4.2.7 SUB-MODULE 7: AGRICULTURAL INSURANCE

Risk is an important aspect of the farming business and arises from a variety of sources. Farming businesses operate in a rapidly changing and unpredictable environment that impacts the outcomes of investment activities. The uncertainty associated with climate variability is a disincentive to investment, adoption of agricultural technologies and response to market opportunities.

Climate risk insurance for developing countries aims at reducing the economic risks of people. Insurance can buffer at least the financial implications of extreme weather and climate events through its risk transfer role. Currently, most public private programmes in developing countries offer livestock insurance and crops. Insurance can spread and smoothen the risk, may allow farmers to recover faster and more efficiently, provides certainty about post-disaster.

Weather index insurance is one of the possible interventions for overcoming the negative impacts of climate risk on rural livelihoods and agricultural production. Index insurance is normally linked to rainfall anomalies (drought, floods), extreme temperatures and humidity (frosts, hails), or even livestock/ crop yields. The use of a weather index linked to an insurance mechanism is a market-driven solution. It calls for a public-private partnership and the development of the private sector for its success.

Areas to be covered

- Sources of risks in agriculture
- Strategies for risk management
- Informal risk management strategies
- Formal risk management strategies
- Types of agricultural - livestock insurance
- Types of livestock insurance products
- Index insurance
- Benefits of livestock/crop insurance and index insurance for a farmer
- Livestock/crops cover
- Livestock/crops insurance program
- Why focus on agricultural insurance?
- Features of agricultural livestock/crops insurance
- Risk financing instruments

Sources of risks in agriculture

Risk is defined as the probability of occurrence of hazards and shocks that negatively impact agricultural production, trade, markets and consumption. Risk and uncertainty are inherent to agriculture. The most common sources of risk are weather; climate; diseases; natural disasters; government policies; changes of prices in agriculture products to fertilizer and other inputs; financial uncertainties; global markets and environmental shocks. Farmers face a number of interconnected risks and the uncertainties can cause wide swings in yields and farm income.

Agricultural risks have been grouped into five categories and need to be addressed in order to stabilize farm income namely: production, marketing, financial, legal and human resource risks.

Production risks

Production risks relate to the possibility that your yield or output levels will be lower than projected. Major sources of production risks arise from adverse weather conditions such as drought, freezes, or excessive rainfall at harvest or planting. Production risks may also result from damage due to insect pests and disease despite control measures employed, and from failure of equipment and machinery such as an irrigation pump.

Marketing risks

Marketing risks relate to the possibility that you will lose the market for your products or that the price received will be less than expected. Lower sales and prices due to increased numbers of competing growers, over supply and/ or changing consumer preferences are common sources of marketing risk. Marketing risks can also arise from loss of market access due to a wholesale buyer or processor relocating or closing, or if a product fails to meet market standards or packaging requirements.

Financial risks

Financial risks relate to not having sufficient cash to meet expected obligations, generating lower than expected profits, and losing equity in the farm. Sources of financial risk commonly result from production and marketing risks described earlier. In addition, financial risks may also be caused by increased input costs, higher interest rates, excessive borrowing, higher cash demand for family needs, lack of adequate cash or credit reserves, and unfavourable changes in exchange rates.

Legal and environmental risks

In part, legal risks relate to fulfilling business agreements and contracts. Failure to meet these agreements often carry a high cost. Another major source of legal risk is tort liability - causing injury to another person or property due to negligence. Lastly, legal risk is closely related to environmental liability and concerns about water quality, erosion and pesticide use.

Human resource management risks

Human resource risks pertain to risks associated with individuals and their relationships to each other. These relationships include those with family members, as well as farm employees and customers. The impact of any of these events can be devastating to a farm. Human resource risks also include the negative impacts arising from a lack of people management skills and poor communications.

Strategies for risk management

Managing risk starts with identifying the most crucial risks; understanding the potential impacts and likelihood of undesirable outcomes; and, identifying and taking possible steps to mitigate or lessen the impacts. Risk management cycle involves; - risk analysis; risk prevention and mitigation; building on preparedness; risk transfer; risk response; building resilience and recovery, It is unlikely that an individual farmer understands all the areas of risks faced in a farming business. Farmers need advisory services on risk management (Figure 4.1) which can be sought from bankers, insurance agents, and other service providers. The management of risks calls for innovative approaches for improving the resilience of rural households and leveraging finance and investment. Farming businesses need to be pro-active and enhance capacity to assess, prepare, absorb and adapt to risks. The risk management interventions should build resilience in the farming households and result in sustainable development.

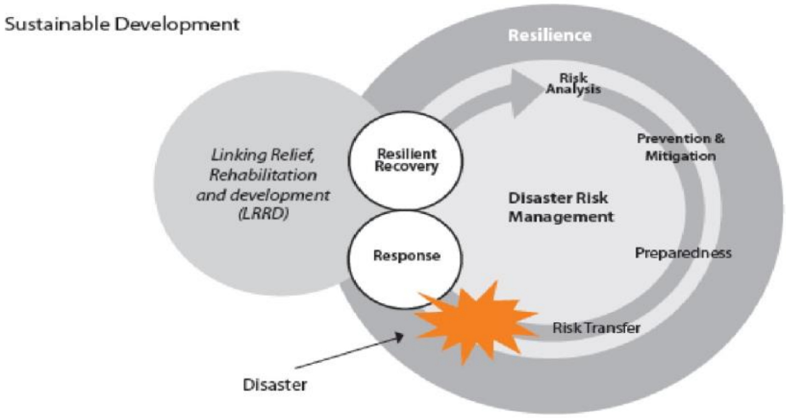


Figure 4.1. Risk management process

There is no single solution for managing agricultural risks and the commonly used strategies include: Livestock and Crop Insurance; Enterprise Diversification; Contract Production; and application of Climate Smart Technologies, Innovations, Management Practices.

Informal risk management strategies

Farmers use a combination of informal innovations and techniques that lead to risk mitigation.

Informal risk management strategies

- On - farm Risk Management Techniques include:- irrigation; crop diversification; conservation agriculture techniques – zero tillage; crop protection/ pest control; and herd shifting
- Self-insurance tools ;- savings; income diversification; asset accumulation; and emergency informal credit - family and chamas.

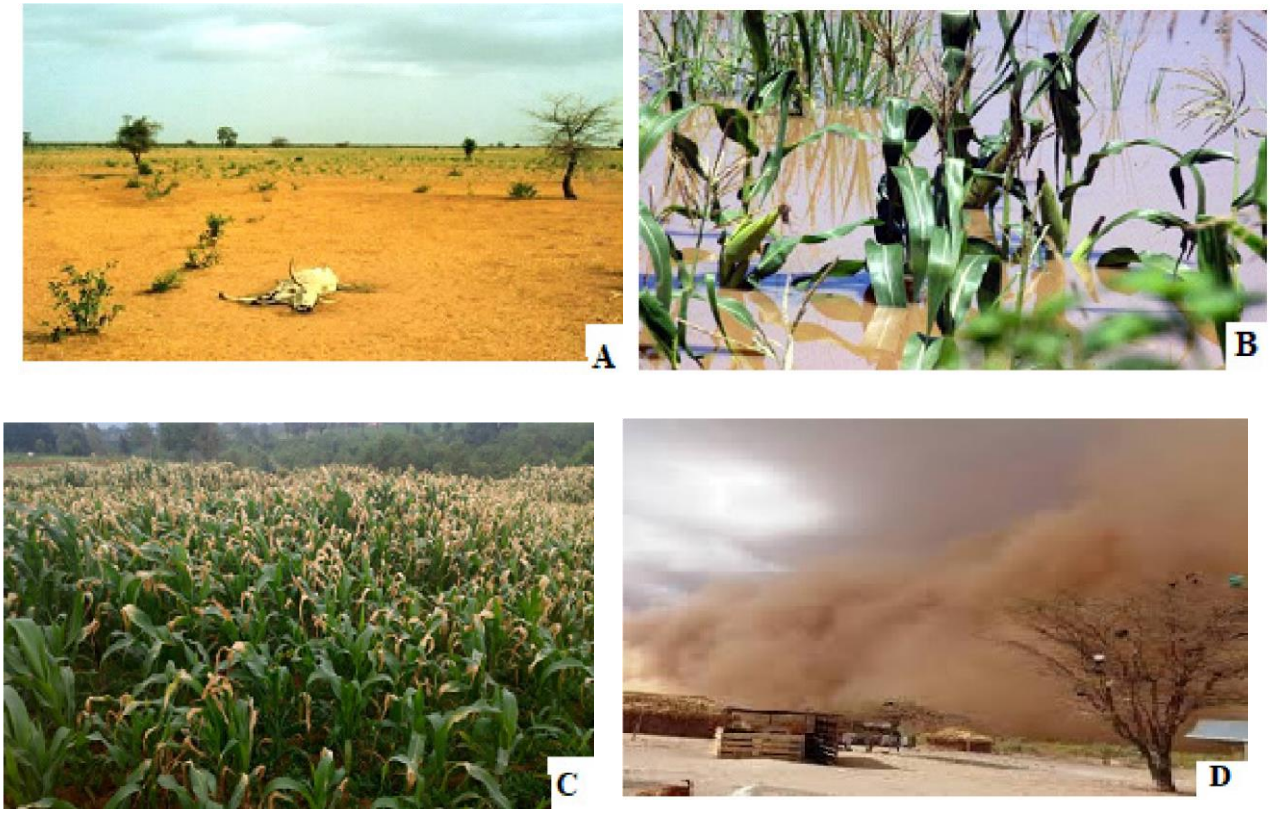
Formal risk management strategies

Various risk management strategies exist and are applied depending on the scenarios.

- **Low risk investments** - avoiding high risk endeavours.

- **Enterprise diversification** - investing in a variety of less than perfectly correlated investments within a portfolio - reduces variability of returns; allow mean returns to be maintained
- **Excess debt capacity** - maintain relatively low debt-to-asset ratios - mitigating financial risk (because of the seasonal nature of production and, hence, revenue generation)
- **Liquid financial reserves** - liquid assets to help mitigate seasonality effects and reduce financial risk including the risk of crop failures
- **Off -farm income** - provides a more stable and, potentially, non-seasonal source of income
- **Shared ownership or leasing** of productive assets - land, buildings, livestock, and machinery - partly or wholly owned
- **Risk Transfer** - shift risk from producers at cost – insurance products; contracts; commodity futures markets

Why focus on agricultural insurance?
Agriculture dependents on physical and market conditions that are uncertain and agricultural entrepreneurs and farmers have to expect, accept, and manage risks to maximize outputs and minimize losses. Farm business operators need to be risk conscious in order to avoid devastating losses. The importance of agricultural insurance cannot be underscored given the significant contribution of agriculture to the economic and social life of rural communities. Climate volatility represents an important aspect of agricultural production and presents major risks to the outcomes of farm investments and thwart agricultural productivity gains especially in the face of climate change. The uncertainty associated with climate variability is a disincentive to investment, adoption of agricultural technologies and response to market opportunities. Physical climate risks are either acute or chronic. Acute risks include droughts, floods, extreme precipitation and wildfires. Chronic risks include rising temperatures, the expansion of tropical pests and diseases into temperate zones, and an accelerating loss of biodiversity. Agricultural insurance serves as a reliable risk mitigation instrument for coping with climate-related hazards as in figures A-D.



A) Prolonged Drought (B) Water Logging Flooding (C) Frost and (D) Air pollution

Types of insurance products

Agricultural insurance is a valuable financial instrument for smallholder farmers. It increases their resilience by avoiding or limiting potentially devastating financial losses and protects farmers from falling into poverty. Insurance also eases access to finance and increases smallholders' productivity. Farmers can confidently invest in enterprise improvement and adopt new technologies that provide increased income and eventual graduation from poverty. Insurance companies in Kenya have developed a variety of products targeting both livestock and crops enterprises.

*Crop insurance product*s

- **Area Yield-Based Index Insurance (AYII)** - This is a multi-peril micro-insurance product rolled out by the Government of Kenya together with other collaborating insurers. It covers smallholder maize and wheat farmers against poor yields due to poor weather and natural catastrophes
- **Weather Index-Based Insurance (WII)** - This product compensates farmers for crop damage as a result of deficit or excesses in weather conditions such as temperature, sunlight, wind speed or rainfall resulting in losses during the length of the crop growth cycle up to physiological maturity.

At the end of each growing season, the weather data collected is automatically compared to an index of historical weather data. If the season's rainfall was, for example, 15% above or below the average, the insurance pay-out owed to client farmers is processed and paid.

Benefits of insurance and weather index for a farmer

- **Peace of mind**. When individuals have insurance in place to deal with the financial burden of losses from insured risks, they are encouraged to invest more in their farms.
- **Risk transfer**. Insurance does not prevent losses from occurring. The primary function of insurance is to transfer the financial consequences of an insured risk to an insurance company.
- **Risk pooling**. Insurance gathers together people who want insurance protection and creates a pool from which contributions of the entire pool compensate the unfortunate few who suffer from loss.
- **Objective measure of loss**. The weather is easy to observe and provides an objective trigger for the insurance payout. Weather events affect large areas simultaneously, index insurance is a good tool for helping farmers farming in similar region.
- **Fast claims process**. Payouts are calculated automatically for all insured farmers under one reference station – there are no claims to file.
- **Preservation of source of income**. Pay outs come quickly to provide compensation when you need it hence improving sustainability of crop production.
- **Boost access to credit**. Financiers are more willing to offer credit because with weather index insurance their risk has reduced. Insurance may also enable contract farming. An agricultural marketing company contracting farmers would be interested in securing continuity of production for their farmers. They identify the crops key risks and would encourage their farmers to protect their inputs and potential harvests against the identified risks

Benefits of livestock insurance

The benefits of Livestock insurance include:

- Enables pet owners to save money when their pet is injured or ill.
- Empowers pet owner to not have to choose between their financial stability and their pet's life.
- Enables pet owners to focus on the health of their pet, rather than the costs of their care

Key points on index insurance

- Index insurance builds resilience and contributes to adaptation both by protecting farmers' assets in the face of major climate shocks, by promoting access to credit, and adoption of improved farm technologies and practices.
- Index insurance triggers pay outs based on an index (e.g., rainfall, remote sensing) that is correlated with losses, rather than actual losses, eliminating costly farm visits to verify losses, reducing administration costs, lowering premiums, and providing more timely payments.
- Weather insurance only covers losses related to a specific weather index - other non-weather risks like pests and disease are not covered
- Payouts are based on the weather observed at the local weather station, not at the

farm. If rainfall is different at the farm than at the weather station, the farmer may not receive a payout even if one experienced a drought or excess rain that damaged his crop.

- Payouts come quickly to provide compensation when a farmer needs it
- There is a cost, premiums. Premium is paid in advance and are non-refundable. Premium covers one season and is not carried over to the next season if there is no payout
- Weather insurance can improve sustainability of crop production using the payout to purchase inputs after a poor season
- Financiers are more willing to offer credit because with insurance reduces their risk.

Livestock insurance products

Insurance companies understand that farmers' livestock form part of their income generating activities. They offer insurance cover for high value animals (dairy or beef) losses/death as a result of; accidents, illness and disease, epidemics, emergency slaughter and calving risks. The companies cover farmers' cattle; dairy and beef from– 3 months to 10 years, sheep and goats from– 2 months to 7 years. It can be extended to cover; Transit risks, Theft cover as well as Loss of income benefit. Livestock insurance covers against losses to animals.

While these policies are usually meant for standard farm animals like horses, poultry, and cattle, they can also cover losses of exotic and aquatic animals. These policies pay to replace livestock that dies, has to be put down, or is stolen.

The insurance company will pay the owner of the animal should the animal die in any of the following circumstances:

- **Accidents:** lightening, internal and external injuries, windstorm, snake bite, electrocution or flooding
- **Illness or disease:** any animal illness or disease
- **In shoats:** Rinderpest, Blackquarter, Hemorrhagic, Septicemia, Anthrax and Food and Mouth Disease, Enterotoxaemia, Sheep Pox, Goat Pox, H.S.B.O.
- **Epidemic:** Widespread outbreak of an infectious disease affecting many animals at the same time in a region
- **Emergency slaughter** on advice of qualified veterinary surgeon following an accident, illness or disease
- Calving, farrowing and kidding complications leading to death of insured animal

These diseases are covered by the policy if the animal is successfully inoculated (protected) and necessary Veterinary Certificates are supplied to the Company

Successful Kenya Livestock Insurance Program Scheme scales up

- Approximately 75% of livestock deaths in the Horn of Africa are caused by severe drought, repeatedly leaving herders, their families and entire communities destitute.
- In October of 2015, the first government livestock insurance scheme in Africa – the Kenya Livestock Insurance Program (KLIP) - was successfully piloted in two counties in the North of Kenya.

- The scheme, which was launched with the support of Andrew Mude, ILRI, 2016 winner of the World Food Prize Award, and Swiss Re, will now be scaled up to benefit herders across the country.
- The programme applies satellite-based index insurance to protect pastoralists in remote areas. Satellites assess the state of the grazing conditions in a certain region by measuring the colour of the ground.
- Green is good while yellow is very dry. Once a certain threshold is reached the insured automatically receive a lump sum payment, allowing them to provide their livestock - which includes cows, goats and camels – with feed and water, to survive.
- The fact that KLIP is designed to keep livestock from dying, allows the pastoralists to hold on to their way of life and means of survival.

Importance/contribution of agricultural insurance to climate resilience

- Increases households or farmers' willingness to invest in CSA technologies
- Improve farmers' access to credit for agricultural activities.
- Supports agricultural and rural development by helping households, financial service providers and input suppliers cope with low-to-medium episodes of covariate risks, for example, drought or excessive rainfall.
- Provides an alternative method of financing disaster reduction assistance or relief programmes.
- High participation in agriculture insurance reduces the need for ad hoc disaster programs which tend to be expensive, ineffective, and inefficient.
- Indirectly curbs emigration from rural areas into urban regions - migration increases in years of low farm production. Agricultural insurance hedges against income disparities and improves producer well-being

Risk financing instruments

It is important to note that numerous non-financial regulation or low-cost solutions are available within Climate Risk Management framework for sustainable development. However, sufficient funding before and after a disaster is necessary. Often, disaster risk financing and insurance-based solutions are criticised for not contributing to prevention and mitigation directly. The availability of funds immediately after a disaster can alleviate this effect.

Summary

- The ongoing risk of climate change (CC) is one of the many challenges facing Kenya's farmers' today
- Insurance-related instruments can support the protection and promotion of sustainable development and human rights
- Careful implementation and management through a comprehensive risk management and risk reduction strategy is needed
- Initiatives are needed to create a conducive enabling environment which encourages innovation, investment, and action
- The right policies and incentives need to be in place so that the challenges imposed by CC on food systems can be addressed

Further reading

APA Insurance. (2020). Government of Kenya partners with insurers to make record crop insurance pay-outs." Accessed February 14, 2020. http://bit.ly/APA-Insurance-Media-Centre.

Baagøe, E., Davidsen, A., Grave, S. and Hanika, S. (2020). Adoption of crop insurance in Kenya: A case study of factors influencing farmers' uptake of maize Insurance in Othaya. PhD Thesis, University of Copenhagen.

CGIAR. (2020). Index-Based Insurance. Index-based insurance. Accessed February 20, 2020. https://ccafs.cgiar.org/ themes/index-based-insurance.

Kenneth Sibiko, Prakashan Veettil and Matin Qaim. (2018). Small farmers' preferences for weather index insurance: Insights from Kenya. Agriculture & Food Security 7, No. 1 (July 1, 2018): 1-14. https://doaj.org/article/ c96bdbc11d1f4ea3bb0a2e597430050c.