculture Insurance Consortium in July 2023.

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ANNEX 1: Features of Coinsurance Pools

*The text below is integrally taken from the publication "*Kenya. Toward a National Crop and Livestock Insurance Program. Background Report"*. World Bank Group October 2015.*

Non-statutory Coinsurance Pools

Insurance pools can be statutory (i.e., established by specific legislation) or non-statutory (i.e., not established by specific legislation).

Different structures are commonly used to establish non-statutory insurance pools:

1. A coinsurance pool may be established by the participating insurers as an insurer in its own right, so that it is the pool itself that issues the insurance contracts and assumes the risk on behalf of the insurers. In this case, either the pool would sell its own insurance contracts, or the insurers would sell insurance contracts as intermediaries (i.e., agents) on the pool company's behalf, the risk being underwritten by the pool company.
2. The insurance contracts may be written by the insurer pool members, on an individual basis, but with the risk ceded to the pool. In this case, the pool may be either (i) a special pool company established by the insurers; or (ii) an arrangement between the insurers whose terms are set out in a pool agreement.
3. The insurance contracts may be written by a lead insurer on behalf of the other insurers that are members of the pool. Again, under this scenario, the pool may be a special company established by the insurers or an arrangement between the insurers set out in a pool agreement.

If a coinsurance pool is established as an insurer, the pool company underwrites the risks directly in its own right. A pool company that underwrites risks must, of course, be licensed to write insurance business and must be fully capitalized as an insurer.

Other coinsurance pools, whether or not established solely by contract or as a special (non-insurer) company, usually share the following features:

1. Each insurer accepts a pre-agreed share in all the risks that are covered by the pool agreement.
2. All premiums are paid into the pool, less an amount to cover expenses.
3. The pool manager or administrator assesses and settles claims.
4. If there is an underwriting gain, the surplus (beyond any reserve retained in the pool) is paid to each insurer in accordance with its agreed share.
5. If there is an underwriting loss, the insurers contribute to the loss in accordance with their agreed share.

If a pool is established solely through a contractual arrangement, the "pool" is not a legal person and does not have the power to contract. The pool could not, therefore, write insurance contracts.

If the insurers enter into their own individual insurance contracts, the insurance business is conducted under their individual licenses. The capital of the participating insurers supports the risk. The position may be rather more complicated if the insurance contracts are underwritten by a lead insurer on behalf of the other insurers.

It is important to appreciate that where the insurers write their own insurance contracts and cede the risk to the pool, each participating insurer typically accepts a pre-agreed share of all the risks ceded to the pool, not just the risks that the insurer has written.

Management of a coinsurance pool, where the pool is incorporated as a (noninsurance) company, involves the pool company acting as the pool manager or administrator. Where a special pool company is not incorporated, the pool may be managed by a lead insurer; by a technical management unit contracted or employed by, or on behalf of, the participating insurers; or by a third party such as a broker, another nonparticipating insurer, or a reinsurer. The participating insurers typically share the management costs in accordance with their proportionate risk share.

Statutory Coinsurance Pools

Statutory insurance pools are often, but not necessarily, corporate bodies. Usually, statutory coinsurance pools are part of a national or regional programme and are established as part of a public-private partnership (PPP). Relevant legislation typically provides for the governance of the pool and sets out the pool's functions. The legislation may also cover other matters, such as the provision of some form of subsidy. Because they are established by legislation, statutory pools take many forms and may be structured very differently to a typical voluntary pool.

The legislation may establish a coinsurance pool, but not as a corporate body. For example, the pool may be established as a contractual arrangement between participating insurers. In this case, although the legislation would set out the functions of the pool, those functions would not usually include acting as an insurer, since the pool is not a legal person. Of course, the legislation may establish a corporate body to act as manager of the pool, but not to write insurance contracts.

The legislation establishing the pool would usually provide the pool with exclusive rights in relation to the business underwritten by the pool. This is necessary to prevent non-pool insurers undermining the pool by offering similar insurance products at a lower, non-sustainable, price.

Statutory coinsurance pools sometimes operate as hybrids, with some limited reinsurance functions.

ANNEX 2: TOR for the Current NAIS Steering Committee[7]

THE NATIONAL AGRICULTURE INSURANCE SCHEME STEERING COMMITTEE
The Steering Committee Terms of Reference

The NAIS Steering Committee in accomplishing its task will be guided by the following terms of reference:

i. Provide strategic and policy guidance to the operations of the NAIS;

ii. Consider and approve policy documents, operational plans, and budgets for the NAIS;

iii. Consider and approve government subsidization of NAIS;

iv. Consider and approve the selected national strategic crops, livestock, and other prioritization issues of NAIS;

v. Mobilize resources for NAIS; and

vi. Monitor and assess the overall performance of the NAIS.

Membership

The Steering Committee shall include:

i. Permanent Secretary, Policy, Parliament Affairs and Co-ordination (PMO);

ii. Permanent Secretary, Ministry of Finance and Planning;

iii. Permanent Secretary, Ministry of Agriculture;

iv. Permanent Secretary, Ministry of Livestock and Fisheries (Fisheries);

v. Permanent Secretary, Ministry of Livestock and Fisheries (Livestock);

vi. Permanent Secretary, Ministry of Natural Resources and Tourism;

vii. Permanent Secretary, President's Office Regional Administration and Local Government;

viii. Commissioner of Insurance, Tanzania Insurance Regulatory Authority.

Governance
The Steering Committee meetings shall be chaired by the PS Treasury and assisted by a co-chair appointed amongst SC members and the Commissioner of insurance shall be the Secretary

Meeting frequency
SC meetings will be held when and as deemed appropriate

[7] The acronym NAIS is now replaced by TAIS.

ANNEX 3: Extract from TOR for the Current NAIS Technical Committee[8]

Composition of the Technical Committee

No	Name	Designation	Institution
1.	Jamal Mwasha	Ag. Manager Legal Counsel	TIRA
2.	Joy Kemibaro	Director	The Hub Limited
3.	Prudence Lugendo	Policy Specialist	SAGCOT
4.	Aneth Kayombo	Budget & Policy Analyst	ANSAF
5.	Anselmi Mushy	Director of Research, Consultancy, and International Relations	ACISP
6.	Dr. Elibariki Msuya	Senior Lecturer	SUA
7.	Clifford W Cosmas	Assistant Lecturer	IFM
8.	Prosper Bitamare	Agriculture Insurance Coordinator	NIC
9.	Method Kahango	Agriculture Officer	MoA
10.	Edson Kilyenyi	Senior Livestock Officer	MoLFL
11.	Hussein Nassoro	Product Dev. Manager	Jubilee
12.	Jacqueline Motcho	Country Officer	IFAD
13.	Abubakari Lungo	HPWS	TMA
14.	Sesanyi M.	Agronomist	Mgen
15.			CRDB

The NAIS Technical Committee Terms of Reference

The NAIS Technical Working Group in accomplishing its task will be guided by the following terms of reference:

1.1 Advise the Steering Committee (SC) on the NAIS approach (modus operandi) and its implementation

1.2 Facilitate the SC to stay abreast of NAIS Regulations and Scheme developments

1.3 Determine the national priority crops & livestock and advice the SC accordingly

1.4 Determine the level of government involvement in the subsidization of the scheme and advice the SC

1.5 Align international and national standards, national vision, policies, strategies, and statutes with NAIS Scheme and report to SC

1.6 Review developed a roadmap for NAIS development to its completion

1.7 Review the NAIS draft report

1.8 Oversee and approve the development of procedures and insurance materials.

[8] The acronym NAIS is now replaced by TAIS.

1.9 Develop ToRs for NAIS activities;

1.10 Develop Monitoring and Evaluation framework of NAIS

1.11 Creating NAIS awareness to relevant MDAs, the insurance industry, and key agriculture insurance stakeholders.

1.12 Strategies and advise funding mechanism of all activities to be done in the development of NAIS to its completion.

Technical Note 2

Technical Review of the TIRA 2019 Draft Agriculture Insurance Regulations

Table of Contents

1. Context and objectives

The objective of Technical Note 2 is to provide the Tanzania Insurance Regulatory Authority (TIRA) and the Government of the United Republic of Tanzania (GOT) with recommendations for updating the Draft Agriculture Insurance Regulations 2019 to reflect recent developments in agricultural insurance provision, especially with regard to index insurance applications to agriculture, and also to reflect the new regulatory requirements of the Tanzania Agricultural Insurance Scheme (TAIS) which will be underwritten by the Tanzania Agricultural Insurance Consortium (referred to as 'TAIC' or the 'Agro-Consortium' for the purpose of this note) of Tanzania non-life insurers, which has been launched in July 2023.

It is stressed that the IFAD-INSURED Consultants have provided this review and recommendations based on their technical expertise in the field of agricultural insurance but, as they are not legal experts, their suggestions, and recommendations for updating the Regulations do not constitute legal opinion, in any way. Verification of legal compliance of any amendments to the Regulations discussed in this note should be provided by TIRA's legal and wordings department or by other legal and regulatory experts.

This review document closely follows the format of the 2019 Draft Agriculture Insurance regulations and provides suggestions and comments under each section of the Regulations.

Structure of this note:

- Section 2 'Overarching Considerations about the Scope of the Updated Agriculture Insurance Regulations' and Section 3 'Regulating Index-based Insurance Products for the Agricultural Sector in Tanzania' provide an overview of key considerations relevant to be aware of and make decisions on prior to any revision of the agriculture insurance regulations. These sections also help to explain the background as to why some of the technical changes have been suggested within the detailed technical review of the draft regulations.
- Section 4 'Comments and Suggestions on the text of the 2019 Draft Agriculture Insurance Regulations' is a detailed technical review of the actual draft agricultural insurance regulatory wording.
- Useful references and annexes are provided for further consultation, which are referred to in the context in this note. Annex 2 comprises the draft Kenya 2015 index insurance regulations.

2. Overarching Considerations About the Scope of the Updated Agriculture Insurance Regulations

There are a series of overarching considerations that it is recommended for TIRA to address in preparing the revised Agriculture Insurance Regulations 2023, including the following:

1) **Whether or not the Regulations are intended to cover all subsidized and unsubsidized agriculture insurance business underwritten in Mainland Tanzania and in Zanzibar.**
   The authors of this review have assumed that the revised 2023 Tanzania Agriculture Insurance Regulations, which TIRA is in the process of drawing-up, will be intended to cover <u>all</u> agricultural insurance business that is underwritten by non-life insurers in mainland Tanzania and in Zanzibar, including both:
   (i) TAIS agriculture insurance risks that are underwritten by the Tanzania Agriculture Insurance Consortium ("the Agro-Consortium") and which qualify for government premium subsidies, and
   (ii) ii. All other non-subsidized agriculture insurance that may be written outside the Consortium by individual insurance companies and/or placed into the Consortium.

If TIRA decide that the Regulations are intended to cover all subsidized and unsubsidized agriculture insurance business underwritten in Mainland Tanzania and in Zanzibar, the revised Regulations will need to be very carefully drafted to cover these two scenarios and classes of business. TIRA may therefore wish to divide the revised 2023 Agriculture Insurance Regulations into two sections: Section A general regulations covering all agriculture insurance business underwritten by non-life insurers in Tanzania, and Section B specific to subsidized TAIS business which is underwritten by the Agro-Consortium underwriters. In addition, as the operational details of TAIS will need frequent adjustments and updates, some of the more specific aspects of TAIS (e.g., subsidy levels, types of crops and livestock covered, etc.) could be regulated in an annual or multi-year "Agricultural Insurance Plan", as happens in various well established agricultural insurance programs.

2) **Public-Private Partnership (PPP) models.**
It is a fact that PPPs in agriculture insurance only exist where government agrees to fund premium subsidies: without subsides there is no need for a PPP and there are little incentives for insurers to pool their risks with other insurers, save on very large risks. It is therefore assumed that the revised 2023 Agriculture Insurance Regulations will explicitly address the premium subsidy regime that will apply to TAIS, including:
    a. Source of premium subsidies, budget, and duration.
    b. Entity responsible for administering and auditing premium subsidies.
    c. Rules defining eligibility of insurers to access premium subsidies.
    d. Target farmer segments: small, medium, large and eligibility for premium subsidies and levels of premium subsidy.

3) **Conditions for insurers to access premium subsidy support.**
It is assumed under the TIRA 2023 revised regulations that a condition of government premium subsidy support to TAIS will be the requirement that all Agro-Consortium insurers must place all risks (farmer policies) into the TAIS that qualify for premium subsidies and where an approved (by the Commissioner for Insurance) agriculture insurance product exists in the market.

4) **Regulating non-TAIS agricultural insurance products.**
TIRA will also need to set the regulations for agriculture insurance risks which do not qualify for premium subsidies and where Agro-Consortium insurers may presumably elect to insure these risks under their own company non-life miscellaneous portfolio, rather than pool their risk with other Agro-Consortium members under the TAIS.

5) **Non TAIC/Agro-Consortium insurers.**
Finally, it is assumed that any insurer which elects NOT to join the Consortium to underwrite TAIS will be able to continue to underwrite their own book of non-subsidised agricultural insurance, and that this point will be addressed in the revised Regulations for Agriculture Insurance 2023.

6) **Alignment with agricultural and disaster risk policies and annual operations.**
TIRA may also need to consider how best to align with broader issues relating to government policy for agriculture and also the annual operations of TAIS, including the prioritization of types of crops and livestock and other priority classes of agriculture insurance and the annual budget for premium subsidies. These broader policy issues do not necessarily fit into the Regulations for Agriculture Insurance and may best be dealt with through an **Annual or multi-year TAIS business plan and budget and which would include**:
    - **Government policy for updates and revisions to agriculture insurance lines to enter the TAIS annual business plan.**
    - **Government budget approval for TAIS Premium subsidies and subsidies for other TAIS Operations.**

- **Alignment of subsidised TAIS agricultural insurance and other government funded programs including:** (1) natural disaster compensation programs, (2) subsidised crop production (seeds, fertilisers), and 3) agricultural credit programs.
- **Compulsion of insurance for loanee farmers** to be eligible for premium subsidies or **leave decisions** to the Financial Institutions (Banks, MFIs etc).

7) Provisions for timely approval of agricultural insurance products and potential set up of a "sandbox" approach for innovative products.

The timely approval of agriculture insurance products presented by members of the TAIS consortium for the different agriculture classes – crops, livestock, aquaculture and forestry – will be critical, in particular for innovative and inclusive agriculture insurance solutions. This will significantly help the roll-out of demand driven agriculture insurance solutions underwritten with confidence by insurers, reinsured by in-country and international reinsurance companies, and trusted by farmers and other stakeholders. TIRA could also consider the possibility of setting up a "sandbox" approach in order to stimulate the development of innovation in agricultural insurance in a safe and controlled environment (see, for example, NAMFISA, 2021, p. 11-12).

In summary the above scenarios will require very careful review and agreement by TIRA and the Agro-Consortium and the non-life insurance industry and this, in turn, will require very careful redrafting and updating of the 2019 Draft Agriculture Insurance Regulations.

3. Regulating Index-based Insurance Products for the Agricultural Sector in Tanzania

One of the focuses of the Agriculture Insurance Regulations should be Index Insurance products for agriculture. In this respect, the 2019 Draft Agriculture Insurance Regulations will require extensive updating and IFAD-INSURED have provided technical recommendations in relevant Parts of the Regulations within this note.

A key recommendation of the IFAD-INSURED team is for TIRA to carefully review the Kenya Draft Regulations for Index Insurance attached in Annex 2, which provides excellent references for introducing regulations on index insurance for agriculture.*

Another key reference for this discussion is a publication developed by the Access to Insurance Initiative (A2ii), that provides specific indications on regulatory issues for index insurance (see A2ii, 2021 in the References).

Index Insurance is a recent innovation in the domain of agricultural insurance. In index insurance products, payments are based on an independent measure highly correlated with farm-level yield or revenue outcomes. Unlike 'traditional' indemnity crop insurance that attempts to measure individual farm yields or revenues, index insurance makes use of variables exogenous to the individual policyholder—such as area-level yield or some objective weather event or measure such as temperature or rainfall—but that has a strong correlation to farm-level losses (World Bank, 2005).

Given its specific nature, index insurance contracts require regulation of some aspects that do not apply to indemnity insurance covers. Issues such as those listed below are all items that need to be clearly addressed in the regulations on index insurance:

* Kenya has not yet issued the regulations for index insurance for agriculture since the current updated objective is to issue a more comprehensive "National Agriculture Insurance Policy" that has been developed by the Insurance Regulatory Authority in partnership with the Ministry of Agriculture (Personal communication, Insurance Regulatory Authority of Kenya, June 2023).

- the existence of an insurable interest;
- basis risk;
- the identification of the risk for which the policy is designed to provide insurance coverage;
- the independence of data generation and fallback options;
- the methodologies for calculating the indices;
- the entities responsible for the calculation of the indices.

It may be useful to add that index insurance is a very flexible tool that can be offered at different levels of aggregation ranging from **micro-level programs** targeted at and purchased by individuals (farmers, pastoralists, microentrepreneurs, etc), through to **meso-level applications** to protect the financial risk exposure of services institutions (banks, MFIs, input dealers, contract farming operations etc), and finally as a **macro-level, sovereign risk insurance** tool for governments (and relief agencies) to purchase as part of their national disaster risk financing (DRF) programs (Box 1). IFAD and WFP were among the earliest international agencies to highlight the different levels of use of index insurance as a risk management and risk transfer tool. In IFAD – WFP (2010) they drew a distinction between:

- **Index insurance for disaster relief** to protect people – their lives, health, and assets – against catastrophic losses, and that could help save lives and livelihoods through faster, more cost-effective responses to disasters.
- **Index insurance for development to** help farmers protect their investments, open doors to ways to increase incomes (e.g., contract farming, access to credit), and be part of a wider strategy to help farmers escape poverty.

As an extension to this theme, Schäfer et al., 2016 distinguish between:

- **Micro-level Direct insurance approaches** are those in which the insured benefits directly from transferring risk to a risk-taking entity (such as an insurer). In the event the insurance agreement is triggered the insured beneficiary receives the insurance payout (direct transfer).
- **Meso and Macro-level Indirect insurance approaches** are those where the final intended target group may or may not benefit indirectly from payments intermediated by an insured government or from being a member of an institution that has insurance.[†]

Box 1. Applications of Index insurance at Micro, Meso and Macro level

Micro level (direct): Policyholders are individuals, e.g. farmers, market vendors or fishers, who hold policies and receive payouts directly. These policies are often sold at the local level and retailed through a variety of channels, including microfinance institutions, farmers' cooperatives, banks, NGOs and local insurance companies. Premiums are either paid in full by clients or subsidized.

Meso level (indirect): Policyholders are risk aggregators such as associations, cooperatives, mutuals, credit unions or NGOs, whereby a (re-)insurer makes payments to the risk aggregators, which provide services to individuals. The policyholder uses insurance to protect against their business or operational risk, such as non-repayment on a loan portfolio due to a climate related event. They may or may not choose to pass on a benefit following a payout to their individual clients, members or beneficiaries.

Macro level (indirect): Policies are held by governments or other national agencies, within the international/regional reinsurance market. Payouts can be used to manage liquidity gaps, maintain governmental services or finance post-disaster programmes and relief efforts for predefined target groups. Beneficiaries of these programmes can be individuals. These schemes can be operationalized through regional risk pools.

Source: adapted by IFAD-INSURED from Schäfer et al. (2016); after IFAD – WFP (2010)

[†] See also WBG-DRFI. (2021) on micro, meso and macro-level definitions and applications to disaster risk insurance in agriculture.

To date the widest application of index insurance has been micro-level index insurance for small-scale farmers in Africa, Asia and to a lesser extent in Latin America and the Caribbean. There are relatively few applications of index insurance at the meso-level. There has also been major interest in macro-level regional disaster risk insurance pools including the Caribbean Catastrophe Risk Insurance Facility (CCRIF), African Risk Capacity (ARC), PCRAFI (Pacific) and SEADRIF for South Asia and, specific to agriculture, the CADENA Program in Mexico.

Over the past decade the World Bank Group (WBG) and the World Food Program (WFP) have worked on a further index insurance delivery approach which has been termed "Modified Macro" model and which aims to provide livelihood protection to large numbers of targeted vulnerable farmers. This model builds on the experiences of one of the most comprehensive national macro-level agricultural index insurance schemes namely the CADENA program in Mexico, which was targeted at vulnerable poor farmers, livestock producers and aquaculture producers/fisherfolk. A major drawback identified by the WBG on the CADENA was that lump sum payouts were made by the insurers to the state governments who then decided on the distribution of the payouts to affected farmers – this led to major delays in distributing the payments, often those in most need did not receive payouts and rent seeking was a problem. In order to overcome these constraints, it was decided to modify the macro-level approach by:

- **Pre-identifying and registering the target beneficiaries** of the government purchased insurance policy and defining how much financial compensation each beneficiary would receive in the event the index insurance policy was triggered.
- **Establishing for each beneficiary a payment system** (e.g., bank account, mobile money account, SMS-token system, cheques) to receive a direct payout from the insurer.
- **Provision of insurance awareness and education to the target beneficiaries** so that they would understand the benefits and limitations of the protection being offered by government.

The Modified Macro approach was first designed as a satellite pasture drought index insurance cover for livestock ranchers in Uruguay and Argentina between 2010-11 and then transferred to Kenya and Ethiopia in 2014 as a livelihood drought protection cover for vulnerable pastoralists. In Kenya the Kenya Livestock Insurance Program (KLIP) was launched in 2015/16 and in Ethiopia the Satellite Index Insurance for Pastoralists in Ethiopia (SIIPE) was launched in 2018.

The Tanzania 2019 Draft Agriculture Insurance Regulations could usefully be updated to include allowance for index insurance for the agriculture sector to be underwritten at these different levels of risk aggregation: Micro-level, Meso-Level and finally Macro or Modified-Macro level.

More details on index insurance for agriculture are provided in the report 'Guidelines for Tanzania Agricultural Insurance Scheme' and can also be found in Mahul and Stutley (2010); IFAD – WFP (2010); World Bank (2011); and IFAD (2017).

4. Comments and Suggestions on the Text of the 2019 Draft Agriculture Insurance Regulations

The remainder of this note contains a technical review of the 2019 Draft Agriculture Insurance Regulations. Where appropriate, comments from the IFAD-INSURED team are provided next to the specific provisions.

Part I PRELIMINARY PROVISIONS

THE INSURANCE ACT

(CAP. 394)

REGULATIONS

(Made under section 167)

THE AGRICULTURE INSURANCE REGULATIONS, 2019

PART I PRELIMINARY PROVISIONS

1.- These Regulations may be cited as the Agriculture Insurance Regulations, 2019 and shall come into operation on such date as the Minister may, by notice published in the *gazette*, appoint.

- ***IFAD-INSURED Comment**: Amend to '1.- These Regulations may be cited as the Agriculture Insurance Regulations, **2023** and shall come into operation on such date as the Minister may, by notice published in the gazette, appoint.'*

2.- These regulations shall apply to insurers and insurance intermediaries transacting agriculture insurance business.

3.- In these Regulations, unless the context requires otherwise- "agriculture" means crop production, livestock keeping and shall include aquaculture, forestry and fisheries;

- ***IFAD-INSURED Comment**: Amend to '3.- In these Regulations, unless the context requires otherwise- "agriculture" means crop production, livestock **(including poultry)** keeping and shall include aquaculture **(farmed fish) and fisheries (capture fish) and forestry.'***

  ***NOTE:** TIRA may wish to discuss with Ministry of Livestock and Fisheries whether the scope of insurance is limited to aquaculture (farmed fish), or will also extend to insurance protection for artisanal fisherfolk involved in capture fishing, against loss or damage to their fishing vessels, nets and equipment and possibly including personal accident and life cover for the boat owner and/or employees, due to natural perils such as storm or tsunami.*

"agriculture insurance business" means provision of agriculture insurance products or services by an insurer, implementing institution or intermediaries;

- ***IFAD-INSURED Comment**: add the following new entry here: '"farmer" is a generic term and means a person who is engaged in "agriculture" and includes a crop producer (often referred to as a farmer), livestock producer including a pastoralist, aquaculture and fisheries producer and a forestry producer;'*

“specified person” means any officer or employee of a agricultural insurer or registered intermediary who possesses the requisite qualification and is mainly responsible for the soliciting and procuring of agriculture insurance business;

“premium” means the cost to insure an insurable subject matter as provided in these regulations, the premium rates approved by the Authority and those adjustments that are included and expressed on a per unit, insurable subject matter or plan basis;

- ***IFAD-INSURED Comment**: TIRA’s legal department to check whether this definition of “premium” includes the cost to insure a parametric or index insurance policy, such as the amount of rainfall deficit in mm as recorded at a weather station during the cover period and which is used as a proxy for drought damage to an insured farmer’s crop.*

“Weather Index” means an insurance that covers crop production losses caused by adverse weather;

- ***IFAD-INSURED Comment**: replace “Weather Index” means an insurance that covers crop production losses caused by adverse weather’ with the following text:*

  “Agriculture insurance products” include:

  ***Indemnity-based insurance products** which protect against physical loss or damage to an insured good or object due to the action of one or more insured perils, as more fully described in Part V, and*

  ***Parametric or index-based insurance products** which use a proxy variable(s) “the index (indices)” to approximate as closely as possible the damage or loss incurred to the good or object. Parametric insurance includes weather index insurance and other types of index insurance products as more fully described in Part V.*

PART II. REGISTRATION AND AUTHORIZATION TO CONDUCT AGRICULTURE INSURANCE BUSINESS

- ***IFAD-INSURED Comment:** this section quite appropriately regulates all agricultural insurance products, whether part of TAIS or not. Additional entries to include specific provisions that apply to TAIS products only could be added in this section.*

4. Any registered insurer interested in transacting agriculture insurance business shall obtain a prior written approval from the Commissioner;

5.-Any registered intermediary interested in transacting agriculture insurance business shall obtain a prior written approval from the Commissioner;

6.- (1) Any person interested in transacting agriculture insurance business may apply for registration in the manner prescribed under the Act.

Provided that, in addition to the above the applicant shall specify in the application the intention to transact agriculture insurance.

(2) The Commissioner may specify the additional information to be provided by the applicant in 6.-(1) above.

7.- The Commissioner of insurance shall issue registration certificate to successful applicant under R. 6 above.

8.- (1) All agriculture insurance products intended to be under-written shall require prior authorization by the Commissioner and shall bear the words: “agriculture insurance product”.

(2) Any agriculture insurance product which is not authorized by the Commissioner and does not bear the words: “agriculture insurance product” shall not be offered to the policy holders.

(3) All agriculture insurance policy documents intended to be offered shall require prior authorization by the Commissioner.

(4) Every insurer seeking authorization to conduct agriculture insurance shall submit a copy of the policy wording for the respective product to the Commissioner for review and approval.

(5) A person who contravenes sub-regulation (1), (2), (3) and (4) commits an offence.

PART III. CAPITAL REQUIREMENT FOR AGRICULTURE INSURANCE REGISTRANTS

9. An insurer, broker or agent transacting agriculture insurance business shall maintain at all times capital as provided for under the Insurance Act No. 10 of 2009 and the Regulations thereto.

PART IV. IMPLIMENTING INSTITUTION AND THE FUND

- ***IFAD-INSURED Comment**: in the title of PART IV replace “IMPLIMENTING ” with “IMPLEMENTING”:*

Implementing Institution

10.- (1) The Minister shall determine and establish an institution for the purposes of implementing the scheme.

- ***IFAD-INSURED Comment**: Specify the Minister*

(2) The Minister shall with regards to the institution under sub regulation (1) determine the nature, management structure, staffing and other relevant matters as shall deem fit and appropriate for effective management and implementation of the scheme.

(3) Nothing in this part shall be considered as prohibiting insurers from transacting agriculture insurance save as expressly stated;

- ***IFAD-INSURED Comment**: The key functions of the Implementing Institution include: (a) to manage the Agriculture Insurance Fund “the Fund” (as per Article 12.1) and (b) to manage the premium subsidy regime (as per Regulation 11(b)).*

  We understand that agriculture insurance business which qualifies for premium subsidies will be placed under the TAIS and therefore the Implementing Institution would be mainly overseeing TAIS implementation since there would not appear to be any justification for creating an Implementing Institution to oversee non-subsidised agriculture insurance business, as this is already regulated and supervised by TIRA under its mandate established in the Insurance Act.

  Given that these regulations were probably drafted before the set-up of the Steering Committee (SC) and of the Technical Committee (TC), updates to the regulations could introduce specific references to the SC and TC and, as suggested in IFAD-Insured Technical

Note 1, also to the Technical Support Unit (TSU), that may also play an important role in TAIS design and implementation.

In-line with what indicated in IFAD-INSURED Technical Note 1, international experience shows that there are different types of institutions that can be set up to manage an agricultural insurance program. For example, some countries with mature national agricultural insurance schemes have created "Risk Management Agencies" to supervise product design and approval, and to establish premium rates and implementation of the scheme and to manage premium subsidies – examples include the USA (RMA) and Chile (COMSA).

In other countries, the Ministry of Finance or Ministry of Agriculture (according to whose budget the premium subsidies are paid out of) supervise premium subsidy payments to the approved insurers against submission of monthly premium bordereau listing each and every bound risk (insured farmers) and their subscription details (insured location, insured crop, insured area, sum insured, premium rate, total premium, premium payable by the insured and premium to be paid by government).

In Uganda the Insurance Regulatory Authority (IRA) supervises the premium subsidy payments to the UAIS Consortium.

As discussed in more detail in the recommendations of IFAD-INSURED Technical Note 1, the suggestion for TAIS could be to set up a High-level Steering Committee (SC), an Intergovernmental Technical Support Unit (TSU) and a Technical Committee (TC), with the latter being the seat in which interaction and coordination between the public and the private sector stakeholders can take place.

Functions of the Implementing Institution

- ***IFAD-INSURED Comment**: in art. 11 the letters identifying the sub-points need to be reviewed as there are two (c) and two (g).*

11.- (1) Subject to the provisions of these regulations, the functions of the implementing institution are -

- ***IFAD-INSURED Comment**: Given the considerations on the institutional structure of TAIS provided above, art. 11 of the draft regulations could be revised to include the description of the institutions to be set up under TAIS with the respective mandates and tasks.*

(a) to implement, manage and administer the Agriculture Insurance Scheme in accordance with these regulations and other applicable laws;

- ***IFAD-INSURED Comment**: Adapt '(a) to implement, manage and administer the Agriculture Insurance Scheme in accordance with these regulations and other applicable laws;' to add the following in bold '(a) to implement, manage and administer the **Tanzania** Agriculture Insurance Scheme **(TAIS)** in accordance with these regulations and other applicable laws;*

(b) to subsidize the premiums chargeable on selected crops, livestock, aquaculture and forestry policies from the grants obtained from the Government;

(c) The Minister shall determine the selected crops, livestock, aquaculture and forestry for the purposes of sub-regulation 1.(b)

- ***IFAD-INSURED Comment**: Adapt '(c) The Minister shall determine the selected crops, livestock, aquaculture and forestry for the purposes of sub-regulation 1.(b)' to add the following in bold (c) The Minister shall determine the selected crops, livestock **(including poultry)**,*

*aquaculture **(farmed fish) and fisheries (capture fish)** and forestry for the purposes of sub-regulation 1.(b)*

(c) to encourage institutional lenders to lend more for agricultural production having regard to the added security for their loans provided by the scheme;

(d) to promote increased agricultural production generally in order to minimize or eliminate the need for adhoc assistance previously provided by Governments during agricultural disasters;

(e) to carry on insurance business on normal commercial basis and without subsidies on premiums as insurers of buildings, machineries, equipment and other items which form part of the total investment on farms and to reinsure this aspect of its operations through well-established channels with reputable reinsurance companies.

- ***IFAD-INSURED Comment:** Regulation 11 (e) appears to be incorrect as it is not a function of the Implementing Institution to carry on insurance business on a normal commercial basis without premium subsidies on farm buildings and machinery – this is the role of the approved insurance companies. It is noted that farm buildings and machinery and equipment do not fall under "agriculture insurance", but rather, under conventional property insurance and machinery and equipment insurance.*

(f) to operate other types of insurance business as may be permitted by the Commissioner of Insurance at competitive premiums;

- ***IFAD-INSURED Comment:** Regulation 11 (f). Same comments as above in 11(e).*

(g) to do anything that the Minister shall determine from time to time for the purposes of increasing the efficiency of the scheme; and

- ***IFAD-INSURED Comment**: Adapt '(g) to do anything that the Minister shall determine from time to time for the purposes of increasing the efficiency of the scheme;' to add the following in bold '(g) to do anything that the Minister shall determine from time to time for the purposes of increasing the efficiency of the **Tanzania Agriculture Insurance** scheme **(TAIS)**;'*

(g) to do anything or to enter into any transaction which is calculated to be connected and intended to facilitate the due performance of its functions under these regulations.

Fund of the implementing Institution

12. (1) There shall be established an Agricultural Insurance Fund for the implementing institution hereinafter referred to as "the fund"

(2) There shall be paid into the Fund—

(a). all such sums as may be budgeted by the Government and approved by Parliament for the use of the implementing institution;

(b). all such moneys received by the implementing institution in the exercise, discharge and performance of the powers, functions and duties under these regulations;

(c) all sums of money as the Government may determine from time to time;

(3) There shall be paid out of the Fund all sums of money required to defray any expenditure incurred by the implementing institution in the exercise, discharge and performance of its powers, functions and duties under these regulations and all such sums of money as are required to be paid out of such Fund by or under these regulations.

- ***IFAD-INSURED Comment.*** *If the main purpose of "the Fund" is to finance premium subsidies on agriculture insurance business that is placed under TAIS and insured by the Agro-Consortium, this should be stated clearly under Regulation 12. There are three related points and comments that are presented in more detail below:*

  1) Re-Premium subsidy provision, this should be clearly specified in Part IV, or in a separate act such as an "Annual TAIS Plan", as happens in other well-structured national programs (e.g. Spain, Italy, etc.):

  A. Which classes of agriculture insurance are eligible for TAIS premium subsidies:
  - *a. Crops*
  - *b. Livestock (including poultry)*
  - *c. Aquaculture* ***(farmed fish) and fisheries (capture fish)***
  - *d. Forestry*

  B. Within each class of agriculture, the priority commodities which will be insured under TAIS, and which will be eligible for TAIS premium subsidies including: named food and cash crops; priority types of livestock, priority types of aquaculture species, fisheries species and forestry tree species. See the ASDP Phase II priority agriculture commodities (Attachment 1):

  C. Which types of farmers (small, medium, large, as defined) are eligible for premium subsidies under each class of agriculture insurance

  D. The premium subsidy levels (expressed as a percentage of the Original Gross Premium or Commercial Premium Rate) that each type of farmer is eligible for under TAIS.

  E. Any ceilings on the amount of premium subsidy that each type of farmer is eligible for each cropping season or 12-month policy period / year.

2) Types of farmers eligible for premium subsidies*: The classification of farmers adopted by the National Bureau of Statistics (NBS) and MoA in Tanzania, is into "****small farms****" and "****large farms****". The definitions as per NBS, 2021 (pages XXX to XXXII) are set out below:*

"Agricultural Holding

Is any economic unit of agricultural production (like a garden of temporary and/or permanent crops or cattle rearing/plantation) under single management, without regard to title, legal form or size. Management may be exercised by an individual member of the household or by the entire household. For the purpose of 2019/20 Agriculture Sample Census, agriculture holdings were restricted to those that met one or more of the following conditions:

• Having or operating at least 25 square meters of arable land
• Own or keep at least one head of cattle or five goats/sheep/pigs or fifty chicken/ducks/turkeys during the agriculture year 2019/20.

Crop Only

A household is referred to be crop only, if it has cultivated a piece of land equal or exceeding 25 square meters. This context also applies to all households owning or have kept livestock whose number does not qualify such household to be an agricultural holding (No cattle or less than 5 goats/sheep/pigs or less than 50 chickens/turkeys/ducks/rabbits).

Livestock Only

A household is referred to be a livestock only if it has owned or kept at least 1 cattle and/or 5 goats/sheep/pigs or more and/or 50 chickens/turkeys/ducks/rabbits or more during the reference agricultural year.

This also applies to all holders owning or having cultivated land less than 25 square meters.

Pastoralists

This refers to the households involved in livestock keeping with behaviour of seasonal movement in search of water and pasture for their livestock.

Crops and Livestock

A household is referred to be both crops and livestock if it has cultivated a piece of land equal or exceeding 25 square meters and has owned or kept at least 1 cattle and/or 5 goats/sheep/pigs or more and/or 50 chickens/turkeys/ducks/rabbits or more during the reference agricultural year.

Fish Farming

A household is referred to be fish farming if it involves itself in raising fish. This do not include households that fish in the naturally occurring water bodies such as river, lakes, seas, etc.

Small Scale Farms

These are farms, with at least 25 square meters of planted land and/or one cattle, 5 goats/sheep/pigs, 50 chickens/turkeys/ducks/guinea fowls/rabbits.

Large Scale Farms

These are farms with at least 20 hectares of cultivated land or 50 herds of cattle or 100 goats/sheep/pigs or 1,000 chickens. In addition to this, they should fulfil all of the four listed conditions:

i). Greater part of the produce should go to the market.
ii). Operation of farm should be continuous.
iii). There should be an application of machinery/implements on the farm; and
iv). Should have at least one permanent employee."

IFAD-INSURED Comments *on the NBS farm classification system are the following:*

- *Only small farms and large farms are identified for crop producers and livestock owners and there is no definition of what constitutes the upper limit of a small farm and then a "**medium-sized**" farm.*
- *It will be necessary for TAIS stakeholders to define the limits for **small farmers** (e.g. at least 25 square meters of planted land **up to 5.0 hectares of planted land** and/or one cattle, 5 goats/sheep/pigs, 50 chickens/turkeys/ducks/guinea fowls/rabbits **up to 10 herds of cattle, 20 goats/sheep/pigs, 200 chickens/turkeys/ducks/guineafowls/rabbits***
- *It will be necessary for TAIS stakeholders to define the limits for **medium farmers** (e.g. at least **5.0 hectares of planted land** up to 20 hectares of cultivated land and/or **more than 10 herds of cattle, 20 goats/sheep/pigs, 200 chickens/turkeys/ducks/guineafowls/rabbits up to** 20 hectares of cultivated land or 50 herds of cattle or 100 goats/sheep/pigs or 1,000 chickens*
- *Finally, then the NBS definition of **large farms** would apply: These are farms with at least 20 hectares of cultivated land or 50 herds of cattle or 100 goats/sheep/pigs or 1,000 chickens and which also fulfil all of the four listed conditions above.*

3) Premium Subsidy levels

In Kenya, crop producers insured under the KAIP qualify for a 50% premium subsidy subject to a maximum limit of 5 acres of subsidized crop insurance.

In Uganda (under the Uganda Agricultural Insurance Scheme - UAIS) the following premium subsidy levels apply:

- *Large farmers: 30% premium subsidy*
- *Small farmers: 50% premium subsidy*
- *Farmers in high-risk regions: Up to 80% premium subsidy (high-risk and disaster-prone areas include Kasese, Arua, Isingiro, Ngora, and Mount Eldon region) (UAIS-TWG n.d.)*

For the purposes of the UAIS, large-scale and small-scale farmers are classified as follows:

- ***Large-scale farmer** is one with a farm of five acres (2.5 hectares) or larger, or a farm that generates income of UGX 20 million or more every season*
- ***Small-scale farmer** is one with a farm of less than five acres (2.5 hectares), or a farm that generates income of less than UGX 20 million every season (UAIS-TWG n.d.).*

For the purposes of the UAIS, large-scale and small-scale livestock producers are classified as follows:

• ***Large-scale livestock producer is one owning more than***

- *30 head of cattle, or*
- *50 head of pigs, or*
- *2,000 head of poultry*
- *For fish farming, only large farms (as determined by UIA-AIC) accepted*

• ***Small-scale livestock producer is one owning***

- *1–30 head of cattle or*
- *1–50 head of pigs or*
- *500–2,000 head of poultry*

*For fish farming, small farms are not accepted (**UAIS-TWG n.d.**).*

***IFAD-INSURED Comments** on the above:*

- ***Under TAIS, government, in consultation with farmers' organisations and the insurance companies, will need to decide on the premium subsidy levels that will apply to small, medium, and possibly large farmers** and the ceiling or maximum amount of premium subsidy per insured farmer/livestock producer/aquaculture farmer/forestry owner per season or year.*
- ***If government is also planning to support the implementation of TAIS through providing financial and logistical support for other areas,** such as data strengthening, farmer insurance awareness and education programs, and capacity building for public and private stakeholders, these expenditure items should be clearly stated under Regulation 12.*
- *It is appropriate to state clearly what "expenditure" items of the Implementing Institution will be paid out of the fund to avoid situations where the fund is used to finance the fixed and operating expenses of the implementing institution rather than financing TAIS premium subsidies and other TAIS-related support costs.*

Part V. AGRICULTURE INSURANCE SCHEME

- ***IFAD-INSURED Comment.*** *Replace 'Part V. AGRICULTURE INSURANCE SCHEME' with the title 'Part V. TANZANIA AGRICULTURAL INSURANCE SCHEME, TAIS'*

Establishment of the scheme

13.- (1) There is hereby established a scheme to be known as the Agricultural Insurance Scheme (in these Regulations referred to as the "Scheme")

- ***IFAD-INSURED Comment:*** *Replace with 13.- (1) There is hereby established a scheme to be known as the* ***Tanzania*** *Agricultural Insurance Scheme (in these Regulations referred to as* ***"TAIS"****)*

Objectives of agriculture insurance

14.- (1) The general objective of the scheme is to protect the farmers from the effects of natural hazards by introducing measures which shall ensure an indemnity sufficient to keep the farmer, in business in the event of loss, but specifically the objectives of the Scheme are to –

- ***IFAD-INSURED Comment:*** *Replace with 14.- (1) The general objective of the* ***TAIS*** *is to protect the farmers from the effects of natural hazards by introducing measures which shall ensure an indemnity sufficient to keep the farmer,* ***livestock producer, aquaculture and fisheries producer and forestry owner*** *in business in the event of loss, but specifically the objectives of the Scheme are to –*

(a) provide financial support to farmers where loss to crops, livestock, fisher or forestry arises from natural hazards;

- ***IFAD-INSURED Comment:*** *Replace with (a) provide financial support to farmers where loss to crops, livestock* ***(including poultry), aquaculture****, fisher****ies*** *or forestry arises from natural hazards.*

(b) induce and increase the provision of credit by lending institutions to farmers;

(c) promote agricultural production; and

(d) minimize or eliminate the need for Government to provide ad hoc assistance to farmers during agricultural disasters.

- ***IFAD-INSURED Comment:*** *the 2019 objectives set out in Regulations 14 (1) are very sound and appear to apply equally today in 2023 to the TAIS.*

Geographical coverage

15.- (1). The scheme covers all Agro-ecological zones in Tanzania.

- ***IFAD-INSURED Comment A****: Replace with: 15.- (1). The* ***TAIS*** *covers all Agro-ecological zones in Tanzania.*

- ***IFAD-INSURED Comment B****:*

  Will the implementation of TAIS foresee different institutional arrangements between the mainland and Zanzibar?

Risks Covered

16.- (1) The scheme covers agriculture and livestock risks in all food and cash crops both annual and perennial.

- ***IFAD-INSURED Comment**: Suggest to replace with the following: 16.- (1) The **TAIS** covers **crops, livestock (including poultry), aquaculture and fisheries and forestry risks.***

Priority crops

(2) Priority crops as specified under the priority commodities indicated on the Agricultural Sector Development Programme II (ASDP II) (2017), Page 33 or as the Minister may otherwise determine.

- ***IFAD-INSURED Comment**: Suggest to replace subtitle with **'Priority commodities',** and the wording with the following: '(2) Priority **food crop and cash crops both annual and perennial; livestock (including poultry); aquaculture and fisheries, and forestry commodities are** specified under the priority commodities indicated on the Agricultural Sector Development Programme II (ASDP II) (2017), **as listed in Attachment 1 to these Regulations**, or as the Minister may otherwise determine. **The priority commodities may also be specified separately on an annual basis in the TAIS Annual Business Plan and Budget.***

Type of Covers and Perils

Crops covered

- ***IFAD-INSURED Comment**: Suggest to replace with the following: Crops ~~covered~~ **(Annual and perennial food crops and cash crops and tree crops)***

17.- (1) Types of covers are as follows:

(a) Multi-peril crop Insurance (MPCI)
(b) Named Perils Insurance
(c) Weather Index

- ***IFAD-INSURED Comment A**: Suggest to replace with the following: 17.- (1) Types of **crop insurance** covers are as follows:*

- ***IFAD-INSURED Comment B:** Suggest to amend the text stating '(a) Multi-peril crop Insurance (MPCI) (b) Named Perils Insurance (c) Weather Index' to the following **'the indemnity-based types of crop insurance policy and also the index-based crop insurance policies that are permitted under these regulations include:***

Table 1: CROP AND FORESTRY INSURANCE COVERS

INDEMNITY-BASED
1. **Named-Peril Crop Insurance (NPCI) for selected natural, climatic and/or biological perils.** An NPCI policy is a damage-based indemnity policy that involves actual in-field measurement of the percentage loss or physical damage to the insured crop.
2. **Multiple Peril Crop Insurance (MPCI).** This is a loss of yield-based indemnity policy that usually insures yield shortfall or loss due to all natural, climatic and biological perils. Yield shortfall is measured in-field immediately prior to the harvest of the crop.
3. **Crop Revenue Insurance (CRI).** This policy indemnifies the Insured against both loss of crop yield and a fall in the actual harvest sale price of the crop. CRI cover is very restricted to a few countries such as the USA and to commodities which are traded.
4. **Other specialist covers (e.g. Aggregate Production shortfall cover).** Such covers are based on MPCI loss of yield-based principles and are usually tailor-made for major grain producers involved in contract farming operations and is designed to protect them against aggregate production shortfalls. In addition, cover may be designed as a Supplier's Extension Policy to enable the grain producer to make good any production shortfall in its sales contracts with grain traders/processors.
OTHER SPECIALIST CROP & FORESTY INSURANCE (INDEMNITY-BASED)
5. **Greenhouse Insurance (insuring against physical loss or damage to the protected crop and the greenhouse buildings, machinery and equipment).** Most greenhouse crop insurance is named peril percentage-damage based cover.
6. Forestry Insurance, also known as Standing Timber Insurance providing cover for loss or damage to trees typically against fire, wind, and allied perils.
7. **Plantation/ Tree Fruit Insurance** involving loss of the productive asset - bush or tree (named peril damage-based indemnity cover, typically insuring against fire, wind, allied perils).
INDEX-BASED
8. **Weather-Index Insurance (WII), also known as Climate Risk Index Insurance (CRI) based on Ground Weather Stations** providing cover against selected named perils such as excess rainfall and rainfall deficit, temperature (excess heat and frost/freeze), evapotranspiration, windspeed, soil moisture. Cover may also include natural perils (e.g. earthquake intensity indices).
9. **Weather-Index Insurance (WII), also known as Climate Risk Index Insurance (CRI) based on Remote Sensing/Satellite Indexes** providing cover against selected named perils such as excess rainfall and rainfall deficit (rainfall estimates RFEs), temperature (excess heat and frost/freeze), evapotranspiration , windspeed, soil moisture, vegetation indices (NDVI, EVI) sea surface temperatures (SST) etc. Cover may also include natural peril indices (e.g. earthquake intensity, tsunami, sea surge).
10. **Area Yield Index Insurance (AYII). A multi-peril crop yield-based insurance policy that makes payouts according to yield loss in a defined geographical area (the Insured Unit IU).** AYII establishes a normal average yield (the "area yield index") for an insured crop in a defined IU. An Insured Yield is established as a percentage of the average yield, termed the "coverage level". At harvest, farmer's yields are measured on a random sample basis to establish the actual average yield in the IU and where the actual yield falls short of the Insured Yield, all farmers receive the same yield shortfall payout. As such AYII does not indemnify yield loss at the individual farmer level.
11. **Other (e.g. specialist Flood Index insurance)** involving measurement of river water flow (cubic m/sec), or height at recording stations.

Source: Authors

Livestock

18.- The scheme covers:

- ***IFAD-INSURED comment:*** *Does Regulation 18 only cover livestock insured under TAIS (the scheme)? To be consistent with Regulation 17 above, should this read "Types of livestock insurance indemnity-based policies and livestock index-based policies that are permitted under these regulations include"?*

(a) Traditional animal accident and mortality cover against fire, electrocution. theft, floods, lightening, and

(b) Epidemic disease cover against Foot and Mouth Disease, Contagious Bovine Pleuropneumonia, Rabies, New Castle Disease, African swine fever, Rift Valley Fever, Brucellosis, Black Quarter and Lumpy Skin Disease.

(c) All risk mortality cover against poisoning, snake bite, predators and accidents.

- **IFAD-INSURED comment:** *We recommend replacing (a) and (b) and (c) with the different types of traditional indemnity-based livestock insurance and index-based livestock insurance. In the table below we have listed the mainly traditional livestock indemnity-based livestock (and poultry) covers available in international markets.*

Table 2: LIVESTOCK & POULTRY INSURANCE COVERS

INDEMNITY-BASED
1. Named-Peril Livestock Accident and Mortality Insurance (Individual Animal insurance; poultry on flock basic)
2. All Risks Livestock Mortality Insurance including diseases (Individual Animal Insurance; poultry on flock basis)
3. Epidemic disease/ Business Interruption cover (herds). Specialist policies designed to indemnify both loss of animals following an epidemic and also the reduction or loss of income arising out of the ban on sales of animals or animal products (milk, eggs, etc.) for up to 12 months post-event. (e.g., Germany since 1990 and Mexico since 2005). Very restricted to large commercial livestock enterprises operating under very high levels of sanitary and husbandry measures.
4. Bloodstock (Individual animal insurance). This insurance is for high-value animals (e.g., race horses, semen bulls, and prize cows). The insured perils commonly include all risks mortality, disability, infertility, medical treatment, and surgery.
5. Livestock revenue insurance. Which includes insurance products that protect a producer against a decline in revenue reflected in the market. Very few countries offer such cover. E.g. USA/RMA Livestock Gross Margin (LGM); Livestock Risk Protection (LRP). Cover offered to intensive beef fattening producers.
6. Other Livestock Insurance Covers (usually provided as additional covers, i.e. as an 'add-on' to a named peril livestock mortality cover):
Transit Insurance. Covering accidental injury/death of animals which are being transported from one farm to another or being transported to market for sale.
Exhibition Insurance. For animals which are temporarily away from their usual location and being exhibited at shows.
Loss of Use Insurance. E.g.,for commercial dairy cattle which as a result of severe mastitis are no longer able to produce milk.
Insurance of slaughtered animals (Carcass removal/destruction insurance). In many countries farmers can only dispose of the carcasses of dead animals at official centers where tha animals are then destroiyed by the authorities. Insurance covers the costs of livestock carcass removal and destruction.
7. Bee Insurance. Named peril insurance for loss or damage to beehives and the bees against perils such as fire lightning, storm. In some countries (e.g. USA) insurance extends to product liability cover and third party injury liability.
INDEX-BASED
8. Index-based livestock Mortality Insurance (IBLI) implemented in Mongolia and in Kenya
9. Satellite Index Insurance (NDVI for loss of pasture/grazing mainly due to failed rains and drought). This cover is designed for pastoralists and agro-pastoralists and has been commercially implemented in Kenya and Ethiopia for more than 1 decade both as a micro-retail cover IBLI and also as a macro-level livelihoods cover purchased by government of Kenya (Kenya Livestock Insurance Program) and the Regional government, Somali Region Ethiopia (SIIPE).

Source: Authors

In the context of Tanzania, the 3 most appropriate covers are likely to be:

1) *Named-peril Livestock Accident and Mortality Insurance policy;*
2) *Under conditions of high management and disease control, underwriters may grant All Risk Mortality cover including epidemic diseases and theft for dairy cattle.*
3) *Satellite index insurance (NDVI) providing pasture-drought protection for pastoralists and agro-pastoralists located mainly in northern Tanzania.*

Key Features of a Named Peril Accident and Mortality Cover for Livestock (and poultry) include:

Insurable animals

- *Cattle (beef & dairy), other bovine sp., Equine sp., Camels, Swine, Goats & Sheep, Poultry, Pet animals, bees*
- *Most policies place an age limit on an animal for insurance purposes (e.g. for dairy cows from 6 months to 8 years)*
- *Most policies for dairy or beef cattle require that the animals are reared in a single farm location which is enclosed to prevent the animals from escaping and being involved in road accidents.*

***Insured perils**: Mortality cover typically insures individual animals against accidental death or injury requiring slaughter due to named perils of:*

- *fire, lightning, aircraft & explosion (FLEXA), smoke,*
- *flood and windstorm,*
- *subsidence and landslide*
- *riot, strike & malicious damage*
- *suffocation due to machinery breakdown, electrocution*
- *Other specific perils may be added, e.g., snake bite, snow smothering.*

***Standard Mortality cover generally excludes**:*

- *intentional slaughter and governmental slaughter order*
- ***diseases and especially epidemic diseases***
- ***loss of economic production from animals that do not die (e.g. milk production)***
- *theft*
- *poisoning & pollution (but note the National Agricultural Insurance Company of Senegal, CNAAS, has a named peril policy that insures against poisoning of the animal)*
- *all forms of consequential loss and legal liability*

Basis of Sum Insured

- *Usually based on market value of the animal according to its breed (local vs improved breeds and pedigree animals) and age of the animal*

Premium Rates

- *Vary from <1% to >10% of the value insured (see above 'basis of sum insured') for individual animal insurance according to:*
  - *Animal husbandry & management & sanitary standards utilised of the Insured*
  - *Past loss history (animal mortality rates)*
  - *The range of insured perils*
  - *The excess or deductible structure*

***Basis of Indemnity and Deductible**:*

- *Accident requiring emergency slaughter or death due to insured perils*
- *Indemnity is based on the insured market value for the dead animal, sometimes adjusted for any carcass value, and adjusted for the policy "excess" which may take the form of:*
  - *A **coinsurance** (typically 10% to 20%) of the insured value of the dead animal;*
  - *On some policies which insure animals on a "group or herd basis" an each and every loss **deductible** may be applied (e.g., 2 animals or x% of the insured animals)*

*In some countries **All risk Livestock Mortality** cover is available to cover:*

- *Accident, injury, illness, and Diseases: named diseases and in certain cases epizootic or Class A diseases e.g., Foot and Mouth Disease (FMD), Haemorrhagic Septicaemia, Contagious Bovine Pleuropneumonia, Rabies, New Castle Disease (poultry), African swine fever, Rift Valley Fever, Brucellosis, Black Quarter and Lumpy Skin Disease.*
- *Theft and straying*
- *Birth related complications in female animals and loss of calves*
- *Veterinary expenses in the case of accidental injury or illness*
- *Poisoning and pollution*
- *Third party liability*

Such covers typically carry a high deductible and or high rates (e.g., Germany, Czech Republic, Hungary)

Aquaculture

19.- (1) Aquaculture insurance covers aquatic creatures and plants in fresh and sea water against:

(a) mortality of the fish stock and physical loss;

(b) damage to the insured ponds, cages, installations, and equipment; by named perils and all risks insurance; and

(c) natural meteorological events, such as storm, tsunami, pollution, and flood damage.

- ***IFAD-INSURED Comment A: The international aquaculture insurance industry offers two main types of mortality cover for fish stock:***

  (1) named-peril cover for loss of fish stock, *which is typically restricted to natural perils such as storm, tidal wave, and flooding resulting in the death of the fish stock and usually excludes all diseases, and*

  (2) all-risks cover for loss of fish stock*, which typically includes diseases of the fish stock, pollution, algae bloom, theft, machinery breakdown, etc. All-risk cover can be offered only with high premium rates and/or high event deductibles: the all-risks aquaculture policies typically carry per event deductibles of between 10 percent and 30 percent of the total sum insured or values at risk at the time of the loss, and premium rates typically vary from about 2.5 percent to 10 percent according to the location, management, and technology levels of the insured risk and species of insured fish.*

  (3) Cover may also extend to loss or damage to the aquaculture installations (fishponds, fish cages, buildings), and the machinery and equipment (pumps, oxygenators-aerators, feeding equipment, and feed stocks)*.*

- ***IFAD-INSURED Comment B****: TIRA may wish to discuss with Ministry of Livestock and Fisheries whether the scope of insurance is limited to aquaculture (farmed fish), or will also extend to insurance protection for artisanal fisherfolk involved in capture fishing, against loss or damage to their fishing vessels, nets and equipment and possibly including personal accident and life cover for the boat owner and/or employees, due to natural perils such as storm or tsunami.*

Forestry

20.- Forestry insurance undertaking in the forest including trees management, hunting and bee keeping against:

- ***IFAD-INSURED Comment****: Suggest to replace with the following '20.- Forestry insurance* ***(standing timber) covers are named-peril damage-based indemnity policies that insure woodlots and commercial forestry plantations and natural forests against fire and allied named perils that results in damage and losses to the standing timber (e.g. pine, eucalyptus, teak, etc.):'***

  Note. *Forestry insurance does not insure hunting and beekeeping. Hunting is not a class of agricultural insurance known to us. Bee insurance is a recognised class of "livestock insurance" which normally insures against loss or damage to the beehives and the bees therein, typically due to FLEXA and windstorm. Normally diseases of bees and theft are excluded (See Regulation 18 and list of livestock indemnity-based insurance products).*

1. (a) fire only or, fire, lightning, explosion, damage by wild animals and aircraft impact (FLEXA).

- ***IFAD-INSURED Comment****: Suggest to replace with the following '* (a) fire only or, fire, lightning, explosion, ~~**damage by wild animals**~~ and aircraft impact (FLEXA).

  Under certain conditions coverage can be extended to:

2. (b) damage caused by windstorms, volcanic eruption, flood, hail, freeze, damage by wild animals.
3. Fire-fighting expenses and debris removal, capped at an annual aggregate limit.

Adherence to principles of agriculture

21.- A person insured under the Scheme shall satisfy such conditions relating to good principles of agriculture as may be laid down, from time to time, by the Minister.

Other insurance services

22.- The scheme extends to other insurance services connected to farming including health insurance, life assurance, personal accident insurance and other property insurance.

- ***IFAD-INSURED Comment**: These regulations are designed to cover agriculture insurance as a distinct class of non-life or general insurance business. Is it therefore desirable to include life insurance, and then other classes of non-life insurance including health insurance, personal accident insurance and other property insurance under these Agriculture Insurance Regulations?*

Will life insurance and these other classes of non-life insurance be underwritten by the Consortium under TAIS and attract premium subsidies?

Determination of Sum Insured

Crops

23.- (1) The sum insured shall be determined at a value threshold yield and any other manner as the Commissioner shall determine.

- ***IFAD-INSURED Comment** on Regulation 23 (1). The basis of valuation and sum insured on a crop insurance policy is typically based on (a) the variable and/or fixed costs of production per hectare, involved in growing the crop, or (b) the amount of production credit per hectare granted by a financial institution through to (c) the revenue of sale value of the expected crop production equivalent to the expected yield in kilograms (Kg) or metric tonnes (MT) per hectare times an agreed sales price per Kg or MT.*

(2) In a case of unsubsidized insurance a farmer may insure the crops beyond value threshold yield level in sub-regulation (1) as agreed with the insurer.

(3) In case of loaned farmers the Sum Insured shall be at least equal to the amount of crop loan advanced or as agreed by the insurer.

- ***IFAD-INSURED Comment:** suggest to replace with '(3) In case of **loanee** farmers the Sum Insured shall be at least equal to the amount of crop loan advanced or as agreed by the insurer.'*

Livestock

24.- The sum insured for livestock insurance shall be determined at market price, based on recommendation of the examining Veterinarian.

- ***IFAD-INSURED Comment:** suggest to replace with '24.- The sum insured for livestock insurance shall be determined at market price **according to the breed of the animal and its age,** based on recommendation of the examining Veterinarian.*

Aquaculture

25.- The sum insured for aquaculture shall be calculated on adjustable basis using a maximum sum insured.

- ***IFAD-INSURED Comment:*** *The sum insured for aquaculture is typically calculated on the basis of:*
  a) *The costs of production involved in purchasing of fish stock (fingerlings) and in feeding and managing the fish up to the point of maturity and sale, calculated on a per hectare basis, or*
  b) *The value of the fish stock that are lost at the time of an insured event. This basis of valuation is much more complicated as it requires monthly valuations of the fish stock according to the age of the fish and average expected weight, up to the time of sale.*
  c) *Where cover is provided against loss or damage to the fishponds or cages and equipment the sum insured is based on the replacement costs of the installations and equipment.*

Forestry

26.- Sum insured for forestry shall be determined based on the recommendation of the examining forester who shall consider among others the forest age, size and variety of trees.

- ***IFAD-INSURED Comment****: For forestry insurance the basis of valuation and the sum insured depends upon the age of the plantation. Typically in the early years, the sum insured is based on the costs of establishment per hectare of the plantation in year 0 (costs of land preparation, tree seedlings and planting) and cumulative annual maintenance costs of the plantation up to the age where the trees have a commercial timber value, at which point the sum insured is based on the estimated volume of standing timber (in cubic meters per hectare) times its agreed sale value per cubic meter.*

Indemnity and Threshold

Crops

27.- An indemnity for crops shall be the production cost, value of production infrastructure, average yield per acre and expected revenue per acre.

- ***IFAD-INSURED Comment****:*
  - ***For NPCI indemnity policies****, the in-field assessed percentage damage or loss to the crop is applied to the sum insured to derive the gross value of loss, minus the value of the policy excess (percentage damage qualifying franchise, or percentage deductible applied to the sum insured or coinsurance applied to the gross value of loss) to derive the net claim payable to the Insured.*
  - ***For MPCI loss of yield policies****, the amount of yield shortfall or loss below the insured yield coverage level (e.g., 75% of average yield) will be established by in-field assessment at the time of harvest: the percentage yield shortfall is applied to the sum insured to derive the gross value of loss. Normally there is no additional excess or deductible as the Insured yield coverage level acts as the first loss deductible retained by the Insured.*
  - ***For index policies*** *the amount of loss as determined by the index Calculation Agent, is applied to the sum insured to derive the payment due to the Insured. It is not conventional on an index insurance cover to apply a separate excess or deductible to the gross value of the payout since establishing the index level at which the contract starts paying out (i.e., the "trigger") has an equivalent purpose.*

Note: *we are not aware of any growing crop insurance policies that include "the value of production infrastructure" in the calculation of the sum insured and indemnity save for greenhouse insurance policies where the insured may typically insure both loss or damage to the greenhouse and equipment and also to the crop grown in the greenhouse. Crop production infrastructure is typically insured separately under a machinery and equipment policy, or buildings policy.*

Livestock

28.- An indemnity for livestock shall be the market value and/or value of production infrastructure.

- ***IFAD-INSURED Comment:*** *An indemnity for traditional individual livestock indemnity-cover shall be the market value of the animal at the time of loss, minus any salvage value of the carcass, minus any coinsurance on the value of the loss.*

Note: *we are not aware of any livestock mortality policies that include "the value of production infrastructure" in the calculation of the sum insured and indemnity. Production infrastructure such as milking parlours and milking machinery is typically insured separately under a machinery and equipment policy, or buildings policy.*

Aquaculture

29.- An indemnity for aquaculture shall be determined by considering the expected revenue and value of production infrastructure.

IFAD-INSURED Comment: *An indemnity for aquaculture shall be determined:*

(a) For a policy which insured against loss of production costs invested in growing the fish stock, most policies are based on a total loss of the fish stock, and the indemnity is equivalent to the sum insured minus the policy excess/deductible which is expressed as a percentage of the sum insured.
(b) For a policy insuring against the partial loss or damage to the fish stock, the indemnity is based on the value of the lost fish stock at the time of loss minus the policy excess/deductible which is expressed as a percentage of the sum insured.

Note: *many aquaculture insurance policies insure against the loss or damage to both the fish stock and the ponds or nets or cages which the fish are reared in.*

Forestry

30.- The limit of indemnity for forestry shall be determined based on age of the trees, planting costs, fire brigade cost and additional cost for damage of infrastructure (e.g. gates, stiles, fences, roads, etc.).

- ***IFAD-INSURED Comment:*** *An indemnity for forestry insurance shall be determined according to the damaged area and within the damaged area, the assessed percentage damage or loss of trees: the percentage damage is applied to the sum insured damaged area to derive the gross value of loss and from this amount is deducted any salvage value of the damaged timber minus the policy excess/deductible. Most forestry insurance for large plantations is subject to an annual aggregate loss limit.*

  Where cover is provided for fire-fighting costs these are also assessed and added to the claim.

Qualification for indemnification

- ***IFAD-INSURED Comment****: suggest adding that Regulation 31 only applies to traditional indemnity-based agriculture insurance policies and <u>not</u> to index insurance policies.*

31.- A farmer shall not qualify for indemnity under these Regulations unless:

(a) the insurance cover was obtained before the damage or loss occurred;

(b) he has a valid insurance cover at the time of damage or loss;

- ***IFAD-INSURED Comment**: suggest adapting to 'he/**she** has a valid insurance cover at the time of damage or loss;'*

(c) he followed practices for crop, livestock, forestry and fishery production;

- ***IFAD-INSURED Comment**: suggest adapting to '(c) he/**she** followed **the recommended** practices for crop, livestock, forestry and fishery production **as made by the respective Ministry or other recognized authority**;'*

(d) the cause of damage or loss was one of the risks covered by the insurance policy;

- ***IFAD-INSURED Comment**: suggest adapting to '(d) the cause of damage or loss was one **or more** of the risks covered by the insurance policy;'*

(e) the notification of the damage or loss was made within the stipulated time; and

(f) he has satisfied such other reasonable conditions as the insurer, may specify in the policy of insurance.

- ***IFAD-INSURED Comment**: suggest adapting to '(f) he/**she** has satisfied such other reasonable conditions as the insurer, may specify in the policy of insurance.'*

Guidelines on Premium

32.- The Commissioner shall issue guidelines to govern on the determination of premium for the purposes of agriculture insurance.

Reinsurance and retrocession

33.- Reinsurance and retrocession arrangements in agriculture insurance shall be as provided in the Act, Regulations, Guidelines and Circulars issued by the Commissioner.

PART VI PROVISION OF AGRICULTURE INSURANCE POLICIES

General agriculture insurance

34.-(1) An insurer carrying on general agriculture insurance following approval by the Commissioner shall offer general agriculture insurance products.

- ***IFAD-INSURED Comment**: suggest adapting to **'34**.-(1) An insurer carrying on general agriculture insurance following approval by the Commissioner shall offer general agriculture insurance products **and policy wordings (including general conditions and special conditions).'***

(2) Subject to sub-regulation (1), the insurer offering general agriculture insurance products shall design a simple insurance policy in Kiswahili language in manner that is easily understandable by the policyholder.

- ***IFAD-INSURED Comment**: suggest adapting to **'**(2) Subject to sub-regulation (1), the insurer offering general agriculture insurance products shall design a simple insurance policy **wording** in Kiswahili language in manner that is easily understandable by the policyholder.'*

Life Agriculture Insurance

35.-(1) An insurer carrying on life agriculture insurance following approval by the Commissioner shall offer life agriculture insurance products.

- ***IFAD-INSURED Comment****: We assume that "life agriculture insurance" refers to the issuance of a standard life insurance policy to an agriculture producer?*
- *suggest adapting to '35.-(1) An insurer carrying on life agriculture insurance following approval by the Commissioner shall offer life agriculture insurance products* ***and policy wordings.****'*

(2) Subject to sub-regulation (1), the insurer offering life agriculture insurance products shall design a simple insurance policy in Kiswahili language in manner that is easily understandable by the policyholder.

- ***IFAD-INSURED Comment A****: Further to our comment on Regulation 22, is it desirable for the Agriculture Insurance Regulations to include Life Insurance? Will life insurance be underwritten by the Consortium under TAIS and attract premium subsidies?*
- ***IFAD-INSURED Comment B****: In case wording is kept, suggest adapting to (2) Subject to sub-regulation (1), the insurer offering life agriculture insurance products shall design a simple insurance policy* ***wording*** *in Kiswahili language in manner that is easily understandable by the policyholder.*

Distribution of agriculture insurance products

36.- (1) Agriculture insurance products shall be distributed through:-

(i) Insurance agents, Insurance brokers, (ii) Mobile Network Operators;
(iii) Bancassurance;
(iv) Microfinance Institutions;
(v) Saccos and Community Microfinancing groups;
(vi) Cooperative unions ;
(vii) Inputs suppliers; and
(viii) Web aggregators.

- ***IFAD-INSURED Comment:*** *do TIRA wish to add: '(ix) Any other agriculture insurance products distributor that may be approved by the Commissioner of Insurance'?*

Agreement for offering agriculture insurance products

37.- (1). An agriculture insurance products distributor shall enter into an agreement with an insurer which clearly stipulates the terms and conditions including the duties and responsibilities of both parties.

(2).- The agreement referred to in sub-regulation (1) shall authorize the agriculture insurance products distributor to perform the following additional functions:

(a) collection of proposal forms;
(b) collection of self-declaration form from the insured that the subject matter is in insurable condition;
(c) facilitate payment of premium to the insurer;
(d) distribution of policy documents.
(e) maintenance of a register of all those insured and their beneficiaries covered under the agriculture insurance scheme together with details of name, sex, age, address, nominees and thumb impression or signature of the policy holder;
(f) assistance in the communication of notice of loss and settlement of claims; and
(g) ensuring nomination to be made by the insured;
(h) any matter connected to policy administration service.

Payment of Commission and fees

38.-(1) An agriculture insurance broker or agent shall be entitled to a commission for services rendered.

(2) An agriculture insurance distributor who is not registered as a broker or agent shall be entitled to a fee for services rendered.

- ***IFAD-INSURED Comment:*** *suggested change '2) An agriculture insurance **product** distributor who is not registered as a broker or agent shall be entitled to a fee for services rendered.'*

(3) Commissioner shall determine the rate of commission and fees for the purposes of sub-regulation (1) and (2).

(4) Where the agreement between the agriculture insurance distributor and the insurer is terminated for any reason, no future commission shall be payable.

- ***IFAD-INSURED Comment:*** *suggested change '4) Where the agreement between the agriculture insurance **products** distributor and the insurer is terminated for any reason, no future commission shall be payable.'*

PART VII SETTLEMENT OF CLAIMS

- ***IFAD-INSURED Comment:*** *Part VII will need two sub-sections to deal with (a) Settlement of Claims on Indemnity-based Agriculture Insurance Policies and (b) Procedures for settling Payouts on Index-based Insurance Policies*

- ***IFAD-INSURED Comment:*** *Subtitle added below.*

(a) Settlement of Claims on Indemnity-based Agriculture Insurance Policies

Notice of loss

39.- (1) Where any loss or damage to an insured matter resulting from one or more of the perils insured against and the loss or damage was occasioned at a readily ascertainable time, the insured shall notify the insurer, within the time stipulated in the policy but not more than 48 hours for oral reporting and five days in writing, of such time.

- ***IFAD-INSURED Comment:*** *suggest to adapt to **39**.- (1) Where any loss or damage to **an** insured matter resulting from one or more of the perils insured against and the loss or damage was occasioned at a readily ascertainable time, the insured shall notify the insurer, within the time stipulated in the policy but not more than 48 hours **after the occurrence of the event** for oral reporting and five days in writing, of such time.*

(2)The notice in sub-regulation (1) can be filed on a Notice of Loss form to be provided by the insurer or by any other means considered acceptable by the insurer.

Presumption of communication to the insurer

(3) Any notice of loss or damage communicated through a distributor referred to under regulation 36 shall be deemed to have been communicated to the insurer.

- ***IFAD-INSURED Comment:*** *suggest to adapt to '(3) Any notice of loss or damage communicated **~~through~~ by an agriculture insurance product** distributor referred to under regulation 36 shall be deemed to have been communicated to the insurer.'*

Duties of the insurer

Assessment and adjustment

40.-(1) Upon receipt of such Notice of Loss or damage the insurer shall respond with an assessment of the reported loss or damage in order to verify the existence and extent of the loss or damage.

(2) Where the findings of the assessor so suggest, the insurer may engage an adjuster who shall conduct and complete the adjustment within five days from the date of engagement or completion of the assessment under sub-regulation (3) and (4) whichever come earlier.

- ***IFAD-INSURED Comment****: In Regulation 40(2) to make this consistent with 40(1) and clearer, we suggest amending to the following '(2) Where the findings of the* ***~~assessor so suggest~~*** ***assessment of the Notice of Loss suggest the extent of loss or damage exceeds the policy excess giving rise to a potential claim****, the insurer may engage an adjuster who shall conduct and complete the* ***loss*** *adjustment within five days from the date of engagement or completion of the assessment under sub-regulation (3) and (4) whichever come earlier.'*

(3) The assessment under sub-regulations (1) shall be completed within a period of not more than 15 days from the date of reporting the loss.

- ***IFAD-INSURED Comment****: Given the fact that the Insured (claimant) is required to submit the Notice of Loss within a maximum of 5 days of the occurrence of the loss, to then permit the Insurer up to 15 days to conduct the assessment seems excessively long. The Insurer then has to decide whether or not to appoint a loss adjuster to visit the insured to conduct a loss adjustment and this may lead to further delays of 10 or 15 days or more to conduct the loss adjustment and to submit the loss adjustment report to the Insurer for settlement.*

(4) The Commissioner may upon request by the insurer and based on the reason provided, extend the period in sub-regulation (3) for a period which shall not be more than 15 days.

- ***IFAD-INSURED Comment****: The assumption is that this is to be applied ex-ante for clear and justified reasons, meaning at the approval of the policy or before the start of the covering period, and not after the realization of the loss. May be useful to specify.*

Decision on the claim

(5) The insurer shall determine the claim and provide a written decision to the insured which identifies the payable and non- payable insurable losses and the perils associated therein within three days of completion of the assessment and the adjustment, where applicable.

(6) The insurer shall attach the discharge voucher with the decision in sub-regulation (5) for the admitted claim.

(7) where the claimant requests for clarification on the decision and the offer in sub-regulation (5) and (6, the insurer shall respond within three days of receipt of the request.

Payment of claim

41.- The insurer shall pay the admitted claim within five days from the date of the executed discharge voucher.

Salvage

42.- If any portion of the insured peril is found to be salvaged or sold, the insured shall declare to the insurer such salvage or sale and such salvage or sale amount shall be deducted from the payable sum payable before an indemnity is paid.

Failure to declare

43.- Failure by the insured to declare any salvage or sell shall be construed fraud and shall subject the insured or the beneficiary thereof to conditions applicable to misrepresentation cases as outlined in regulation 44.

Misrepresentation

44.- Where, in respect of an insured subject matter, the insured:

(a) wilfully, makes a false statement or provides documents that wrongfully state the financial or operational independence of the insured;

(b) in the application for insurance or in other documentation provided to the insurer, gives false particulars of the insurable subject matter to the prejudice of the insurer or knowingly misrepresents or fails to disclose any fact required to be stated therein;

(c) contravenes a term or condition of the insurance policy;

(d) commits a fraud;

(e) wilfully makes a false statement in respect of a claim under the agriculture insurance policy;

the policy shall be deemed to be terminated, all premiums shall be deemed to have been earned by the insurer, any claim for indemnity by the insured will be invalid, and the right to recover thereunder will be forfeited.

- ***IFAD-INSURED comment:*** *subtitle added below.*

b) Procedures for Settling Payouts on Index-based Insurance Policies

- ***IFAD-INSURED comment:*** *For the purposes of determining whether the threshold trigger of an index insurance product has been exceeded, thereby leading to a payout, in the request for product approval to be submitted to the Commissioner of Insurance, the insurer must indicate how and by whom will the values of the index underlying the insurance coverage be calculated. The party to carry out such calculations will be identified as the "Calculation Agent". The Commissioner of Insurance will establish if the proposed approach and the selected "Calculation Agent" grant sufficient independence and reliability.*

  The duties of the Calculation Agent will be to:

  - *Routinely access raw or processed data from an accredited supplier (e.g. local meteorological agency, NASA, European Space Agency etc), relating to the contract index*
  - *Process this data in accordance with the index contract / policy wording, terms and conditions to establish the index value for each and every insured unit (IU) during the contract cover period, and*
  - *Where the index value in any insured unit or units deviates from the threshold trigger value (strike) stated in the policy wording giving rise to a payout in that unit or units, immediately to submit a Payout Notification to the Insurer and its reinsurer(s) (and any other named party, as applies) that a payout is due and the amount of payout payable to each Insured in each insured unit where a payout is due, subject to the maximum payout (exit) which is equivalent to the maximum limit of liability or total sum insured.*

  The Insurer will be responsible for calculating the amount that is payable to each Insured within each Insured Unit where a payout has been triggered; for advising each Insured of the amount of payout due to them, and for making the payout directly to the Insured's bank account or to the agriculture insurance products distributor (as agreed) within the stipulated time period of xx days from the time the Calculation Agent has submitted its Payout Notification.

  In the specific case of crop Area Yield Index Insurance (AYII), a suitably qualified company of field inspectors will be appointed to conduct in-field random sampling of crop yields in each Insured Unit (UI) using Crop Cutting Experiment (CCE) methodology to establish the actual average yield per hectare for the insured crop(s) in each and every IU. The appointed field inspectors will submit the average yields for each IU to the Insurer within the time period agreed

between the two parties. Where the actual average yield falls short of the Insured Yield in any IU, each and every insured farmer in that UI will receive a payout calculated as the amount of yield shortfall times the sum inured value per unit of yield times the insured area. The Insurer will then be responsible for settling these payouts directly to each Insured's bank account or to the agriculture insurance products distributor (as agreed) within the stipulated time period of xx days from the time the appointed company of field inspectors has submitted its area yield report to the insurer.

PART VIII HANDLING OF COMPLAINTS

- ***IFAD-INSURED Comment:*** *Parts VIII to XI are all TIRA general insurance regulations which apply equally to (a) subsidized TAIS Business underwritten by the Agro-Consortium and (b) all agricultural insurance, subsidized and non-subsidized, underwritten by non-life insurers in Mainland Tanzania and in Zanzibar.*

Right of complaint

45.- (1). Where the insured is dissatisfied with the service or decision given by the insurer, or has not received a response on a claim lodged with the insurer within the period stipulated under regulation 19, the claimant shall have the right to submit a formal complaint to the Chief Executive Officer of the insurer, describing the nature of the complaint.

(2) The insurer shall resolve a complaint and notify the complainant of the outcome within 5 working days from the date of receipt.

(3) If the insurer is unable to resolve the complaint within the period stipulated under sub-regulation (2), it shall inform the complainant of its inability and reasons thereof.

- ***IFAD-INSURED Comment:*** *point 4 is missing.*

(5) Commissioner may issue guidelines for handling of complaints

Complaint to the Authority

46.(1) The Complainant may lodge a complaint with the Authority where:

Reference of dispute to the Ombudsman

47.-Any dispute arising from agriculture insurance may be referred to the Insurance Ombudsman and for that purposes the relevant provisions in the Insurance Act shall apply.

PART IX. PROTECTION OF THE POLICYHOLDERS

Consumer protection principles

48.- (1) An insurer conducting agriculture insurance business shall comply with the principles of consumer protection as provided for in the applicable laws and in the guidelines to be made under these Regulations.

(2) The Commissioner shall by Guidelines prescribe minimum standards of consumer protection to be observed by insurers transacting agriculture insurance which shall include:

(a) terms and conditions of policy or related service that are transparent, fair, legible and protect the rights and interests of agriculture insurance consumers;

(b) complaint handling and dispute resolution mechanism;

(c) full disclosure of relevant information on the products and services provided;

(d) requirements for the vetting of the wording of the agriculture insurance policy document;

(e) transparency on exclusions, deductibles, fees, and other relevant matters;

(f) agriculture insurance education to the consumers;

(g) any other principle for the purpose of ensuring fair treatment of consumers.

Prohibitions and Measures

49.- (1) Notwithstanding the provisions of sub-regulation (1) and (2) of regulation 48, any term or condition stipulated in a policy of agriculture insurance or any other relevant document purporting to grant to an insurer transacting agriculture insurance business authority to unilaterally introduce or modify the terms and conditions shall be null and void.

(2) where agriculture insurance provider without reasonable cause, fails to comply with the provisions of this section, the Authority shall take such measures as may be appropriate to ensure compliance.

PART X MONITORING AND INSPECTION

Inspection

50.- (1) The Commissioner may cause inspection of the office and records of any insurer, broker or agent transacting agriculture insurance business upon issuing a notice of at least two days.

(2) Where it appears to the Commissioner that the circumstances so justify, may inspect or cause to be inspected the records of agriculture insurance registrant without giving notice.

Variation or suspension of license

51.-(1) The Commissioner may vary, suspend, cancel or revoke any license issued to a registrant transacting agriculture insurance business upon satisfaction that there are contraventions of the provisions of these Regulations, the Act, the Insurance Regulations or any relevant Guidelines.

(2) The Commissioner shall cancel the license of a registrant transacting agriculture insurance business where the registrant applies to the Authority in writing for the cancellation of the license.

(3) The Authority may revoke the authorization of the registrant principal officer or the specified person where the principal officer or specified person contravenes the provisions of these Regulations, the Act, the Insurance Regulations or any relevant Guidelines.

(4) The Authority shall, before revoking a license under regulation 30, issue a notice of revocation of the license to the registrant and comply with other relevant matters provided in the Act.

(5) Notwithstanding this regulation, the Authority may, where the interest of a policy holder is at risk, and the registrant has failed to comply with instructions made by the Commissioner to rectify the defects, revoke a license without notice.

Code of Conducts

52. An insurer, broker or agent conducting agriculture insurance business shall adhere and observe the Code of Conduct and Ethics for Tanzanian Insurance Industry in force at any particular time.

Penalty

53.- The Commissioner may impose a penalty or take any other measure to a registrant transacting agriculture insurance business contrary to law, regulations and governing principles of agriculture insurance business.

PART XI MISCELLANEUS PROVISIONS

- ***IFAD-INSURED Comment**: in the title of PART XI replace "MISCELLANEUS " with "MISCELLANEOUS":*

Participating in Public awareness

54.- (1) An insurer transacting agriculture insurance business shall, in collaboration with the brokers, agent and any other agriculture insurance stakeholder participate in public awareness campaigns aimed at developing the agriculture insurance business.

(2) An insurer shall submit annual plan for implementation of a public awareness campaign referred to under sub-regulation (1) for approval by the Authority by 30th November of the preceding year.

(3) Every insurer transacting agriculture insurance shall set aside budget sufficient for the implementation of public awareness program referred to in subsection (1) and (2).

(4). Every insurer transacting agriculture insurance business shall submit a semi-annual report on implementation of its public awareness programme specified in subsections (1) and (2) in the manner prescribed by the Authority.

(5) For the purposes of this regulation, "public awareness campaigns" shall include advertisements, public exhibitions and public education programmes.

Training of officers

55.- (1) An insurer transacting agriculture insurance business shall be required to train at insurer's expense all designated officers carry on day to day operations of agriculture insurance business.

- ***IFAD-INSURED comment: suggest amend to "***55.- (1) An insurer transacting agriculture insurance business shall be required to train at insurer's expense all designated officers **to** carry ~~on~~ **out** day to day operations of agriculture insurance business.'

(2) For the purposes of sub-regulation (1), the term "designated officers" shall include the officers of non-registered distributors.

Power to issue guidelines

56.- The Authority may issue guidelines for the purpose of implementing the provisions of these Regulations.

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Annex 1. Agricultural Sector Development Programme II (ASDP II) (2017), page 33

Priority commodity selection. Using contributions to national food security, the food import bill and export revenues, and contributions to the value of agricultural production as criteria, few commodities emerged as critical for economic growth and poverty reduction. In terms of contribution to kilocalories of food intake by Tanzanians, maize, cassava, rice and pulses contribute about 53%. In the area of agricultural trade, tobacco (17.6%), cotton (14.5%) and coffee (14.1%) contribute about 46% of the export value. Wheat (31.4%) and palm oil (27.3%) form the main share of total food import value as shown in table 6.

Table 6: Commodities coverage, agricultural production, trade and diet (2005–2010)

Commodity	Share of production value	Share of export value	Share of import value	Share of kcal intake*
Cashew nuts	1.2	6.7	0.0	0.2
Coffee	0.8	14.1	0.0	0.0
Cow milk	7.3	0.0	0.6	2.6
Maize	**6.5**	**0.8**	2.9	**24.3**
Pulses	10.6	7.5	0.7	8.5
Rice	5.2	n.d.	n.d.	9.1
Cotton	2.9	14.5	0.1	n.a.
Sugar	1.2	1.6	8.6	4.0
Wheat	0.2	1.4	**31.4**	5.9
Cassava	*8.2*	***0.0***	***0.0***	***10.5***
Livestock	*12.0*	*[d] 0.1*	*[d] 0.6*	*1.6*
Sorghum/millet	*2.4*	*0.1*	*0.2*	*3.8*
Tea	*0.5*	*6.3*	*0.0*	*0.0*
Bananas	***12.7***	*0.0*	*0.0*	***4.0***
Palm oil	*0.0*	*1.6*	***27.3***	*3.3*
Tobacco	*1.3*	*17.6*	*1.1*	*n.a.*

Source: MAFAP (2013). Review of food and agricultural policies in the United Republic of Tanzania. MAFAP Country Report Series, FAO, Rome, Italy, p 62

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Annex 2: Kenya Draft INDEX INSURANCE REGULATIONS 2015

INSURANCE ACT, NO ……. 2015

INDEX INSURANCE REGULATIONS 2015

IN EXERCISE of the powers conferred by section 171 of the Insurance Act, 2015, the Cabinet Secretary to the National Treasury makes the following Regulations-

Short title and commencement

1. These Regulations may be cited as the Index Based Insurance Regulations, 2015.

Interpretation

2. (1) In these Regulations, unless the context otherwise requires—

"Act" means the Insurance Act, 2015 "approved index insurance contract", means an index insurance contract approved by the Authority[‡];

"basis risk" has the meaning specified in regulation 5;

"index insurance contract" has the meaning specified in regulation 3;

"index microinsurance contract" means an index insurance contract that is also a microinsurance contract [§];

"insurable interest" is construed in accordance with regulation 4;

"insured risk" means the risk or risks stated in the index insurance contract as the risks for which the contract is designed to provide insurance cover;

"licensed insurer" means an insurer holding an insurer's licence issued under the Insurance Act and includes a licensed microinsurer;

"retail policyholder[**]" means a policyholder under a retail index insurance contract;

"retail index insurance policy" means—

(a) an index insurance contract entered into by an individual wholly or mainly for purposes unrelated to the individual's trade, business or profession; or

(b) an index microinsurance contract.

[‡] Given that index insurance is still a developing area, the Regulations require that all index insurance contracts should be subject to supervisory approval.

[§] Not all index insurance is microinsurance. There are many meso level and macro level index insurance policies being sold/piloted around the world.

[**] Policyholder is defined in the draft Insurance Bill to include a beneficiary.

(2) Unless otherwise specified, any word, term or phrase defined in the Insurance Act has the same meaning in these Regulations.

Meaning of "index insurance contract"

3. (1) An index insurance contract is an insurance contract under which, as a result of the occurrence of the insured risk—

(a) the liability of the insurer to make a payment in respect of a stated insured risk is triggered by, and the amount of that payment is determined in accordance with, one or more indices, rather than on an assessment of the policyholder's actual loss; and

(b) the payment is designed to provide a level of compensation, although not necessarily an indemnity, to the policyholder in respect of either or both of the following—

(i) losses, including consequential losses, that the policyholder is expected to suffer, or

(ii) costs, including mitigation costs, that the policyholder is expected to incur.

(2) An index insurance contract may include terms which require the amount of the payment to a policyholder in the event that the insurer's liability to pay is triggered, to be determined by—

(a) the index or indices that trigger the liability to pay;

(b) one or more other indices; or

(c) an assessment or other estimation of adverse impact.

(3) An index insurance contract may be designed such that the index triggers payment by the insurer before the occurrence of the insured risk, where the payment is designed, at least in part, to compensate the policyholder for meeting the costs of preparing for, and mitigating the effect of, the insured risk.

(4) The following are not considered index insurance contracts for the purposes of these Regulations—

(a) life insurance contracts or annuities;

(b) investment linked contracts under which the value of an investment is determined in whole or in part by reference to a financial index or an index of asset values.

Insurable interest

4. (1) For the purposes of these Regulations, a person has an insurable interest in an index insurance contract at the time the contract is entered into if there is a reasonable prospect that, in the event that the liability of the insurer is triggered—

(a) the person will be adversely impacted by the insured risk[††]; and

(b) the adverse impact will be material in relation to that person.

(2) For the purposes of sub-regulation (1), the adverse impact may include—

(a) damage to property;

(b) economic loss;

(c) consequential loss; or

(d) the costs of mitigating the extent of the adverse impact of the insured risk.

(3) The existence of an insurable interest at the time that the contract is entered into is not affected by—

(a) whether a policyholder is adversely affected by the insured risk in the event that the liability of the insurer is triggered; or

(b) whether or not the policyholder owns property that is or may be affected by the insured risk.

Basis risk

5. (1) For the purposes of these Regulations, "basis risk", in relation to a policyholder, is the risk that—

(a) the insured risk occurs, but the liability of the insurer to make a payment to the policyholder is not triggered under the contract;

(b) the liability of the insurer to make a payment to the policyholder is triggered, but the insured risk does not occur;

(c) the insured risk occurs and the liability of the insurer to make a payment to the policyholder is triggered, but either—

(i) the payment made to the policyholder under the contract is materially greater than the adverse impact of the insured risk on the policyholder; or

(ii) subject to subparagraph (2), the payment made to the policyholder under the contract is materially less than the adverse impact of the insured risk on the policyholder.

(2) Where an index insurance contract permits the policyholder to select an insured value, basis risk under sub-regulation (c) ii) may be measured in relation to the insurer's individual rate of loss as compared to the average rate of loss for other policyholders covered by the same index[‡‡].

[††] It is important that an index insurance states the risk against which insurance is being provided.
[‡‡] This is intended to distinguish under insurance from basis risk.

Design criteria for index insurance contract

6. (1) A licensed insurer shall have regard to the following criteria in designing an index insurance contract—

(a) the need to minimising basis risk;

(b) the need to minimise the risk of adverse selection[§§] against the insurer by policyholders;

(c) the need to ensure that the contract is fair to policyholders and provides value to the persons for whom it is designed;

(d) the need to set a maximum sum insured that is not manifestly excessive, taking account of the types and magnitude of the losses and costs likely to be sustained or incurred by policyholders, should an insured risk occur;

(e) the need to ensure that any exclusions are appropriate, given the nature of an index insurance contract; and

(f) the principle that insurance is more efficient as a risk transfer mechanism for covering infrequently occurring, but high impact, risks than for covering frequently occurring low impact risks.

(2) An index used for an index insurance contract shall—

(a) be objective and transparent;

(b) use data that is—

(i) produced or verified by a third party who is independent of the insurer and the policyholder; and

(ii) accessible to the insurer and policyholders;

(c) be supported by data that is sufficient and adequate to enable the insurer to assess its insurance risk and;

(d) enable the liability of the insurer and the amount of the payment due under the contract to be determined in a timely manner.

(3) A licensed insurer shall make, and retain, a written record of the assessment that it has undertaken against the design criteria specified in this Regulation, detailing the basis on which it has made the determination that the contract meets the criteria and how the criteria are met.

[§§] This is considered to be a sufficiently well understood term so as not to require a specific definition.

Requirements for index insurance contracts

7. (1) An index insurance contract—

(a) shall—

(i) provide for the payment to the policyholder of a fixed sum (the sum insured) determined in accordance with the value of one or more stated indices;

(ii) limit the liability of the insurer to a specified maximum sum insured, above which a policyholder cannot purchase insurance cover;

(iii) provide that the contract may only be purchased by persons who have an insurable interest in the specified insured risk and require the policyholder to acknowledge that he or she has an insurable interest, on the date that the contract is entered into;

(iv) require payment of the full premium at the time the contract is entered into or before the policy incepts;

(v) prohibit cancellation of the contract by either party once the policy has incepted, except where the policyholder did not have an insurable interest at the time the contract was entered into;

(vi) provide at least one fall-back methodology for determining the liability of the insurer, and payments payable to the policyholder, in the event that the primary index is not available; and

(vii) specify the process or mechanism for the resolution of any disputes under the contract; and

(b) shall not—

(i) require, or provide for, the assessment of actual loss; or

(ii) permit a grace period for payment of the premium beyond the inception of the policy.

(2) An index insurance contract shall contain the following statements—

(a) a statement that the contract is an index insurance contract approved by the Authority and that it is issued under the Act and these Regulations;

(b) a statement that the contract is intended to provide insurance cover in relation to one or more insured risks, which must be specified in the contract;

(c) a statement that payment under the contract is determined by the value of an index or indices, which must be specified, and not on the basis of actual loss;

(d) a statement of the maximum sum that may be insured under the contract;

(e) a statement that, as the contract is an index insurance contract, there is a risk that—

(i) no payment may be due to the policyholder under the contract, even though the insured event has occurred; or

(ii) in the event that the insured event occurs and the policyholder receives a payment under the contract, the payment may be less than the losses and costs sustained by the policyholder as a result of the occurrence of the insured risk;

(f) a statement that—

(i) if the liability of the insurer to make an insurance payment to the policyholder is triggered, the policyholder may be required to prove that he or she had an insurable interest on the date that the contract was entered into;

(ii) if the policyholder cannot prove an insurable interest on the date that the contract was entered into, the policyholder will not be entitled to receive any payment under the contract; and

(iii) details of the consequences for the policyholder if the insurance contract is purchased, when the policyholder does not have an insurable interest, including any premium, or partial premium, refund that will be made to the policyholder;

(g) a statement that contract cannot be cancelled once it has incepted

(3) Despite sub-regulation (1) and (2), a licensed insurer may, subject to the approval of the Authority, issue a hybrid insurance contract that provides for payment against one or more indices and the provision of other benefits on the basis of actual loss.

(4) An index insurance contract shall specify in clear terms—

(a) the index or indices which—

(i) will trigger the liability of the insurer under the contract; and

(ii) will determine the amount of the payments to be made under the contract;

(b) the source of the data used for each index;

(c) the period that the contract is in force and the period in respect of which cover is provided;

(d) details of the fall-back methodology that will be used if the primary index is not available; and

(e) any exclusions to which the contract is subject.

(5) An index insurance contract should not require the policyholder to make a claim in the event that the index triggers the liability of the insurer to make a payment under the contract but may require the policyholder to prove insurable interest at the time of purchase before payment is made.

(6) An index insurance contract should require the insurer to notify the policyholder within such periods as may be specified in the policy —

(a) if the index triggers the liability of the insurer to make a payment under the contract; and

(b) in the event that the insurer's liability is triggered, the amount of the payment due to the policyholder.

Prohibitions in relation to index insurance

8. (1) A licensed insurer shall not unless the Authority has approved the product in accordance with these Regulations—

(a) market an insurance contract as an index insurance contract, or

(b) enter into or renew an index insurance contract.

(2) Subject to sub-regulation (3), a licensed insurer shall not use in, or in relation to, an insurance contract[***] unless the policy is an index insurance contract—

(a) the word "index" or parametric", or

(b) any word, term, phrase or abbreviation which suggests, or is likely to suggest, that the contract is an index insurance contract.

(3) For the avoidance of doubt, sub-regulation (2) does not apply in relation to a contract that is not an insurance contract provided that the contract is being sold or marketed in accordance with the Insurance Act and any applicable Regulations[†††].

Approval of index insurance contract

9. (1) A licensed Insurer shall apply to the Authority for approval of an index insurance contract by completing a written application in the specified form, accompanied by the following—

(a) an application in the form specified by the Authority[‡‡‡];

(b) the index insurance contract for which approval is sought, together with the policy document;

[***] This has deliberately been restricted to "insurance contracts" so as not to affect derivatives. See sub-regualtion (3).
[†††] It will be necessary to preserve the position with respect to the purchase and sale of derivatives by insurers (if and to the extent permitted). However, this would be covered under the main Insurance Regulations. It would be expected that the sale of derivatives by insurers, either generally or to retail policyholders would be prohibited by the main Insurance Regulations.
[‡‡‡] The application form is a critical document as it will set out the details required to be provided. It is so important that it may be considered as an annex to the Regulations.

(c) if the contract will be issued as a retail insurance contract, a Key Features Statement for the contract[§§§];

(d) the written record of assessment made by the insurer under regulation 6 (3); and

(e) such other information and documentation as the Authority may require.

(2) The Authority may, before making a final determination on the application, require the licensed insurer to provide additional information and documentation and may require the licensed insurer to obtain and provide reports from actuaries and other specialists to support the application.

(3) The Authority may approve the application and register the index insurance contract if it is of the opinion that the contract complies with the requirements of these Regulations.

(4) The Authority may refuse to approve the application if it is of the opinion that the contract does not meet any of the design criteria specified in regulation 6.

Revocation of approval of index insurance contract

10. (1) The Authority may, by written notice, revoke its approval of an index insurance contract if it is of the opinion that—

(a) the contract does not satisfy the design criteria specified in regulation 6;

(b) the policy does not meet the requirements specified in section 7;

(c) the licensed insurer is marketing or selling the contract contrary to any requirements of the Act or these Regulations; or

(d) the contract is unfair to policyholders or prospective policyholders or any class of policyholders or prospective policyholders.

(2) If the Authority issues a written notice of revocation under sub-regulation (1), the licensed insurer concerned shall cease to market or sell the contract with effect from the date on which it receives notice of revocation.

(3) The revocation of approval does not invalidate or affect any index insurance contract sold prior to the date of revocation.

Requirements in relation to insurable interest

11. (1) Subject to sub-regulation (2), a licensed insurer is not required to investigate whether a prospective policyholder has an insurable interest in the contract at the time of purchase.

[§§§] This assumes that the Insurance Regulations will require insurers to prepare and issue a key features statement (or equivalent) with a retail insurance contract (as envisaged by the Regulation making power in the Insurance Bill).

(2) Despite sub-regulation (1), a licensed insurer shall not sell an index insurance contract to a person that it knows, or has reasonable grounds for knowing, does not have an insurable interest in the contract.

(3)A policyholder is not required to have an insurable interest at the time when the payment is made.

(4) A licensed insurer shall provide prospective policyholders with—

(a) an explanation of insurable interest and, in the case of a retail index insurance contract, shall provide guidance as to how, in relation to the particular contract, a prospective policyholder can determine whether or not he or she has an insurable interest;

(b) details of the consequences of purchasing an index insurance contract without an insurable interest, including details of any premium, or partial premium, refund that will be made to the policyholder.

Periodic assessments

12. (1) A licensed insurer shall—

(a) undertake periodic assessments of any approved index insurance product that it sells or markets against the design criteria specified in regulation 6; and

(b) shall make a written record of each periodic assessment undertaken.

(2) A periodic assessment shall be undertaken at such period as may be determined by the Authority, unless the Authority permits less frequent assessments.

(3) A licensed insurer shall provide the Authority with a copy of each periodic assessment undertaken.

Reports and approvals

13. (1) A licensed insurer shall submit such reports relating to its index insurance products to the Authority as it may require.

(2) A licensed insurer shall not, without the written approval of the Authority, make a material amendment to an index insurance contract, including to the index used, the basis for calculating the premium or the basis for the making of payments under the contract[****].

Application of Microinsurance Regulations

14. The Microinsurance Regulations apply to an index insurance contract that is also a microinsurance contract, except to the extent otherwise provided by these Regulations or that these Regulations are inconsistent with the Microinsurance Regulations.

[****] Alternatively, changes to the contract could be submitted to the Authority on a file and use basis.

Technical Note 3

Roadmap for the Development and Implementation of the Tanzania Agriculture Insurance Scheme

Table of Contents

1. Context and objectives

This Technical Note has the objective of providing the Tanzania Insurance Regulatory Authority (TIRA) and the Government of the United Republic of Tanzania (GOT) with a reference Roadmap for the development and implementation of the Tanzania Agriculture Insurance Scheme (TAIS).

While the other Technical Notes describe in more detail the features of agricultural insurance, and the organizational and regulatory requirements for a national agricultural insurance scheme in the context of the United Republic of Tanzania (Tanzania), the specific purpose of this Technical Note is to provide information and considerations that can allow the TAIS stakeholders to carry out the work required to develop and implement the foreseen agricultural insurance policies.

The following section presents the main tasks listed in the Roadmap together with the proposed timelines. Annex 2 contains the Roadmap itself.

2. TAIS Roadmap: Workplan and Timeline

Structure of the Roadmap

The Roadmap covers the period from September 2023 to the end of 2030 and is structured in the following points under which tasks and activities are grouped that will need to be performed in the planning and design, implementation and scale-up of TAIS over this eight-year period:

1. TAIS INSTITUTIONAL FRAMEWORK
2. TAIS NATIONAL POLICY
3. FINANCIAL SUPPORT FOR THE TAIS FROM 2024 to 2030
4. REGULATION FOR AGRICULTURAL INSURANCE
5. INDUSTRY MARKET ARRANGEMENTS FOR AGRICULTURAL INSURANCE
6. PRODUCT DESIGN AND IMPLEMENTATION
7. MONITORING & EVALUATION and AUDIT
8. PRODUCT DESIGN AND IMPLEMENTATION WORKSTREAMS (to be developed for each type of insurance product)

The paragraphs that follow provide a summarized description of the activities listed in the Roadmap.

1: TAIS INSTITUTIONAL FRAMEWORK

The development of the TAIS should start with the set-up of the TAIS Institutional Framework. IFAD-INSURED Technical Note 1 “Guidance Note on the Development of an Institutional Framework for the Tanzania Agricultural Insurance Scheme” provides specific recommendations on the type of institutional framework that could suit the needs of Tanzania. The note recommends structuring the framework around a High-level Steering Committee, an Intergovernmental Technical Support Unit, and a joint Public-Private Technical Committee. Significant progress has been achieved on this side: under the leadership of TIRA, a Steering Committee and a Technical Committee have been already set up. Technical Note 1 also presented potential market coordination mechanisms for the insurance industry. As indicated in point 5 of the Roadmap, this has been addressed with the formation of the Tanzania Agricultural Insurance Consortium (TAIC) that was launched on the 1st of July 2023.

A critical activity for allowing the TAIS Institutional Framework to function effectively is the identification of sources and amounts of funding for operating TAIS institutions, and this is a key activity to be carried out in the immediate future.

The timeframe suggested for carrying out tasks related to point 1 of the Roadmap is between September and December 2023.

Figure 1. TAIS INSTITUTIONAL FRAMEWORK. Tasks and timeline

			2023				2024	
Code	Item	Responsibility	Sep	Oct	Nov	Dec	Jan	Feb
1	TAIS INSTITUTIONAL FRAMEWORK							
1.1	Establish the TAIS Institutional Framework, potentially composed by a High-level Steering Committee, an Intergovernmental Technical Support Unit , and a joint Public-Private Technical Committee (see IFAD-INSURED Technical Note 1)	TIRA, GOT						
1.2	Identify funding sources and amounts for operating TAIS institutions	TIRA, GOT						

2: TAIS NATIONAL POLICY

In parallel to the establishment of the TAIS Institutional Framework under point 1 of the Roadmap, particular care should be provided by the relevant line ministries – in particular by the Ministry of Agriculture (MOA), the Ministry of Livestock and Fisheries (MOLF) – in the definition of the TAIS policy environment. Parameters such as the farmers to be targeted; the sectors and the specific commodities to be covered; government policy towards TAIS premium subsidies and other types of financial support to TAIS; the retail/distribution linkages for TAIS insurance policies to be adopted, are all items that need clear policy guidelines. Such guidelines will then also inform the Regulation on Agricultural Insurance (point 4 of the Roadmap) to be enacted by the Commissioner of Insurance.

The timeframe suggested for carrying out tasks related to point 2 of the Roadmap is between September and December 2023.

Figure 2. TAIS NATIONAL POLICY. Tasks and timeline

Code	Item	Responsibility	Sep	Oct	Nov	Dec	Jan	Feb
2	TAIS NATIONAL POLICY							
2.1	Develop TAIS National Policy specifying the parameters of the program, including: • Identification of target farmers for TAIS support • Identification of target sectors and commodities for TAIS support • Identification of retail/distribution linkages between TAIS insurance policies and other government programs for agriculture, including natural disaster relief, subsidised input supply and credit • Proposals for TAIS policy towards premium subsidies and other types of financial support	TIRA, MOA, MOLF						

3: FINANCIAL SUPPORT FOR THE TAIS FROM 2024 to 2030

In addition to the funding for operating TAIS institutions mentioned in point 1, and on the basis of the TAIS policy guidelines discussed in point 2, the relevant line ministries and government institutions should coordinate to allocate budget for: a) financial support for the purchase of insurance (i.e., premium subsidies); b) other financial support for data strengthening, awareness creation, farmer registration, livestock identification, etc. To this end, IFAD-INSURED Technical Note 4 “Tanzania Agricultural

Insurance Scheme: Projected Insurance Uptake and Fiscal Costs 2024 to 2030" provides a detailed analysis of the funding potentially required.

A critical related activity is the development of systems and procedures for managing premium subsidy disbursements and the identification of the institution that will manage premium subsidy payments to insurers and monitor and audit subsidy payments. This is very important in order to allow the system to operate in a coordinated and transparent way.

Given the significant fiscal impact of supporting the national program on agricultural insurance, GOT may also want to engage in exploring potential donor support for premium subsidies and other activities.

The timeframe suggested for carrying out tasks related to point 3 of the Roadmap is between September 2023 and February 2024.

Figure 3. FINANCIAL SUPPORT FOR THE TAIS FROM 2024 to 2030. Tasks and timeline

			2023				2024			
Code	Item	Responsibility	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
3	FINANCIAL SUPPORT FOR TAIS FROM 2024 to 2030									
3.1	Based on National Policy decisions in point 2. and on IFAD-INSURED Technical Note 4, review uptake and costing projections and submit to relevant line ministries and government institutions to allocate budget for: - Premium subsidies - Other financial support for data strengthening, awareness creation, farmer registration, livestock identification using tagging or RFID technology etc)	MOF, MOA, MOLF, TIRA								
3.2	Design systems and procedures for managing premium subsidy disbursements and identify the entity that will manage premium subsidy payments to insurers and monitor and audit subsidy payments	TAIS, MOF, TIRA								
3.3	Explore potential donor support for premium subsidies and other activities	TAIS, MOF, TIRA								

4: REGULATIONS FOR AGRICULTURAL INSURANCE

Based on the policy decisions discussed in point 2, and on IFAD-INSURED Technical Note 2 "Technical Review of the TIRA 2019 Draft Agriculture Insurance Regulations" TIRA could revise the Agricultural Insurance Draft Regulations of 2019 and enact the definitive text. As suggested in Technical Note 2, the Regulations could take a broad and comprehensive approach, covering both subsidized and non-subsidized agricultural insurance products. With respect to the enhancement of the 2019 Draft, specific care should be put into adding provisions for index insurance. Also, addition of regulations for Sharia-compliant agricultural insurance market development could be considered and included.

Given the need to constantly monitor and update the TAIS operational mechanisms, TAIS institutions could consider issuing "Annual Agricultural Insurance Plans", as happens in the main agricultural insurance programs around the world. This may also allow the Regulations on Agricultural Insurance to cover the general features of agricultural insurance, leaving to the TAIS annual plans the definition of the more operational details and the uptake projections and government budget for premium subsidies and other support costs for the forthcoming year.

The timeframe suggested for carrying out the preparatory tasks related to point 4 of the Roadmap is January to February 2024, following the completion of the tasks for points 1 and 2. The potential "Annual Agricultural Insurance Plans" could be issued before the start of the year the plan relates to.

Figure 4. REGULATIONS FOR AGRICULTURAL INSURANCE. Tasks and timeline

			2023				2024				
Code	Item	Responsibility	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
4	REGULATIONS FOR AGRICULTURAL INSURANCE										
4.1	Based on National Policy decisions in point 2. and on IFAD-INSURED Deliverable 2, revise and enact Agricultural Insurance Draft Regulations, covering both subsidised and other non-subsidised agri-insurance products, and adding provisions for index insurance (if required, study potential for Sharia compliant agricultural insurance market development).	TIRA									
4.2	Develop "Annual Agricultural Insurance Plans" to define and update the operational details of the TAIS programs for each year.	TAIS INSTITUTIONS					TO BE ISSUED BEFORE THE START OF THE YEAR THE PLAN RELATES TO				

5: DEVELOP INDUSTRY MARKET ARRANGEMENTS FOR AGRICULTURAL INSURANCE

Under the guidance of TIRA and the coordination of the Association of Tanzania Insurers (ATI), and with the objective of developing and scaling up the market for agricultural insurance, the insurance industry of Tanzania has decided to form the Tanzania Agricultural Insurance Consortium (TAIC). The TAIC will be responsible for underwriting the TAIS. The TAIC is comprised of fifteen non-life insurance companies and was launched on the 1st of July 2023 at an official ceremony led by the Minister for Agriculture, Hon. Hussein Bashe. Hence, this point of the Roadmap has been addressed.

Figure 5. INDUSTRY MARKET ARRANGEMENTS FOR AGRICULTURAL INSURANCE. Tasks and timeline

			2023				2024	
Code	Item	Responsibility	Sep	Oct	Nov	Dec	Jan	Feb
5	INDUSTRY MARKET ARRANGEMENTS FOR AGRICULTURAL INSURANCE	Activity completed. The insurance industry has established the TAIC						

6. PRODUCT DESIGN AND IMPLEMENTATION

With the objective of distributing TAIS policies to farmers as soon as possible, whilst institutional framework, funding, and regulatory aspects of the TAIS are being addressed, the design and testing of TAIS agricultural insurance products (policies) should also begin in 2023. This is one the most complex and relevant set of activities covered in the Roadmap, and the success of the program will be heavily dependent on how these are carried out.

It is important to highlight that in Tanzania, the insurance industry is already active in retailing and implementing different types of agricultural insurance products (e.g. NPCI, MPCI, AYII). However, the TAIS will provide the industry with the opportunity to revise, improve and retail products in different and more competitive ways. Hence, although there is a significant amount of experience and expertise in the Tanzanian agricultural insurance market, integrating product development in the TAIS process will allow the industry to improve the supply of agricultural insurance and increase its penetration.

The steps suggested by IFAD-INSURED for crop, livestock, aquaculture and forestry insurance product design and implementation under the TAIS are the following:

- In the framework of the "joint Public-Private Technical Committee", allow the TAIC to liaise with the other TAIS stakeholders to specify industry requirements for design and implementation of agricultural insurance policies. In particular, it would be critical that the TAIC and other stakeholders coordinate

on who will carry out product design, and if and how external expertise can contribute to the product development process.

- Coordinate with international development partners that can provide funding and expertise in product design and implementation – this is strictly related to the point above in which the TAIC should first indicate their interest and availability in cooperating with international partners that can support the product design and implementation process.
- Carry out detailed surveys with farmer focus groups to examine the risks to be covered and the loss histories in the various regions. This is a fundamental activity to achieve good product design, in particular for index insurance programs, and government staff or dedicated service providers should be mandated to carry out such tasks.
- Carefully identify programs to which insurance can be linked (e.g., input subsidy programs, agricultural credit) to grant appropriate scale-up of insurance products. Even if appropriate institutional settings and financial support are made available, the program is unlikely to reach scale if distribution links are not properly established.

- Design, test and implement the following insurance products:
  - Area Yield Index Insurance (AYII) and other indices for food crops
  - Named Peril Crop Insurance (NPCI) for cash crops
  - Dairy Cattle indemnity insurance
  - Index Based Livestock Insurance (IBLI) for pastoralists (based on NDVI or other indices)
  - Aquaculture insurance (Named Peril Indemnity)
  - Forestry insurance (Fire FLEXA)

To avoid overloading the TAIS system, IFAD-INSURED proposes to follow a gradual approach, in which the design and implementation activities of the different products are spread over time, in the order in which the products are listed above. **The sequence and timing proposed by IFAD-INSURED are clearly tentative suggestions and the definition of the actual progression should be left to TAIS stakeholders.**

The timeframe suggested for carrying out tasks related to point 6 of the Roadmap is between September 2023 and January 2024 for the coordination and planning activities, and between 2023 and 2027 for the implementation of all product typologies. In the Roadmap tables the preliminary design and testing activities that are foreseen for all products are highlighted in orange.

Figure 6. PRODUCT DESIGN AND IMPLEMENTATION. Tasks and timeline

			2023				2024		
Code	Item	Responsibility	Sep	Oct	Nov	Dec	Jan	Feb	Mar
6	PRODUCT DESIGN AND IMPLEMENTATION								
6.1	Coordinate with the Tanzania Agricultural insurance Consortium within the "joint Public-Private Technical Committee" to identify industry requirements for design and implementation of agricultural insurance policies	TIRA, TAIC, ATI							
6.2	Coordinate with international development partners for funding and expertise in product design and implementation	TIRA, TAIC							
6.3	Carry out detailed surveys with focus groups discussions to examine the risks to be covered and the loss histories in the various regions (this is critical for good product design)	APPOINTED RESEARCH INSTITUTION / PRODUCT DESIGNERS							
6.4	Carefully identify programs to which insurance can be linked (e.g.input subsidy programs, agricultural credit, etc.) to guarantee appropriate scale up of insurance products	MOA, MOLF, TIRA, TADB, COMMERCIAL BANKS							

			2023				2024				2025		2026		2027	2028	2029	2030
Code	Item	Responsibility	Sep	Oct	Nov	Dec	1st Q	2nd Q	3rd Q	4th Q	1st S	2nd S	1st S	2nd S				
6.5	**A) Policy design and testing (ORANGE) + B) full implementation (YELLOW) for the following covers:**	APPOINTED PRODUCT DESIGNERS, TAIC																
6.5.1	- AYII (and other indices) for food crops																	
6.5.2	- NPCI for cash crops																	
6.5.3	- Dairy Cattle indemnity insurance																	
6.5.4	- IBLI for pastoralists (based on NDVI or other insdices)																	
6.5.5	- Aquaculture (Named Peril Indemnity)																	
6.5.6	- Forestry (Fire FLEXA)																	

With respect to product design and implementation, the Roadmap also provides example work plans that are specific to three of the key products that should be developed: i) AYII for food crops, ii) Weather/vegetation index insurance for food crops; iii) IBLI for pastoralists. Annex 1 presents the lists of activities for these products. Such examples of product design and implementation work plans need to be reviewed and validated by TAIS stakeholders and then developed for all TAIS products.

7. MONITORING & EVALUATION and AUDIT

Finally, crucial elements of an agricultural insurance program are Monitoring & Evaluation (M&E), and Auditing. An M&E system is a key requirement to track the performance and implementation progress of an agricultural insurance program. The implementation of an M&E system allows assessment of the program's inputs and outputs, timeliness, effectiveness, and impact; it also facilitates information-sharing, decision-making and periodical reviews to address any new challenges and emerging issues. Equally important, appropriate auditing procedures are fundamental for guaranteeing the transparent and correct use of fiscal resources allocated to support the TAIS. The tasks to be carried out can be segmented between the development and testing of both the TAIS M&E and Auditing systems from December 2023 to March 2024, followed by their implementation starting in April 2024.

Figure 7. MONITORING & EVALUATION and AUDIT

			2023				2024												2025				2026		2027		2028		2029		2030	
Code	Item	Responsibility	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	1st Q	2nd Q	3rd Q	4th Q	1st S	2nd S	1st S	2nd S	1st S	2nd S	1st S	2nd S	1st S	2nd S
7	**MONITORING & EVALUATION and AUDIT**																															
7.1	Develop and test TAIS Monitoring & Evaluation framework	TAIS INSTITUTIONS																														
7.2	Develop and test TAIS Audit Protocols																															
7.3	Implement TAIS Monitoring & Evaluation framework																															
7.4	Implement TAIS Audit Protocols																															

ANNEX 1: Examples of Product Design and Implementation Work Plans

TAIS AGRICULTURAL INSURANCE ROADMAP: WORK PLAN & TIMELINE		
8	**DESIGN AND IMPLEMENTATION OF AREA YIELD INDEX INSURANCE (AYII) FOR FOOD CROPS**	
8.1	**Identify target counties and commodities (the initial crop suggested is maize)**	**MOA, TAIS**
8.2	**Carry out detailed surveys with farmer focus groups to examine the loss histories in the various regions (this is critical for good product design)**	**APPOINTED SERVICE PROVIDER/PRODUCT DESIGNERS**
8.3	**Crop Yield Data Study and Training in Crop-Cutting Experiments (CCEs)**	**APPOINTED SERVICE PROVIDER/PRODUCT DESIGNERS**
8.3.1	- Develop Yield Data Management Framework (define how data will be collected, managed, audited, transferred to insurers and Government, and financed)	
8.3.2	- Test of Yield Data Management Framework for maize	
8.3.3	- Study on data (including CCEs) and insurance units for maize	
8.3.4	- Training in CCEs, and application of technology	
8.4	**Crop AYII Product Design & Planning of Operational Systems and Procedures**	**APPOINTED PRODUCT DESIGNERS, TAIC, INSURERS AND REINSURERS**
8.4.1	- Product design and rating	
8.4.2	- Develop operating systems and procedures (underwriting claims, business processes, collection of premiums)	
8.4.3	- Insurance and reinsurance planning	
8.5	**Identify appropriate linkages with distribution channels (credit, input programs, etc.)**	**TAIS, TAIC, MOA, TADB, COMMERCIAL BANKS**
8.6	**Implementation Planning and Program Launch**	**TAIC, INSURERS, DISTRIBUTION CHANNELS**
8.6.1	- Launch date	
8.6.2	- Awareness creation/education	**TRAINING/ DISSEMINATION AGENT**
8.6.3	- Marketing & Sales of Individual Farmer Crop AYII Insurance Cover Linked to Credit and/or to Input Subsidy Program	**INSURERS, DISTRIBUTION CHANNELS**
8.6.4	- Inception of cover date	**TAIC, INSURERS**
8.6.5	- Implement Area-based Yield estimation CCEs	**MOA or SERVICE PROVIDER**
8.6.6	- Implement M&E framework	**TAIS**
8.6.7	- Expand to other food field crops (e.g. sorghum, millet, rice, cassava, etc)	**TAIC, INSURERS**

9	**DESIGN AND IMPLEMENTATION OF OTHER INDEX INSURANCE TYPES FOR FOOD CROPS (E.G. WEATHER/VEGETATION INDEX INSURANCE)**	
9.1	**Identify target counties and commodities**	**MOA, TAIS**
9.2	**Carry out detailed surveys with farmer focus groups to examine the risks to be covered and the loss histories in the various regions (this is critical for good product design)**	**APPOINTED SERVICE PROVIDER/PRODUCT DESIGNERS**
9.3	**Collect Crop Yield Data for selected crops in target counties**	**APPOINTED SERVICE PROVIDER/PRODUCT DESIGNERS**
9.3.1	- On the basis of the risks identified, select the appropriate source of weather and vegetation indices from remote sensing and/or from ground measurement	
9.3.2	- Develop Data Management Framework (define how data will be collected, managed, audited, transferred to insurers and Government, and financed)	
9.4	**Product Design & Planning of Operational Systems and Procedures**	**APPOINTED PRODUCT DESIGNERS, TAIC, INSURERS AND REINSURERS**
9.4.1	- Product design and rating	
9.4.2	- Develop operating systems and procedures (underwriting claims, business processes, collection of premiums)	
9.4.3	- Insurance and reinsurance planning	
9.4.4	- Identify and appoint index "calculation agent"	**TAIS, TIRA**
9.5	**Identify appropriate linkages with distribution channels**	**TAIS, TAIC, MOA, TADB, COMMERCIAL BANKS**
9.6	**Implementation Planning and Program Launch**	**TAIC, DISTRIBUTION CHANNELS**
9.6.1	- Launch date	
9.6.2	- Awareness creation/education	**TRAINING/ DISSEMINATION AGENT**
9.6.3	- Marketing & Sales of Individual Farmer Crop Index Insurance Cover	**INSURERS, DISTRIBUTION CHANNELS**
9.6.4	- Inception of cover date	**TAIC, INSURERS**
9.6.5	- Implement data collection and verification for settlement	**SERVICE PROVIDER**
9.6.6	- Implement M&E framework	**TAIS**

10	**DESIGN AND IMPLEMENTATION OF INDEX BASED LIVESTOCK INSURANCE (IBLI)**	
10.1	**Identify and register beneficiaries of IBLI scheme**	**MOLF, SERVICE PROVIDER**
10.1.1	- Define target beneficiaries	
10.1.2	- Registration process	
10.2	**Carry out detailed surveys with beneficiary focus groups to examine the risks to be covered and the loss histories in the various regions (this is critical for good product design)**	**APPOINTED RESEARCH INSTITUTION/PRODUCT DESIGNERS**
10.3	**Product Design & Planning of Operational Systems and Procedures for large scale IBLI Program based on NDVI or other indices**	**APPOINTED PRODUCT DESIGNERS, TAIC, INSURERS AND REINSURERS**
10.3.1	- Product design & rating	
10.3.2	- Develop operating systems and procedures (underwriting, claims, business processes, collection of premiums)	
10.3.3	- Insurance and reinsurance planning	
10.3.4	- Identify and appoint index "calculation agent"	
10.4	**Implementation Planning and Program Launch**	**TAIC, DISTRIBUTION CHANNELS**
10.4.1	- Launch date	
10.4.2	- Awareness creation/education	**TRAINING/ DISSEMINATION AGENT**
10.4.3	- Marketing & Sales of voluntary individual IBLI	**INSURERS, DISTRIBUTION CHANNELS**
10.4.4	- Inception of cover date	**TAIC, INSURERS**
10.4.5	- Implement data collection and verification for settlement	**SERVICE PROVIDER**
10.4.6	- Implement M&E framework	**TAIS**

ANNEX 2: TAIS Roadmap

TAIS AGRICULTURAL INSURANCE ROADMAP: WORK PLAN & TIMELINE

			2023				2024												2025				2026		2027		2028		2029		2030	
Code	Item	Responsibility	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	1st Q	2nd Q	3rd Q	4th Q	1st S	2nd S	1st S	2nd S	1st S	2nd S	1st S	2nd S	1st S	2nd S
1	TAIS INSTITUTIONAL FRAMEWORK																															
1.1	Establish the TAIS Institutional Framework, potentially composed by a High-level Steering Committee, an Intergovernmental Technical Support Unit , and a joint Public-Private Technical Committee (see IFAD-INSURED Technical Note 1)	TIRA, GOT																														
1.2	Identify funding sources and amounts for operating TAIS institutions	TIRA, GOT																														
2	TAIS NATIONAL POLICY																															
2.1	Develop TAIS National Policy specifying the parameters of the program, including: • Identification of target farmers for TAIS support • Identification of target sectors and commodities for TAIS support • Identification of retail/distribution linkages between TAIS insurance policies and other government programs for agriculture, including natural disaster relief, subsidised input supply and credit • Proposals for TAIS policy towards premium subsidies and other types of financial support	TIRA, MOA, MOLF																														
3	FINANCIAL SUPPORT FOR TAIS FROM 2024 to 2030																															
3.1	Based on National Policy decisions in point 2. and on IFAD-INSURED Technical Note 4, review uptake and costing projections and submit to relevant line ministries and government institutions to allocate budget for: - Premium subsidies - Other financial support for data strengthening, awareness creation, farmer registration, livestock identification using tagging or RFID technology etc)	MOF, MOA, MOLF, TIRA																														
3.2	Design systems and procedures for managing premium subsidy disbursements and identify the entity that will manage premium subsidy payments to insurers and monitor and audit subsidy payments	TAIS, MOF, TIRA																														
3.3	Explore potential donor support for premium subsidies and other activities	TAIS, MOF, TIRA																														
4	REGULATIONS FOR AGRICULTURAL INSURANCE																															
4.1	Based on National Policy decisions in point 2. and on IFAD-INSURED Technical Note 2, revise and enact Agricultural Insurance Draft Regulations, covering both subsidised and other non-subsidised agri-insurance products, and adding provisions for index insurance (if required, study potential for Sharia compliant agricultural insurance market development).	TIRA																														
4.2	Develop "Annual Agricultural Insurance Plans" to define and update the operational details of the TAIS programs for each year.	TAIS INSTITUTIONS					TO BE ISSUED BEFORE THE START OF THE YEAR THE PLAN RELATES TO											For '25				For '26		For '27		For '28		For '29		For '30		
5	INDUSTRY MARKET ARRANGEMENTS FOR AGRICULTURAL INSURANCE	Activity completed. The insurance industry has established the Tanzania Agricultural Insurance Consortium that was launched on the 1st of July 2023																														

			2023				2024												2025				2026		2027		2028		2029		2030	
Code	Item	Responsibility	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	1st Q	2nd Q	3rd Q	4th Q	1st S	2nd S	1st S	2nd S	1st S	2nd S	1st S	2nd S	1st S	2nd S
6	PRODUCT DESIGN AND IMPLEMENTATION																															
6.1	Coordinate with the Tanzania Agricultural insurance Consortium within the "joint Public-Private Technical Committee" to identify industry requirements for design and implementation of agricultural insurance policies	TIRA, TAIC, ATI																														
6.2	Coordinate with international development partners for funding and expertise in product design and implementation	TIRA, TAIC																														
6.3	Carry out detailed surveys with focus groups discussions to examine the risks to be covered and the loss histories in the various regions (this is critical for good product design)	APPOINTED RESEARCH INSTITUTION / PRODUCT DESIGNERS																														
6.4	Carefully identify programs to which insurance can be linked (e.g.input subsidy programs, agricultural credit, etc.) to guarantee appropriate scale up of insurance products	MOA, MOLF, TIRA, TADB, COMMERCIAL BANKS																														
6.5	A) Policy design and testing (ORANGE) + B) full implementation (YELLOW) for the following covers:	APPOINTED PRODUCT DESIGNERS, TAIC																														
6.5.1	- AYII (and other indices) for food crops																															
6.5.2	- NPCI for cash crops																															
6.5.3	- Dairy Cattle indemnity insurance																															
6.5.4	- IBLI for pastoralists (based on NDVI or other insdices)																															
6.5.5	- Aquaculture (Named Peril Indemnity)																															
6.5.6	- Forestry (Fire FLEXA)																															
7	MONITORING & EVALUATION and AUDIT																															
7.1	Develop and test TAIS Monitoring & Evaluation framework	TAIS INSTITUTIONS																														
7.2	Develop and test TAIS Audit Protocols																															
7.3	Implement TAIS Monitoring & Evaluation framework																															
7.4	Implement TAIS Audit Protocols																															

			2023				2024												2025				2026		2027		2028		2029		2030	
Code	Item	Responsibility	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	1st Q	2nd Q	3rd Q	4th Q	1st S	2nd S	1st S	2nd S	1st S	2nd S	1st S	2nd S	1st S	2nd S
8	DESIGN AND IMPLEMENTATION OF "AREA YIELD INDEX INSURANCE" FOR FOOD CROPS		Note: AYII is already implemented in Tanzania and insurance companies will likely continue to retail it and service it. The timeplan presented below refers to the broader coordinated PPP initiative in which TAIS can develop a participatory system for operating AYII products.																													
8.1	Identify target counties and commodities (the initial crop suggested is maize)	MOA, TAIS																														
8.2	Carry out detailed surveys with farmer focus groups to examine the the loss histories in the various regions (this is critical for good product design)	APPOINTED SERVICE PROVDIER/ PRODUCT DESIGNERS																														
8.3	Crop Yield Data Study and Training in Crop-Cutting Experiments																															
8.3.1	- Develop Yield Data Management Framework (define how data will be collected, managed, auditied, transferred to insurers and Government, and financed)	APPOINTED SERVICE PROVIDER / PRODUCT DESIGNERS																														
8.3.2	- Test of Yield Data Management Framework for maize																															
8.3.3	- Study on data (including crop cutting experiments) and insurance units for maize						Harvest Short Rains					Harvest Long Rains & Unimodal																				
8.3.4	- Training in Crop Cutting Experiments (CCEs), and application of technology						Harvest Short Rains					Harvest Long Rains & Unimodal																				
8.4	Crop Area-Yield Index Insurance Product Design & Planning of Operational Systems and Procedures	APPOINTED PRODUCT DESIGNERS, TAIC, INSURERS AND REINSURERS																														
8.4.1	- Product design and rating																															
8.4.2	- Develop operating systems and procedures (underwriting claims, business processes, collection of premiums)																															
8.4.3	- Insurance and reinsurance planning																															
8.5	Identify appropriate linkages with distribution channels (credit, input programs, etc.)	TAIS, TAIC, MOA, TADB, COMMERCIAL BANKS																														
8.6	Implementation Planning and Program Launch	TAIC, INSURERS, DISTRIBUTION CHANNELS																														
8.6.1	- Launch date																															
8.6.2	- Awareness creation / education	TRAINING / DISSEMINATION AGENT																														
8.6.3	- Marketing & Sales of Individual Farmer Crop AYII Insurance Cover Linked to Credit and/or to Input Subsidy Program	INSURERS, DISTRIBUTION CHANNELS																														
8.6.4	- Inception of cover date	TAIC, INSURERS																														
8.6.5	- Implement Area-based Yield estimation crop cutting experiments (CCEs)	MOA or SERVICE PROVIDER																														
8.6.6	- Implement Monitoring & Evaluation framework	TAIS																														
8.6.7	- Expand to other food field crops (e.g. sorghum, millet, rice, cassava, etc)	TAIC, INSURERS																														

			2023				2024												2025				2026		2027		2028		2029		2030	
Code	Item	Responsibility	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	1st Q	2nd Q	3rd Q	4th Q	1st S	2nd S	1st S	2nd S	1st S	2nd S	1st S	2nd S	1st S	2nd S
9	DESIGN AND IMPLEMENTATION OF OTHER INDEX INSURANCE TYPES FOR FOOD CROPS (E.G. WEATHER/VEGETATION INDEX INSURANCE)																															
9.1	Identify target counties and commodities	MOA, TAIS																														
9.2	Carry out detailed surveys with farmer focus groups to examine the risks to be covered and the loss histories in the various regions (this is critical for good product design)	APPOINTED SERVICE PROVIDER / PRODUCT DESIGNERS																														
9.3	Collect Crop Yield Data for selected crops in target counties																															
9.3.1	- On the basis of the risks identified, select the appropriate source of weather and vegetation indices from remote sensing and/or from ground measurement	APPOINTED SERVICE PROVIDER / PRODUCT DESIGNERS																														
9.3.2	- Develop Data Management Framework (define how data will be collected, managed, auditied, transferred to insurers and Government, and financed)																															
9.4	Product Design & Planning of Operational Systems and Procedures	APPOINTED PRODUCT DESIGNERS, TAIC, INSURERS AND REINSURERS																														
9.4.1	- Product design and rating																															
9.4.2	- Develop operating systems and procedures (underwriting claims, business processes, collection of premiums)																															
9.4.3	- Insurance and reinsurance planning																															
9.4.4	- Identify and appoint index "calculation agent"	TAIS, TIRA																														
9.5	Identify appropriate linkages with distribution channels	TAIS, TAIC, MOA, TADB, COMMERCIAL BANKS																														
9.6	Implementation Planning and Program Launch	TAIC, DISTRIBUTION CHANNELS																														
9.6.1	- Launch date																															
9.6.2	- Awareness creation / education	TRAINING / DISSEMINATION AGENT																														
9.6.3	- Marketing & Sales of Individual Farmer Crop Index Insurance Cover	INSURERS, DISTRIBUTION CHANNELS																														
9.6.4	- Inception of cover date	TAIC, INSURERS																														
9.6.5	- Implement data collection and verification for settlement	SERVICE PROVIDER																														
9.6.6	- Implement Monitoring & Evaluation framework	TAIS																														

			2023				2024												2025				2026		2027		2028		2029		2030	
Code	Item	Responsibility	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	1st Q	2nd Q	3rd Q	4th Q	1st S	2nd S	1st S	2nd S	1st S	2nd S	1st S	2nd S	1st S	2nd S
10	**DESIGN AND IMPLEMENTATION OF INDEX BASED LIVESTOCK INSURANCE**																															
10.1	**Identify and register beneficiaries of Index Based Livestock Insurance scheme**	**MOLF, SERVICE PROVIDER**																														
10.1.1	- Define target beneficiaries																															
10.1.2	- Registration process																															
10.2	**Carry out detailed surveys with beneficiary focus groups to examine the risks to be covered and the loss histories in the various regions (this is critical for good product design)**	**APPOINTED RESEARCH INSTITUTION / PRODUCT DESIGNERS**																														
10.3	**Product Design & Planning of Operational Systems and Procedures for large scale Index-Based Livestock Insurance Program based on NDVI or other indices**	**APPOINTED PRODUCT DESIGNERS, TAIC, INSURERS AND REINSURERS**																														
10.3.1	- Product design & rating																															
10.3.2	- Develop operating systems and procedures (underwriting, claims, business processes, collection of premiums)																															
10.3.3	- Insurance and reinsurance planning																															
10.3.4	- Identify and appoint index "calculation agent"																															
10.4	**Implementation Planning and Program Launch**	**TAIC, DISTRIBUTION CHANNELS**																														
10.4.1	- Launch date																															
10.4.2	- Awareness creation / education	**TRAINING / DISSEMINATION AGENT**																														
10.4.3	- Marketing & Sales of voluntary individual index-based livestock insurance	**INSURERS, DISTRIBUTION CHANNELS**																														
10.4.4	- Inception of cover date	**TAIC, INSURERS**																														
10.4.5	- Implement data collection and verification for settlement	**SERVICE PROVIDER**																														
10.4.6	- Implement Monitoring & Evaluation framework	**TAIS**																														

Technical Note 4

Tanzania Agriculture Insurance Scheme:

Projected Insurance Uptake and Fiscal Costs

2024 to 2030

Table of Contents

1. Context and objectives

This document, together with the accompanying interactive Excel tool, comprises Technical Note 4 in the framework of the IFAD-INSURED technical assistance (TA) collaboration with the Tanzania Insurance Regulatory Authority (TIRA).[1] The objective of this Technical Note is to provide TIRA and the Government of the United Republic of Tanzania (GOT) with indicative farmer uptake projections and the corresponding fiscal costs of government premium subsidies and other financial support to the Tanzania Agricultural Insurance Scheme (TAIS) implementation activities over the next 7 years, from 2024 to 2030. The Excel tool which accompanies this Technical Note can be used by TIRA to develop potential policy scenarios by modifying any of the parameters used in this TAIS uptake and fiscal costing exercise.

This Technical Note is structured as follows:

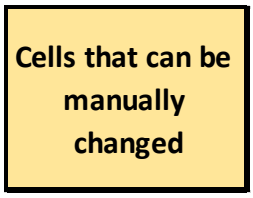
- Section 2 provides an overview of the methodology and assumptions used in preparing the TAIS uptake projections and fiscal costings, and explains the operation of the Excel-based tool, along with the three scenarios that have been modelled: high, medium, and low uptake and premium scenarios.
- Section 3 presents the main results of the analysis for the three scenarios that have been modelled.
- Section 4 presents the major conclusions and next steps in this analysis for TIRA and TAIS stakeholders to consider.
- Annexes 1 to 3 present additional details on take-up and premium volumes for the three scenarios developed.

[1] The Excel tool has been delivered to TIRA for the use of TIRA and of the MOF.

2. Methodology and assumptions used in preparing the TAIS uptake projections and fiscal costings

2.1. Excel workbook

The IFAD-INSURED team have programmed a simple interactive tool in Microsoft Excel software to enable TIRA, the Ministry of Finance (MoF), and other government policy makers to prepare TAIS subsidized agricultural insurance uptake projections and to estimate the associated fiscal costs of TAIS premium subsidies and other support costs to government, for the period 2024 to 2030. Sections 2.2 to 2.4, describe the assumptions that have been made in the design of this simple Excel budgeting tool. In order to allow flexibility in the development of the uptake and fiscal projections, in the Excel tool there are a series of cells that can be changed by the user, which are highlighted in yellow ochre as per the illustration below.



2.2. TIRA target for agricultural insurance premiums to reach 10% of non-life market premium by 2030

Non-Life Gross Written Premium (GWP) projections 2022 to 2030

GOT has ambitious plans to increase the contribution of agricultural insurance premiums from 0.2% of gross written premium (GWP) in 2021 to 10% of GWP by 2030.[2] IFAD-INSURED has used this 2030 premium target to develop the interactive Excel agricultural insurance uptake tool, and in this case the projections are explicitly based on a target of **10% of non-life GWP** by 2030.

In 2021, actual Non-Life GWP reported by TIRA was TZS 746.4 billion (USD 311.0 million) and this is modelled by IFAD-INSURED to increase to TZS 1,472.7 billion (USD 613.6 million)[3] by 2030: the target premium for agricultural insurance is therefore TZS 147.3 billion (USD 61.4 million) by 2030. The starting point in the analysis was to obtain TIRA reported actual non-life GWP data for the five-year period 2017 to 2021 and to then assume a linear growth to calculate the projected Non-Life GWP for the years 2022 to 2030. The results of this analysis are shown below in Figure 1 and Table 1.

[2] See MOF 2020 Financial Sector Development Master Plan 2020/21 to 2029 page 56, which states: "10% of the total insurance premium contributed by agricultural insurance by 2030" and TIRA 2023, which states: "Increased agricultural insurance coverage from the current less than 1% to 10% of GWP by 2030 in line with the FSDMP".
[3] The tool is programmed in USD using a constant 2023 exchange rate of TZS 2,400 equals USD 1.00. TIRA may change this exchange rate as they wish in future updates.

Figure 1. Tanzania Non-Life GWP, projected from 2021 to 2030 (USD Million)

Note: Non-Life Gross Written Premium (GWP) 2017 to 2021 based on actual market figures reported in TIRA 2022 and converted to USD. 2022 to 2030 Non-Life GWP in USD based on a projected annual average growth rate of 7.8% p.a.

Agricultural insurance premium growth projections 2022 to 2030

The Commissioner of Insurance has stressed that the TAIS should be rolled out gradually on a prudent basis over the next seven years and that in early years the emphasis should be on testing and refining new products and programs rather than trying immediately to scale up cover. Based on this guidance, IFAD-INSURED has developed a series of agricultural insurance premium uptake scenarios over the period 2022 to 2030, which are described in more detail below. It is assumed that TAIS insurance will be provided on a voluntary basis, but with direct linkage to agricultural credit and subsidized input supply.

In 2021, six insurance companies provided agricultural insurance in Tanzania with a total agricultural insurance GWP of TZS 1,323.7 million (USD 0.55 million) equivalent to just 0.2% of General or non-life GWP. These companies were Jubilee General Insurance Company Limited, MGen Tanzania Insurance Company Limited, UAP Insurance Tanzania Limited, National Insurance Corporation of Tanzania Limited, GA Insurance Tanzania Limited, and Britam Insurance Tanzania Limited. The largest part of 2021 agricultural insurance premium of TZS 1,323.7 million was from crop insurance class of business (90.8%). Other classes included livestock and fisheries. During the year 2020, total agricultural insurance premiums of TZS 159 million (USD 0.07 million) was underwritten, which constituted 0.02% of total gross premiums written in general insurance business. In the year 2019 total gross premium written for agriculture class of business was TZS 330.0 million (USD 0.14 million) equivalent to 0.1% of non-life GWP (TIRA 2022).

IFAD-INSURED have prepared three baseline scenarios for agricultural insurance premium growth between 2022 and 2030, which cover the following:

1. **High uptake and high premium growth scenario:** which assumes that actual agricultural insurance GWP will increase from 0.2% (2021) to 10.0% of total non-life GWP by 2030.

2. **Medium uptake and medium premium growth scenario:** which assumes that actual agricultural insurance GWP will increase from 0.2% (2021) to 7.5% of total non-life GWP by 2030.

3. **Low uptake and low premium growth scenario:** which assumes that actual agricultural insurance GWP will increase from 0.2% (2021) to 3.5% of total non-life GWP by 2030.

Table 1 presents a summary for Tanzania of the actual non-life GWP between 2017 and 2021 and the projected growth in non-life GWP between 2022 and 2030 and the corresponding projected agricultural insurance premiums both as a percentage of non-life GWP and in USD for the high, medium, and low uptake/growth scenarios for the period 2022 to 2030. These scenarios assume that TAIS uptake and premium growth will be prudent between 2024 and 2026, because it will take time for the Tanzania Agricultural Insurance Consortium (TAIC) to develop new agricultural crop, livestock, aquaculture and forestry insurance products and services and to then test and refine these products before commercial scale-up under the TAIS.

It is important to note that the model assumes that all agricultural insurance premiums generated by Tanzania insurers between 2024 and 2030 will be underwritten by the TAIC within TAIS and thereby qualify for premium subsidies. In reality, a small amount of business is likely to be underwritten outside the TAIS: however, this non-TAIS agricultural insurance business is likely to be very small as shown by the actual agricultural insurance market premiums reported by TIRA between 2019 and 2021 amounting to between 0.01% and 0.2% only of non-life GWP.

Table 1. Tanzania: projected growth in non-life GWP 2024 to 2030 and three growth scenarios for agricultural insurance premiums (USD Million)

Tanzania Non-Life Market Premium Projections				Projected Growth in Agricultural Insurance Premium as a percent of Non-Life GWP					
				HIGH GROWTH		MEDIUM GROWTH		LOW GROWTH	
Year	NON-LIFE GWP (TZS Billion)	NON-LIFE GWP (USD Million)	Percent growth (%)	Agri-Insurance Premium % of Non-Life GWP	Agri-Insurance Premium (USD Million)	Agri-Insurance Premium % of Non-Life GWP	Agri-Insurance Premium (USD Million)	Agri-Insurance Premium % of Non-Life GWP	Agri-Insurance Premium (USD Million)
2017	556.3	231.8							
2018	587.6	244.8	5.6%						
2019	694.9	289.5	18.3%	0.10%	0.29	0.10%	0.29	0.10%	0.29
2020	688.6	286.9	-0.9%	0.02%	0.06	0.02%	0.06	0.02%	0.06
2021	746.4	311.0	8.4%	0.20%	0.62	0.20%	0.62	0.20%	0.62
2022	804.9	335.4	7.8%	0.30%	1.01	0.30%	1.01	0.30%	1.01
2023	868.1	361.7	7.8%	0.40%	1.45	0.40%	1.45	0.40%	1.45
2024	936.2	390.1	7.8%	1.00%	3.90	0.50%	1.95	0.50%	1.95
2025	1,009.6	420.7	7.8%	2.50%	10.52	1.00%	4.21	0.75%	3.15
2026	1,088.8	453.7	7.8%	3.50%	15.88	1.50%	6.80	1.00%	4.54
2027	1,174.2	489.2	7.8%	4.50%	22.02	2.50%	12.23	1.50%	7.34
2028	1,266.3	527.6	7.8%	5.00%	26.38	3.50%	18.47	2.00%	10.55
2029	1,365.6	569.0	7.8%	7.50%	42.68	5.00%	28.45	2.50%	14.23
2030	1,472.7	613.6	7.8%	**10.00%**	**61.36**	**7.50%**	**46.02**	**3.50%**	**21.48**
Total 2024-30			7.8%						

Note: Non-Life Gross Written Premium 2017 to 2021 and agricultural insurance as a percentage of NL-GWP based on actual market figures reported by TIRA (2022). 2022 to 2030 NL-GWP based on an annual average growth rate of 7.8%. Agricultural insurance premiums 2022 to 2023 based on IFAD-INSURED high, medium and low growth projections 2024 to 2030.

2.3. TAIS targets: smallholder farmers of food and cash crops, livestock, aquaculture, and forestry

For the purposes of this costings study the following sum insured and premium rate and premium rate assumptions have been made per insured farmer for crops, livestock, aquaculture, and forestry (Table 2):

1. **Target beneficiaries.** It is assumed that GOT is targeting subsidized TAIS at small emerging and semi-commercial farmers. Hence, the Excel model assumes relatively small average size of insured crop area and numbers of animals.[4]

2. **Food crops (e.g., maize and rice).** An average sum insured of USD 350 per ha has been assumed for food crops such as maize and rice based on the average per ha costs of production. It is assumed that the average insured area per farmer is 1 ha per cropping season (or 2 ha in unimodal areas) with an annual sum insured of USD 700 per farmer. An area yield index insurance (AYII) cover is initially proposed for food crops. The average assumed premium rate for AYII cover based on international experience in Eastern Africa is 7.5%, giving an average premium per food crop farmers of USD 52.50 per year.

3. **Cash crops,** which are priorities for the GOT. These crops may be underwritten using named peril crop insurance (NPCI) damage-based indemnity policies, or possibly index insurance covers which can be weather-indexed or cover risks beyond weather parameters alone, such as with satellite-based vegetation indices, or AYII. An average cost of production sum insured of USD 750 per ha is assumed for these cash crops and an average insured area of 1 ha per farmer. With an assumed average premium rate of 7.5% the premium is USD 56.25 per farmer.

4. **Livestock.** It is assumed that TAIS will initially target small and medium dairy cattle producers in Tanzania. A standard individual animal accident and mortality indemnity cover is proposed for dairy cattle, along the lines of what is currently offered by some insurers in Tanzania. Based on data provided by the Ministry of Livestock and Fisheries (MoLF) an average value of USD 500 per dairy cow is assumed for the costings and with each owner insuring an average of 2 head of dairy cattle, the average sum insured is USD 1,000 per insured dairy cattle producer. With an average premium rate of 5%, the average premium cost is USD 50 per dairy cattle producer per year.[5]

5. **Livelihoods drought index insurance protection for pastoralists in Tanzania.** Based on the success of the large-scale satellite pasture-drought index-based livestock insurance (IBLI) programs in Kenya (Kenya Livestock Insurance Programme, KLIP) and in Ethiopia (Satellite Pasture for Pastoralists in Ethiopia, SIIPE), and their successor, the “De-Risking, Inclusion and Value Enhancement of Pastoral Economies in the Horn of Africa” (DRIVE) programme, which was launched in 2022/23, as well as the demand for such cover by the Tanzania Ministry of Livestock and Fisheries (MoLF), it is proposed to also roll-out a similar IBLI cover in Tanzania for vulnerable pastoralists. This is referred to in the Excel tables as 'Livestock 2 - Pastoralists NDVI’, as IBLI is based on satellite data, which is used to calculate the Normalized Difference Vegetation Index (NDVI) in order to create an index insurance product based on loss of pasture for grazing. The sum insured is based on the average costs of providing supplementary feed and water to an adult cow (equivalent to one tropical livestock unit or TLU) or USD 200 per TLU per annum. With an average of 5 insured TLU per pastoralist, the average sum insured is USD 1,000 per pastoralist per annum. Given the very high drought exposure, an average premium rate of 15% is used in the costings generating average premium per pastoralist of USD 150 per year.

[4] Tanzania is dominated by smallholder farmers who contribute about 80% of the agriculture produced, and have small landholdings (NBS 2021).

[5] A 5% rate is similar to the typical rates found in Rwanda and Uganda, although it should be noted that this can be higher.

6. **Aquaculture.** The costings are based on pond or cage production of Tilapia fish farming with an assumed sum insured of USD 5,000 per ha based on the expected value of fish stock and, with an average size of farm of 0.25 ha, the sum insured is USD 1,250 per insured fish farmer: the policy would be a named peril loss of fish stock cover excluding diseases. Only one commercial crop of Tilapia per year is assumed for these costings (although it is recognized that, under high-feed commercial production systems, more than 1 crop of tilapia can be produced per year). With an average premium rate of 10% the average premium cost would amount to USD 125 per insured fish farmer.

7. **Smallholder out-grower and communal forestry.** For the purpose of this costings study an average forestry size of holding of 1 ha is assumed with average costs of establishment and maintenance up to maturity of USD 2,500 per ha. Overall, there are several small-scale woodlots and medium-sized plantations in Tanzania owned by smallholders, communities, districts, private companies, schools, and faith-based organizations. The total area of such woodlots is estimated at 120,000 to 140,000 ha: a study in Mufindi District reported an average size of holding on 2.6 ha, mainly pine and eucalyptus species (Ngaga, 2011). Conversely FAO estimate the area under private and community forestry at only 60,000-70,000 ha and the community plots are mainly very small, less than 1 ha by size (FAO, 2020). The average premium rate is assumed at 2.5% applied to the sum insured, generating an average premium cost of USD 62.5 per ha or per insured forestry owner (assuming they have an average plot of 1 ha).

The full sum insured, and premium assumptions used in the costings are summarized below in Table 2 for each agriculture sector and insurance product line. The costing assumptions shown in the cells coloured in yellow ochre can be adjusted by TIRA as it wishes.

Table 2. Assumptions used to model individual farmer Insurance premium by agricultural insurance product line

ITEM	CROP 1 AYII (Food Crops)	CROP 2 NPCI (Cash Crops)	LIVESTOCK 1 (Dairy Cattle indemnity)	LIVESTOCK 2 Pastoralists NDVI	AQUACULTURE (Named Peril Indemnity)	FORESTRY (Fire FLEXA)
Insured Area per Farmer (Ha)*/No. Insured Animals	2	1	2	5	0.25	1
Sum Insured (US$/Ha or US$/Animal)	350	750	500	200	5,000	2,500
Sum Insured per Farmer (US$)	700	750	1,000	1,000	1,250	2,500
Indicative Commercial Premium Rate (%)	7.50%	7.50%	5%	15%	10%	2.5%
Premium per Farmer per Policy (US$)	52.5	56.25	50	150	125	62.5

* Note for CROP 1 line = 2 crop seasons @1 Ha per season

Under TAIS it will take 6 to 18 months to design, rate, and test new insurance products, and to design the operating systems and procedures for each new agricultural insurance product line: a TAIS recommended design and launch plan has been prepared for the period 2024 to 2030. IFAD-INSURED has therefore prepared a realistic design and roll-out plan for the launch and scale-up of new TAIS agricultural insurance products over the period 2024 to 2030, which is summarized in Table 3 along with the allocation of total annual agricultural insurance premium in percentage terms per product line, per year. (See Technical Note 3 for full details of the proposed product design and roll-out plan).

This plan starts in the first rainy season of 2024 with the launch of AYII for smallholder maize farmers. It assumes and emphasizes a direct linkage to the MoA's subsidized input scheme and/or seasonal production loans through the major lending institutions. In year one, 100% of the TAIS premium would be generated by the maize AYII product line. The maize AYII programme would be scaled-up in subsequent years and new staple food crops added such as sorghum and millet etc., according to MoA

priorities. Other micro-level index insurance products could also be designed and implemented in parallel to AYII for food crops between 2025 and 2030. This would be followed in 2025 with the launch of one crop indemnity-based named peril crop insurance (NPCI) programme (allocation of 22.5% of year two premium) and a start-up dairy cattle insurance programme using a conventional individual animal livestock accident and mortality policy (allocation of 2.5% of year two premium). Index-based livestock insurance (IBLI) for pastoralists would be launched in 2026;[6] aquaculture insurance would be launched in the same year 2026; and finally forestry insurance would be offered starting in 2027. The allocation of premium by product line is shown below for each programme as a percentage of total premium by year from 2024 to 2030 (Table 3). The premium allocation by agricultural insurance programme can be adjusted by TIRA as it wishes in the Excel tool, but it is essential to ensure that the percentage allocations to each product line add up to 100% each year.

Table 3. Assumptions used to allocate agricultural insurance premium budget by insurance line (% of total premium allocated by line by year)

Year	CROP 1 AYII (Food Crops)	CROP 2 NPCI (Cash Crops)	LIVESTOCK 1 (Dairy Cattle indemnity)	LIVESTOCK 2 (Pastoralists NDVI)	AQUACULTURE (Named Peril Indemnity)	FORESTRY (Fire FLEXA)	Total Premium Allocation per Line per Year (%)
2024	100.00%						**100.00%**
2025	75.00%	22.50%	2.50%				**100.00%**
2026	70.00%	20.00%	5.00%	4.00%	1.00%		**100.00%**
2027	67.50%	17.50%	7.50%	6.00%	1.00%	0.50%	**100.00%**
2028	65.00%	15.00%	7.50%	10.50%	1.50%	0.50%	**100.00%**
2029	62.50%	15.00%	7.50%	12.50%	1.50%	1.00%	**100.00%**
2030	62.50%	12.50%	7.50%	13.50%	2.00%	2.00%	**100.00%**
Total	**65.6%**	**15.0%**	**6.8%**	**10.0%**	**1.4%**	**1.0%**	**100.00%**

2.4. Assumptions used to calculate fiscal costs of government premium subsidies and other forms of financial support to TAIS implementation

Premium subsidies

Under TAIS, GOT is studying the role of premium subsidies and the levels of premium subsidies that it may prudently afford. A central aim of this IFAD-INSURED uptake analysis and fiscal costings exercise is to provide TIRA and GOT guidance on international best practice with premium subsidy provision and to provide estimates of the cost of premium subsidies under different uptake scenarios.

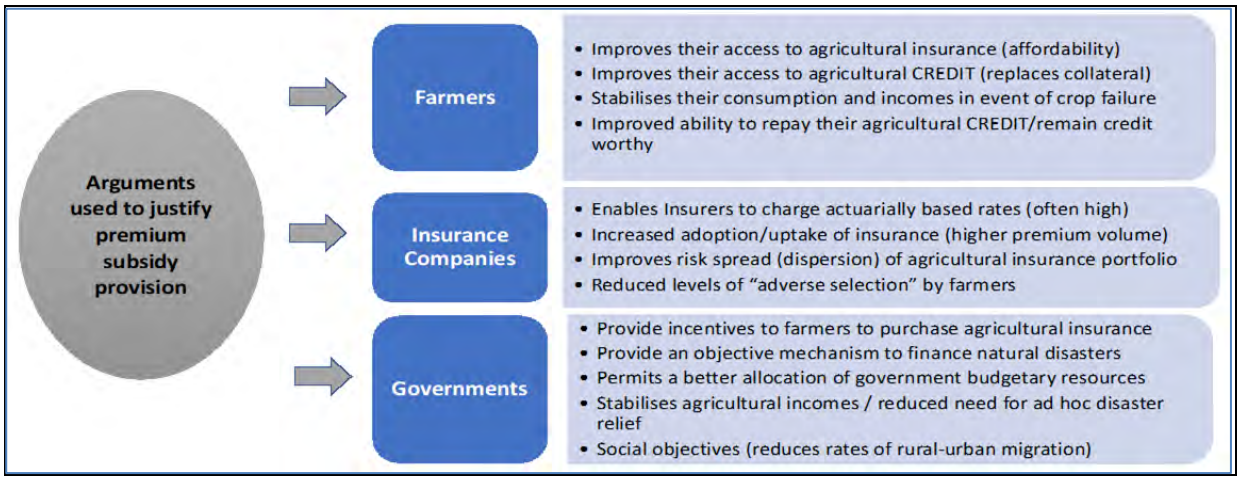
Premium subsidies are the most widely practiced form of government support to the (mainly) individual-farmer micro-level agricultural insurance programs operating in both developed and developing countries. A 2008 study of agricultural insurance provision in over 65 countries, reported that premium subsidies were the most common form of government support in nearly two-thirds (63%) of countries (Mahul and Stutley 2010), and anecdotally, it is still the typical type of government support provided to agricultural insurance.

The rationale for government premium subsidies centers on the need to make agricultural insurance policies more affordable and accessible to small-scale farmers who are usually their primary target. Financial institutions (banks, MFIs, insurers, etc.) also benefit where premium subsidy provision leads to increased uptake and penetration by farmers: where a farmer has a crop insurance policy, banks can improve their loan recovery rates in the event of severe crop failure, while increased

[6] Conversely, if MoLF desire to bring forward the IBLI programme to 2024 or 2025 this would be technically feasible, because Zep-Re, the appointed implementation manager for the World Bank-funded DRIVE Project, have designed an IBLI contract design and pricing platform that can be used to offer IBLI in any country in Africa.

adoption of insurance usually means that insurance companies achieve a better spread of risk and benefit from reduced adverse selection. Finally, governments can use premium subsidies to promote private sector agricultural insurance as a means of replacing ad hoc disaster relief (see Figure 2 below for further details).

Figure 2. Rationale for premium subsidies in agricultural insurance



Source: Authors

There are, however, several potential drawbacks of premium subsidies unless these are carefully planned. The provision of non-discriminatory premium subsidies is potentially regressive because it disproportionately benefits the larger farmers to the detriment of small and marginal farmers: the best programs therefore either put a cap on the amount of subsidy that larger farmers can receive, and/or reduce the level of premium subsidy that larger farmers are eligible for (as per UAIS in Uganda).[7] Premium subsidies that cover a large part of the overall premium can promote moral hazard, encouraging farmers to grow high-risk crops in regions that are not technically suited to the crop. Once premium subsidies have been introduced by governments, it is politically very difficult to reduce or to withdraw them. In many of the countries that operate non-discriminatory premium subsidies, the fiscal costs to the government are extremely high; and as insurance penetration increases, subsidies place an increasing burden on the national budget (Mahul and Stutley 2010).

Today there is growing consensus in development circles that smart subsidies that reduce the cost of premiums are required to make micro-level index insurance more widely accessible to and affordable by the rural poor. See for example: Hill et al. (2014), Schaeffer et al. (2016), ILO & IFC (2017), and Töpper and Stadtmüller (2021).

"Smart" subsidies[8] are designed and implemented in ways that provide maximum social benefits while minimizing distortions in the market and mistargeting of clients. A subsidy should be designed with a clearly stated and well-documented purpose. It should address a market failure or equity concern and should successfully target those in need with minimum inefficiency. Smart subsidies are designed with a clear exit strategy or a long-term financing strategy in mind, as well as a good M&E system that tracks subsidy performance; this is paramount for the success of any subsidized insurance scheme (Hill et al. 2014; Töpper and Stadtmüller. 2021).

[7] For example, TIRA could put a cap of 5 ha or 10 ha per farmer for premium subsidy purposes, and also consider offering larger farmers a lower premium subsidy level such as 30% of premium, compared to a 50% subsidy for small and medium farmers as defined.

[8] InsuResilience Global Partnership define SMART premium support as: (i) Sustainable; (ii) Provides value for Money; (iii) Accessible to poor countries and individuals; (iv) Resilience-building incentives that do not disguise true risk cost; and (v) Transparent and consistent to empower recipients and maximize synergies.

There are rationales for providing direct and indirect subsidies for insurance: (i) direct premium subsidies can be used to improve equity of coverage by extending insurance access to previously excluded groups, such as low-income individuals; and (ii) indirect subsidies, such as investing in data provision, or education, can be used to correct market failures that may have hindered the development of the insurance sector. Hill et al. (2014) recommend, however, that before governments consider premium subsidy support, they first implement alternative subsidy measures to correct market imperfections, such as investing in information systems and supporting start-up costs and reinsurance, which can encourage the development of the microinsurance markets. It should be noted, however, that premium subsidies alone do not guarantee scale or intended impact. Beyond this, other aspects that reduce premium costs, support affordability and payments, and make products more efficient to scale and service are key, such as: (i) tax breaks on agricultural insurance (as in UAIS); (ii) aggregated distribution through allowing bundling of insurance with other products and services; (iii) allowance of risk aggregators and distribution channels to pre-finance premiums on clients' behalf and access subsidies so individuals can pay back in installments; and (iv) linkages with mobile banking channels for payments and payouts.

The recommended premium subsidy levels for the start-up of TAIS suggested by IFAD-INSURED in the current analysis are a simple 50% premium subsidy across all micro-level individual farmer crop, livestock, fisheries and forestry products and programs. There is one exception namely, the IBLI drought cover for vulnerable pastoralists, where in-line with DRIVE programme implementation in other countries, GOT may need to consider premium subsidies as high as 90% to 100% initially and which reduce over time. For the purpose of this modelling exercise an 80% premium subsidy level has been assumed for a Tanzania IBLI programme. The most common premium subsidy level is 50% of the cost of the commercial premium as practiced in many countries (Mahul and Stutley 2010). The 50% premium subsidy figure is a level frequently applied since it allows to reduce the cost of insurance, while it still leaves farmers with the responsibility of paying for a significant amount of the coverage. This is also a simple concept to explain to any farmer: namely, for every dollar of premium the farmer pays, the government will match this with a dollar of premium subsidy. GOT may wish to start TAIS implementation in 2024 with these agreed premium subsidy levels, and then over time to modify and amend the subsidy levels based on actual uptake experience. In the Excel tool, TIRA may wish to experiment with alternative premium subsidy levels and in the following section different premium subsidy levels are presented.

Table 4. Assumptions used for premium subsidy levels (percentage of indicative commercial premium rate)

Insurance Line	CROP 1 AYII (Food Crops)	CROP 2 NPCI (Cash Crops)	LIVESTOCK 1 (Dairy Cattle indemnity)	LIVESTOCK 2 Pastoralists NDVI	AQUACULTURE (Named Peril Indemnity)	FORESTRY (Fire FLEXA)
Subsidy level (% of premium)	50%	50%	50%	80%	50%	50%

Other forms of Government support for TAIS

In addition to premium subsidy provision, there are many other ways in which governments can usefully promote the implementation and scale up of agricultural insurance, including:

- **Provision of an enabling Legal and Regulatory Environment**. Governments can often usefully support the introduction of agricultural insurance by creating an enabling legal and regulatory environment. In the case of index insurance, changes to conventional insurance legislation may be required to permit this class of business to be underwritten by the local insurance market. Legal and regulatory issues should therefore be addressed right at the start of the process

designing any index insurance product (GlobalAgrisk 2012). In this respect, reference can be made to Technical Note 2 "Technical Review of the TIRA 2019 Draft Agriculture Insurance Regulations".

- **Enhancing agricultural insurance infrastructure and data and information systems.** If AYII is to be expanded, governments can play a very important role to strengthen their seasonal crop yield estimation survey procedures. There may also be important roles to invest in developing remote sensing capabilities for satellite index insurance, and potentially in upgrading some reference national meteorological weather stations including the reporting systems. Furthermore, if governments can also assist the insurance sector to enter this class of business by providing them with access to fairly priced time series meteorological weather data, crop production and yield data and financial statistics. [9]

- **Support to product research and development**. Few of the private insurance companies in developing countries in Asia, Africa and Latin America and the Caribbean have any experience with the design and rating of either traditional indemnity crop insurance products or newer index-based crop insurance products. Government could play a key role by supporting the provision of specialist technical assistance from international sources to assist their insurance associations to design and rate products and prepare policy wordings for these new agricultural insurance products. Currently such technical assistance is mainly funded by individual international development agencies and NGOs, or by specialized donor vehicles dedicated to climate risk insurance and that government could apply to for support, such as the Global Shield against Climate Risks or the InsuResilience Solutions Fund.[10]

- **Education, training and capacity building for farmers, line ministries' staff, insurance distributors, and insurers**. Another critical role governments can play is in supporting farmer awareness and education programs, capacity building workshops and technical training programs for key agricultural insurance staff – those involved in product design as well as in all aspects of distribution. Insurance company staff in particular will also need specialist training in product design, actuarial skills and rating, underwriting and claims administration and loss assessment systems and procedures. Similar training also needs to be provided to staff in the banks, MFIs, and input suppliers if these organizations are to be involved as delivery channels/agents.

- **Catastrophe risk financing and reinsurance**. In about one third of the agricultural insurance schemes reviewed in a World Bank survey,[11] governments intervene to support agricultural insurance either through a national reinsurer (less common today), or through government assuming part or total responsibility for settling excess claims (in many countries today). This is despite the generally readily available access to international agricultural reinsurance capacity. In some cases, if programs are not designed and rated along sound commercial principles, they struggle to attract international reinsurance support, in which case government support for reinsurance is required (see Mahul & Stutley, 2010 for further details).

In the context of Tanzania, IFAD-INSURED believe there are three key areas under which GOT can support the roll-out and scale up of TAIS, which includes contributions towards the costs of:

[9] Someone has to pay for data collection, storage and retrieval in developing countries. For example, regarding weather data, it is often only accessible to private commercial insurers at very high cost and sometimes not in the timeframes required for insurance, but this reflects the costs of maintaining and operating a national system of weather recording systems on a daily or even hourly basis. Governments can subsidize the costs of data acquisition for the insurers.
[10] More information can be found at https://www.bmz.de/en/issues/climate-change-and-development/global-shield-against-climate-risks and https://insuresilience-solutions-fund.org respectively.
[11] Mahul and Stutley 2010

1) **Registering farmers (crop and livestock producers), and in opening of payment accounts** for these insured producers so that they can pay premiums to insurers and directly receive claims payments from these insurers. A one-off government payment of USD 5.00 per insured farmer has been assumed in these costings (See Table 5). It is assumed that farmers renew cover in subsequent years but that no further registration subsidies are paid for these already insured farmers. Payments only apply to new farmers taking up insurance for the first time.

2) **Farmer insurance awareness and education.** International experience shows that major investment is required in farmer training so that over time they gain knowledge and understanding of and trust in the insurance products and are more likely to renew cover in subsequent years. A GOT subsidy of USD 2.00 per farmer per year is included in the costings.

3) **Strengthening of data systems,** including financial support for the costs of developing staffing and systems and procedures for AYII crop cutting experiments (CCEs), animal registration and tagging, etc. A GOT contribution of USD 2.00 per insured farmer per year is included in the costings (Table 5).

Table 5. Assumptions used to estimate additional costs of government support to TAIS agricultural insurance operations (USD per Insured Farmer)

Item	Unit Cost (US$)	CROP 1 AYII (Food Crops)	CROP 2 NPCI (Cash Crops)	LIVESTOCK 1 (Dairy Cattle indemnity)	LIVESTOCK 2 (Pastoralists NDVI)	AQUACULTURE (Named Peril Indemnity)	FORESTRY (Fire FLEXA)
Costs of farmer registration and opening payment systems (one-off)	**5**	5	5	5	5	5	5
Farmer awareness/education	**2**	2	2	2	2	2	2
Strengthening of data systems (CCEs/Animal identification) (annual)	**2**	2	2	2	2	2	2

3. TAIS indicative farmer uptake projections and fiscal costs of premium subsidies and other support costs: 2024 to 2030

This section presents the main results for the three TAIS agricultural insurance uptake and premium growth scenarios between 2024 and 2030:

1. HIGH uptake scenario (high premium growth, agricultural insurance premium reaches 10% of non-life GWP by 2030)

2. MEDIUM uptake scenario (medium premium growth, agricultural insurance premium reaches 7.5% of non-life GWP by 2030)

3. LOW uptake scenario (low premium growth, agricultural insurance premium reaches 3.5% of non-life GWP by 2030)

At the end of this section, the costs of alternative premium subsidy levels are considered.

3.1 Scenario 1. TAIS HIGH uptake scenario (10% non-life GWP by 2030)

Under "Scenario 1: HIGH uptake scenario", TAIS would start in 2024 by insuring about 75,000 maize farmers under the maize AYII programme and by 2030 TAIS would be insuring about 1.04 million mainly small-scale farmers, livestock producers, fish farmers and owners of forestry

per year or about 12% of Tanzania's 8.76 million[12] agricultural households. Over the seven-year period of TAIS implementation 2024 to 2030, a total of 3.2 million farmers would benefit from TAIS subsidized insurance: of these, nearly 2.8 million policies (86% of total) would be issued to crop producers; 0.37 million policies (12% of total) would be issued to livestock producers; and 2% of policies would be issued to aquaculture and forestry producers combined (Table 6).

In 2024 total TAIS agricultural insurance premium would be about USD 3.9 million (1.0% of non-life GWP), rising to USD 61.4 million (10% of non-life GWP) by 2030. Over the seven years 2024 to 2030, TAIS would generate total agricultural insurance premium of USD 182.7 million of which USD 147.4 million (81% of total) would be from crop insurance, and USD 30.8 million (17% of total) from livestock insurance.

Under this high uptake scenario, the cost to GOT of TAIS 50% premium subsidies for all lines, save for livestock pasture drought index insurance (80% subsidy), would rise from USD 1.9 million in 2024 to USD 33.2 million in 2030 and over the seven-year period the total cost of premium subsidies would amount to USD 96.9 million.

The other government support costs to TAIS (farmer registration, opening of digital payment accounts, insurance awareness and education and data strengthening) would amount to USD 0.7 million in 2024 rising to USD 5.7 million in 2030, with a total cost of USD 18.1 million over seven years.

Under the high-uptake scenario the total costs of GOT financial support to TAIS are estimated at USD 2.6 million in 2024, rising to USD 38.9 million in 2030, or a total of USD 114.9 million over seven years. This represents an average cost to GOT of USD 36.0 per farmer who is insured under the TAIS over the seven-year period (Table 6).

[12] NBS 2021.

Table 6. Scenario 1: HIGH uptake scenario for TAIS agricultural insurance premium reaching 10% of Non-Life GWP by 2030

No. Insured Farmers by Year			CROP 1 AYII (Food Crops)	CROP 2 NPCI (Cash Crops)	LIVESTOCK 1 (Dairy Cattle indemnity)	LIVESTOCK 2 (Pastoralists NDVI)	AQUACULTURE (Named Peril Indemnity)	FORESTRY (Fire FLEXA)	Total
2024			74,299	-	-	-	-	-	74,299
2025			150,238	42,067	5,258	-	-	-	197,563
2026			211,709	56,456	15,878	4,234	1,270	-	289,547
2027			283,063	68,494	33,024	8,806	1,761	1,761	396,911
2028			326,622	70,349	39,571	18,467	3,166	2,110	460,286
2029			508,040	113,801	64,013	35,563	5,121	6,828	733,365
2030			**730,518**	**136,363**	**92,045**	**55,227**	**9,818**	**19,636**	**1,043,608**
Total 2024 to 2030			2,284,489	487,530	249,790	122,297	21,136	30,336	3,195,579
Premium by Year and Line (US$ Million)									
	Ag. Premium % of NL GWP								
2024	1.00%		3.90	0.00	0.00	0.00	0.00	0.00	3.90
2025	2.50%		7.89	2.37	0.26	0.00	0.00	0.00	10.52
2026	3.50%		11.11	3.18	0.79	0.64	0.16	0.00	15.88
2027	4.50%		14.86	3.85	1.65	1.32	0.22	0.11	22.02
2028	5.00%		17.15	3.96	1.98	2.77	0.40	0.13	26.38
2029	7.50%		26.67	6.40	3.20	5.33	0.64	0.43	42.68
2030	**10.00%**		**38.35**	**7.67**	**4.60**	**8.28**	**1.23**	**1.23**	**61.36**
Total 2024 to 2030			119.94	27.42	12.49	18.34	2.64	1.90	182.73
Premium subsidies by Year (US$ Million)			50%	50%	50%	80%	50%	50%	**Total**
2024			1.95						1.95
2025			3.94	1.18	0.13				5.26
2026			5.56	1.59	0.40	0.51	0.08		8.13
2027			7.43	1.93	0.83	1.06	0.11	0.06	11.40
2028			8.57	1.98	0.99	2.22	0.20	0.07	14.02
2029			13.34	3.20	1.60	4.27	0.32	0.21	22.94
2030			**19.18**	**3.84**	**2.30**	**6.63**	**0.61**	**0.61**	**33.17**
Total 2024 to 2030			**59.97**	**13.71**	**6.24**	**14.68**	**1.32**	**0.95**	**96.87**
Additional Support Costs (US$ Million)									
2024			0.67	0.00	0.00	0.00	0.00	0.00	0.67
2025			0.98	0.38	0.05	0.00	0.00	0.00	1.41
2026			1.15	0.30	0.12	0.04	0.01	0.00	1.62
2027			1.49	0.33	0.22	0.08	0.02	0.02	2.15
2028			1.52	0.29	0.19	0.12	0.03	0.02	2.18
2029			2.94	0.67	0.38	0.23	0.03	0.06	4.31
2030			**4.03**	**0.66**	**0.51**	**0.32**	**0.06**	**0.14**	**5.73**
Total 2024 to 2030			**12.79**	**2.63**	**1.46**	**0.79**	**0.15**	**0.24**	**18.06**
Total Cost of Government Financial Support to TAIS - Premium Subsidies and Other Support Costs (US$ Million)									
2024			2.62						2.62
2025			4.92	1.56	0.18				6.66
2026			6.71	1.89	0.51	0.55	0.09		9.75
2027			8.92	2.26	1.04	1.14	0.13	0.07	13.56
2028			10.10	2.27	1.18	2.34	0.23	0.08	16.20
2029			16.28	3.87	1.98	4.50	0.35	0.27	27.25
2030			23.21	4.49	2.81	6.95	0.68	0.76	**38.89**
Total 2024 to 2030			**72.76**	**16.34**	**7.70**	**15.46**	**1.47**	**1.19**	**114.93**

3.2 Scenario 2. TAIS MEDIUM uptake scenario (7.5% non-life GWP by 2030)

Under "Scenario 2: MEDIUM uptake scenario", where TAIS subsidized agricultural insurance premiums reach 7.5% of non-life GWP by 2030, nearly 2.1 million farmers would be insured over the seven-year period, with total costs to GOT of premium subsidies and additional support costs of USD 75 million, representing a cost saving to government of about USD 40 million compared to the high uptake scenario (Table 7).

Table 7. Scenario 2. MEDIUM uptake scenario for TAIS agricultural insurance premium reaching 7.5% of Non-Life GWP by 2030

No. Insured Farmers by Year		CROP 1 AYII (Food Crops)	CROP 2 NPCI (Cash Crops)	LIVESTOCK 1 (Dairy Cattle indemnity)	LIVESTOCK 2 (Pastoralists NDVI)	AQUACULTURE (Named Peril Indemnity)	FORESTRY (Fire FLEXA)	Total
2024		37,150	-	-	-	-		37,150
2025		60,095	16,827	2,103	-	-	-	79,025
2026		90,732	24,195	6,805	1,815	544	-	124,092
2027		157,257	38,052	18,347	4,892	978	978	220,506
2028		228,635	49,245	27,700	12,927	2,216	1,477	322,200
2029		338,693	75,867	42,675	23,709	3,414	4,552	488,910
2030		547,888	102,272	69,034	41,420	7,364	14,727	**782,706**
Total 2024 to 2030		1,460,451	306,459	166,664	84,763	14,517	21,735	2,054,588
Premium by Year and Line (US$ Million)								
	Ag. Premium % of NL GWP							
2024	0.50%	1.95	0.00	0.00	0.00	0.00		1.95
2025	1.00%	3.15	0.95	0.11	0.00	0.00	0.00	4.21
2026	1.50%	4.76	1.36	0.34	0.27	0.07	0.00	6.80
2027	2.50%	8.26	2.14	0.92	0.73	0.12	0.06	12.23
2028	3.50%	12.00	2.77	1.39	1.94	0.28	0.09	18.47
2029	5.00%	17.78	4.27	2.13	3.56	0.43	0.28	28.45
2030	**7.50%**	**28.76**	**5.75**	**3.45**	**6.21**	**0.92**	**0.92**	**46.02**
Total 2024 to 2030		76.67	17.24	8.33	12.71	1.81	1.36	118.13
Premium subsidies by Year (US$ Million)		50%	50%	50%	80%	50%	50%	**Total**
2024		0.98	-	-	-	-		0.98
2025		1.58	0.47	0.05	-	-	-	2.10
2026		2.38	0.68	0.17	0.22	0.03	-	3.48
2027		4.13	1.07	0.46	0.59	0.06	0.03	6.34
2028		6.00	1.39	0.69	1.55	0.14	0.05	9.82
2029		8.89	2.13	1.07	2.85	0.21	0.14	15.29
2030		**14.38**	**2.88**	**1.73**	**4.97**	**0.46**	**0.46**	**24.88**
Total 2024 to 2030		**38.34**	**8.62**	**4.17**	**10.17**	**0.91**	**0.68**	**62.88**
Additional Support Costs (US$ Million)								
2024		0.33	0.00	0.00	0.00	0.00	0.00	0.33
2025		0.36	0.15	0.02	0.00	0.00	0.00	0.53
2026		0.52	0.13	0.05	0.02	0.00	0.00	0.72
2027		0.96	0.22	0.13	0.04	0.01	0.01	1.38
2028		1.27	0.25	0.16	0.09	0.02	0.01	1.81
2029		1.91	0.44	0.25	0.15	0.02	0.04	2.80
2030		**3.24**	**0.54**	**0.41**	**0.25**	**0.05**	**0.11**	**4.60**
Total 2024 to 2030		**8.58**	**1.74**	**1.01**	**0.56**	**0.10**	**0.17**	**12.16**
Total Cost of Government Financial Support to TAIS - Premium Subsidies and Other Support Costs (US$ Million)								
2024		1.31						1.31
2025		1.93	0.62	0.07				2.63
2026		2.90	0.81	0.22	0.23	0.04		4.21
2027		5.09	1.29	0.59	0.63	0.07	0.04	7.71
2028		7.27	1.64	0.85	1.64	0.16	0.06	11.62
2029		10.80	2.57	1.31	2.99	0.23	0.18	18.09
2030		**17.62**	**3.42**	**2.13**	**5.22**	**0.51**	**0.57**	**29.48**
Total 2024 to 2030		**46.92**	**10.36**	**5.18**	**10.73**	**1.01**	**0.85**	**75.04**

3.3 Scenario 3. TAIS LOW uptake scenario (3.5% non-life GWP by 2030)

Under "Scenario 3 - LOW uptake scenario", where TAIS subsidized agricultural insurance premiums reach only 3.5% of non-life GPP by 2030, slightly more than 1.1 million farmers would be insured over the seven-year period, with total costs to GOT of premium subsidies and other support costs of USD 39.8 million (Table 8).

Table 8. Scenario 3: LOW uptake scenario for TAIS agricultural insurance premium reaching 3.5% of Non-Life GWP by 2030

No. Insured Farmers by Year		CROP 1 AYII (Food Crops)	CROP 2 NPCI (Cash Crops)	LIVESTOCK 1 (Dairy Cattle indemnity)	LIVESTOCK 2 (Pastoralists NDVI)	AQUACULTURE (Named Peril Indemnity)	FORESTRY (Fire FLEXA)	Total
2024		37,150	-	-	-	-		37,150
2025		45,071	12,620	1,577	-	-	-	59,269
2026		60,488	16,130	4,537	1,210	363	-	82,728
2027		94,354	22,831	11,008	2,935	587	587	132,304
2028		130,649	28,140	15,829	7,387	1,266	844	184,114
2029		169,347	37,934	21,338	11,854	1,707	2,276	244,455
2030		**255,681**	**47,727**	**32,216**	**19,329**	**3,436**	**6,873**	**365,263**
Total 2024 to 2030		**792,740**	**165,382**	**86,504**	**42,716**	**7,360**	**10,580**	**1,105,282**
Premium by Year and Line (US$ Million)								
	Ag. Premium % of NL GWP							
2024	0.50%	1.95	0.00	0.00	0.00	0.00		1.95
2025	0.75%	2.37	0.71	0.08	0.00	0.00	0.00	3.15
2026	1.00%	3.18	0.91	0.23	0.18	0.05	0.00	4.54
2027	1.50%	4.95	1.28	0.55	0.44	0.07	0.04	7.34
2028	2.00%	6.86	1.58	0.79	1.11	0.16	0.05	10.55
2029	2.50%	8.89	2.13	1.07	1.78	0.21	0.14	14.23
2030	**3.50%**	**13.42**	**2.68**	**1.61**	**2.90**	**0.43**	**0.43**	**21.48**
Total 2024 to 2030		41.62	9.30	4.33	6.41	0.92	0.66	63.24
Premium subsidies by Year (US$ Million)		50%	50%	50%	80%	50%	50%	**Total**
2024		0.98	-	-	-	-		0.98
2025		1.18	0.35	0.04	-	-	-	1.58
2026		1.59	0.45	0.11	0.15	0.02	-	2.32
2027		2.48	0.64	0.28	0.35	0.04	0.02	3.80
2028		3.43	0.79	0.40	0.89	0.08	0.03	5.61
2029		4.45	1.07	0.53	1.42	0.11	0.07	7.65
2030		**6.71**	**1.34**	**0.81**	**2.32**	**0.21**	**0.21**	**11.61**
Total 2024 to 2030		**20.81**	**4.65**	**2.16**	**5.13**	**0.46**	**0.33**	**33.54**
Additional Support Costs (US$ Million)								
2024		0.33	0.00	0.00	0.00	0.00	0.00	0.33
2025		0.22	0.11	0.01	0.00	0.00	0.00	0.35
2026		0.32	0.08	0.03	0.01	0.00	0.00	0.45
2027		0.55	0.12	0.08	0.03	0.01	0.01	0.78
2028		0.70	0.14	0.09	0.05	0.01	0.01	1.00
2029		0.87	0.20	0.11	0.07	0.01	0.02	1.28
2030		**1.45**	**0.24**	**0.18**	**0.11**	**0.02**	**0.05**	**2.07**
Total 2024 to 2030		**4.45**	**0.90**	**0.51**	**0.27**	**0.05**	**0.08**	**6.27**
Total Cost of Government Financial Support to TAIS - Premium Subsidies and Other Support Costs (US$ Million)								
2024		1.31						1.31
2025		1.40	0.47	0.05				1.93
2026		1.91	0.54	0.15	0.16	0.03		2.77
2027		3.02	0.77	0.35	0.38	0.04	0.02	4.59
2028		4.13	0.93	0.48	0.94	0.09	0.03	6.61
2029		5.32	1.27	0.65	1.49	0.12	0.09	8.93
2030		**8.17**	**1.58**	**0.99**	**2.43**	**0.24**	**0.27**	**13.67**
Total 2024 to 2030		**25.26**	**5.55**	**2.67**	**5.40**	**0.51**	**0.41**	**39.81**

3.4 TAIS costs to government of alternative premium subsidy levels

Using the accompanying Excel tool, TIRA may wish to analyze the TAIS portfolio from 2024 to 2030 with different levels of premium subsidies other than the 50% premium subsidy level recommended by IFAD-INSURED. The table below presents a summary of two alternative premium subsidy options namely a flat 40% premium subsidy for all programs and a flat 65% premium subsidy for all programs (Table 9). These are just two potential alternative options and in the Excel tool TIRA can develop any scenario required.

Table 9. Costs of TAIS Total Premium Subsidies for different Premium Subsidy Levels 2024 to 2030 (USD Million)

ALTERNATIVE PREMIUM SUBSIDY LEVELS	CROP 1 AYII (Food Crops)	CROP 2 NPCI (Cash Crops)	LIVESTOCK 1 (Dairy Cattle indemnity)	LIVESTOCK 2 (Pastoralists NDVI)	AQUACULTURE (Named Peril Indemnity)	FORESTRY (Fire FLEXA)	TOTAL PREMIUM SUBSIDIES
PREMIUM SUBSIDIES 40% ALL PROGRAMS	**40%**	**40%**	**40%**	**40%**	**40%**	**40%**	
SCENARIO 1. HIGH UPTAKE	47.97	10.97	5.00	7.34	1.06	0.76	**73.09**
SCENARIO 2. MEDIUM UPTAKE	30.67	6.90	3.33	5.09	0.73	0.54	**47.25**
SCENARIO 3. LOW UPTAKE	16.65	3.72	1.73	2.56	0.37	0.26	**25.29**
PREMIUM SUBSIDIES 65% ALL PROGRAMS	**65%**	**65%**	**65%**	**65%**	**65%**	**65%**	
SCENARIO 1. HIGH UPTAKE	77.96	17.83	8.12	11.92	1.72	1.23	**118.78**
SCENARIO 2. MEDIUM UPTAKE	49.84	11.20	5.42	8.26	1.18	0.88	**76.79**
SCENARIO 3. LOW UPTAKE	27.05	6.05	2.81	4.16	0.60	0.43	**41.10**

4. Conclusions and way forward

The TAIS insurance uptake projections presented in this technical note are based on agricultural insurance premiums expressed as a percentage of total market non-life GWP by the year 2030, ranging from a low of 3.5% to a high of 10% of non-life GWP.

IFAD-INSURED consider the low estimate of 3.5% of non-life GWP to be very pessimistic and such a low uptake scenario would probably apply where government premium subsidy and other financial support is highly constrained each year and where the TAIC does not have an adequate budget for major farmer insurance awareness, literacy and education programs under the TAIS.

Conversely, the 10% of non-life GWP by 2030 scenario is considered to be very ambitious and only achievable if GOT is highly committed to funding the very high levels of premium subsidies and other financial support to TAIS implied by this scenario. Equally, the TAIC will need to invest heavily in the development of new agricultural insurance products and services to meet the needs of farmers and to identify new innovative distribution channels to reach the very large numbers of farmers implied by the high uptake scenario. Bundling of voluntary agricultural insurance with input supply and credit and possibly output marketing under contract farming operations will be keys to achieving high uptake by Tanzanian small-scale farmers, and should be encouraged in all of the uptake scenarios. TIRA is encouraged to review these uptake scenarios in conjunction with TAIS public and private-sector stakeholders and to modify them as necessary.

The agricultural insurance parameters (insured area and numbers of insured animals, unit sum insured, premium rate, etc.) used in this model are based as closely as possible on actual insurance data from Tanzania and neighbouring countries in East Africa, but TIRA is encouraged to validate and, where applicable, modify these cost assumptions with the TAIS Technical Committee members.

Finally, TIRA will undoubtedly wish to review with the MoFP, the premium subsidy levels and other support costs presented in this technical note. The Excel tool is designed to enable TIRA and MOF to easily to change the subsidy levels and to model the fiscal costs to government over the seven years 2024 to 2030.

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ANNEX 1: TAIS Scenario 1. HIGH uptake projection (10% non-life GWP by 2030)

HIGH UPTAKE TARGETS FOR TAIS AGRI-INSURANCE PREMIUM REACHING 10% NON-LIFE GWP BY 2030							**Allocation of Agricultural Insurance Premium Budget by Insurance Line (US$ Million)**						
Year	**GWP (TSh. Bio)**	**GWP (US$ Million)**	**Percent growth**	**Agricultural Insurance GWP (US$ Million)**	**Agri-Insurance % of GWP**	**Agricultural Insurance GWP (US$ Million)**	**CROP 1 AYII (Food Crops)**	**CROP 2 NPCI (Cash Crops)**	**LIVESTOCK 1 (Dairy Cattle indemnity)**	**LIVESTOCK 2 (Pastoralists NDVI)**	**AQUACULTURE (Named Peril Indemnity)**	**FORESTRY (Fire FLEXA)**	**TOTAL**
2017	556.3	231.8											
2018	587.6	244.8	5.6%										
2019	694.9	289.5	18.3%	0.29	0.10%								
2020	688.6	286.9	-0.9%	0.06	0.02%								
2021	746.4	311.0	8.4%	0.62	0.20%								
2022	804.9	335.4	7.8%	1.01	0.30%								
2023	868.1	361.7	7.8%	1.45	0.40%								
2024	936.2	390.1	7.8%	3.90	1.00%	3.90	3.90						3.90
2025	1,009.6	420.7	7.8%	10.52	2.50%	10.52	7.89	2.37	0.26				10.52
2026	1,088.8	453.7	7.8%	15.88	3.50%	15.88	11.11	3.18	0.79	0.64	0.16		15.88
2027	1,174.2	489.2	7.8%	22.02	4.50%	22.02	14.86	3.85	1.65	1.32	0.22	0.11	22.02
2028	1,266.3	527.6	7.8%	26.38	5.00%	26.38	17.15	3.96	1.98	2.77	0.40	0.13	26.38
2029	1,365.6	569.0	7.8%	42.68	7.50%	42.68	26.67	6.40	3.20	5.33	0.64	0.43	42.68
2030	1,472.7	613.6	7.8%	61.36	**10.00%**	61.36	38.35	7.67	4.60	8.28	1.23	1.23	61.36
Total 2024-30			**7.8%**	182.73		**182.73**	**119.94**	**27.42**	**12.49**	**18.34**	**2.64**	**1.90**	**182.73**
Source: TIRA 2021 for Non-Life GWP 2017 to 2021							66%	15%	7%	10%	1%	1%	100%
2023 Constant Exchange Rate TZSh. To 1 US$			2,400										
GWP Average Annual Growth rate 2017 to 2021 of 7.8% used to estimate GWP through to 2030													

ANNEX 2: TAIS Scenario 2. MEDIUM uptake projection (7.5% non-life GWP by 2030)

MEDIUM UPTAKE TARGETS FOR TAIS AGRI-INSURANCE PREMIUM REACHING 7.5% NON-LIFE GWP BY 2							Allocation of Agricultural Insurance Premium Budget by Insurance Line (US$ Million)						
Year	GWP (TSh. Bio)	GWP (US$ Million)	Percent growth	Agricultural Insurance GWP (US$ Million)	Agri-Insurance % of GWP	Agricultural Insurance GWP (US$ Million)	CROP 1 AYII (Food Crops)	CROP 2 NPCI (Cash Crops)	LIVESTOCK 1 (Dairy Cattle indemnity)	LIVESTOCK 2 (Pastoralists NDVI)	AQUACULTURE (Named Peril Indemnity)	FORESTRY (Fire FLEXA)	TOTAL
2017	556.3	231.8											
2018	587.6	244.8	5.6%										
2019	694.9	289.5	18.3%	0.29	0.10%								
2020	688.6	286.9	-0.9%	0.06	0.02%								
2021	746.4	311.0	8.4%	0.62	0.20%								
2022	804.9	335.4	7.8%	1.01	0.30%								
2023	868.1	361.7	7.8%	1.45	0.40%								
2024	936.2	390.1	7.8%	1.95	0.50%	1.95	1.95						1.95
2025	1,009.6	420.7	7.8%	4.21	1.00%	4.21	3.15	0.95	0.11				4.21
2026	1,088.8	453.7	7.8%	6.80	1.50%	6.80	4.76	1.36	0.34	0.27	0.07		6.80
2027	1,174.2	489.2	7.8%	12.23	2.50%	12.23	8.26	2.14	0.92	0.73	0.12	0.06	12.23
2028	1,266.3	527.6	7.8%	18.47	3.50%	18.47	12.00	2.77	1.39	1.94	0.28	0.09	18.47
2029	1,365.6	569.0	7.8%	28.45	5.00%	28.45	17.78	4.27	2.13	3.56	0.43	0.28	28.45
2030	1,472.7	613.6	7.8%	46.02	**7.50%**	46.02	28.76	5.75	3.45	6.21	0.92	0.92	46.02
Total 2024-30			**7.8%**	118.13		**118.13**	**76.67**	**17.24**	**8.33**	**12.71**	**1.81**	**1.36**	**118.13**
Source: TIRA 2021 for Non-Life GWP 2017 to 2021							65%	15%	7%	11%	2%	1%	100%
2023 Constant Exchange Rate TZSh. To 1 US$			2,400										
GWP Average Annual Growth rate 2017 to 2021 of 7.8% used to estimate GWP through to 2030													

ANNEX 3: TAIS Scenario 3. LOW uptake projection (3.5% non-life GWP by 2030)

LOW UPTAKE TARGETS FOR TAIS AGRI-INSURANCE PREMIUM REACHING 3.5% NON-LIFE GWP BY 2030							Allocation of Agricultural Insurance Premium Budget by Insurance Line (US$ Million)						
Year	GWP (TSh. Bio)	GWP (US$ Million)	Percent growth	Agricultural Insurance GWP (US$ Million)	Agri-Insurance % of GWP	Agricultural Insurance GWP (US$)	CROP 1 AYII (Food Crops)	CROP 2 NPCI (Cash Crops)	LIVESTOCK 1 (Dairy Cattle indemnity)	LIVESTOCK 2 (Pastoralists NDVI)	AQUACULTURE (Named Peril Indemnity)	FORESTRY (Fire FLEXA)	TOTAL
2017	556.3	231.8											
2018	587.6	244.8	5.6%										
2019	694.9	289.5	18.3%	0.29	0.10%								
2020	688.6	286.9	-0.9%	0.06	0.02%								
2021	746.4	311.0	8.4%	0.62	0.20%								
2022	804.9	335.4	7.8%	1.01	0.30%								
2023	868.1	361.7	7.8%	1.45	0.40%								
2024	936.2	390.1	7.8%	1.95	0.50%	1.95	1.95						1.95
2025	1,009.6	420.7	7.8%	3.15	0.75%	3.15	2.37	0.71	0.08				3.15
2026	1,088.8	453.7	7.8%	4.54	1.00%	4.54	3.18	0.91	0.23	0.18	0.05		4.54
2027	1,174.2	489.2	7.8%	7.34	1.50%	7.34	4.95	1.28	0.55	0.44	0.07	0.04	7.34
2028	1,266.3	527.6	7.8%	10.55	2.00%	10.55	6.86	1.58	0.79	1.11	0.16	0.05	10.55
2029	1,365.6	569.0	7.8%	14.23	2.50%	14.23	8.89	2.13	1.07	1.78	0.21	0.14	14.23
2030	1,472.7	613.6	7.8%	21.48	**3.50%**	21.48	13.42	2.68	1.61	2.90	0.43	0.43	21.48
Total 2024-30			**7.8%**	63.24		**63.24**	**41.50**	**9.49**	**4.32**	**6.41**	**0.91**	**0.66**	**63.24**
Source: TIRA 2021 for Non-Life GWP 2017 to 2021							66%	15%	7%	10%	1%	1%	100%
2023 Constant Exchange Rate TZSh. To 1 US$		2,400											
GWP Average Annual Growth rate 2017 to 2021 of 7.8% used to estimate GWP through to 2030													

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