



The ABC of Crop Insurance as a Risk Management Tool

A MANUAL FOR FARMERS

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Contents

Introduction	1
Objectives	1
Learning outcomes	1
Chapter 1: Agricultural risks	2
Risks based on the stage/level of the agricultural value chain	2
Risks based on the sources	3
Risks based on scale and frequency of occurrence	3
Why is it important to understand agricultural risk?	3
Chapter 2: Agricultural Risk Management	4
Chapter 3: Understanding crop insurance	5
Types of crop insurance	5
The common types of index-based insurance	7
What are insurable risks?	8
Benefits of crop insurance	8
Chapter 4: Crop insurance journey	9
Clearing misconceptions about crop insurance	11



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Introduction

As a farmer, you face many challenges when managing your farm, such as weather shocks (drought for example), pests and diseases, which determine your yields and incomes. You can control some of these challenges and shocks, but some others are beyond your control.

Risk management mechanisms such as crop insurance help to cushion farmers like you from some of the challenges that are beyond your control. To make good decisions on the insurance product that suits you best, you need a good understanding of how crop insurance works, knowledge on how to purchase crop insurance, and how to receive a payout when you have a loss.

This guide is designed to provide you with information on crop insurance such as advantages of crop insurance, types of crop insurance, what to consider when choosing an insurance policy, the claims process, and the costs associated with crop insurance. All the information provided in this guide will help you to make informed decisions about crop insurance.

Objectives

- ✓ To enhance your understanding of crop insurance for better decision making.
- ✓ To simplify crop insurance and related concepts.
- ✓ To increase your awareness of the role of crop insurance in agricultural risk management.

Learning outcomes

The expected outcome from the manual shall be as follows:



You will understand various risks affecting your farming.



You will understand crop insurance for example the types of crop insurance, and related concepts.



You will understand the insurance journey – how to purchase the insurance and the claim process in the event of a loss.



CHAPTER 1

Agricultural risks

Agriculture is risky. This is because there are many unforeseen events, which negatively affect production, harvesting, post-harvesting, and marketing activities and outcomes. These are called agricultural risks. The risks are also sometimes referred to as perils.

Agricultural risks can be classified into many categories based on:

- 1 The stage (level) of the agricultural value chain that the risks affect.
- 2 Sources of the risks
- 3 Scale and frequency of the risks



Agricultural value chain: The actors and activities involved in producing an agricultural commodity from the farm to the consumer. For example, the maize value chain will consist of input suppliers (fertilizer, seeds etc.), you the farmer, brokers and traders, and consumers.

Hazard: A factor that may cause loss.

It is important to note that these classifications overlap.

1 Risks based on the stage/level of the agricultural value chain

Technological risks

These risks entail uncertainties around technologies. For instance, the current debate on genetically modified seeds is a technological risk (also an institutional risk). Also, when technologies become obsolete when farmers have already incurred costs on these technologies is an example of a technological risk.



Production risks

These risks affect all activities and outcomes relating to production. The risks include all the factors that affect the quality and performance of inputs (for example germination of seeds), and the quality and quantity of yields (outputs).

Market risks

These risks are associated with marketing activities and outcomes. Examples of market risks include fluctuations in input and output prices.

Institutional risks

These risks can also be political risks. They affect the agricultural environment through policies and laws, for example export bans, and taxes.



Financial risks

These risks affect how farm activities are financed. Examples of financial risks include an increase in interest rates, or income shocks that reduce available capital for agricultural investments.

Personal risks

These are risks that affect an individual, and ultimately affect agricultural activities and outcomes. For example, sicknesses reduce labor hours devoted to farming activities.



2 Risks based on the sources

Climate

The main source of agricultural risks is the climate. The elements of the climate associated with risk are usually called hazards.

Main climatic hazards include:



drought



floods



unpredictable rainfall



frost



hailstorms



strong winds

Biological

Some sources of risk are biological.

Examples of biological risk sources are:



pests



diseases

3 Risks based on scale and frequency of occurrence

Agricultural risks occur either at the farm level, or at a regional level. Risks that are unique to individual farms are called **idiosyncratic risks**. For example, if you get low yields, and the low yields are because you failed to take care of your crop, then the low yield is an example of an idiosyncratic risk.

Risks that affect a large geographical region are called **systemic risks**. For example, the recent drought that Kenya experienced is an example of a systemic risk.

Lastly, some risks occur frequently with a certain pattern but have small impacts. These risks are called **systematic risks**.

Some other risks occur less often but cause great loss. These risks are called **catastrophic risks**. Extreme drought, earthquakes and tsunamis cause great damage and are all examples of catastrophic risk.

Why is it important to understand agricultural risk?

In general, risks threaten the livelihoods of farmers. Agricultural risks:

- Reduce farm incomes
- Reduce yields
- Reduce the quality of produce
- Increase the cost of production
- May result in poor access to markets
- May damage assets

Effective risk management depends on the strategies you use as a farmer to manage various risks. Some strategies are effective for some risks and not for others. The choice of strategies depends on other things but importantly your perceptions of the risks, the characteristics of the risks, and the available strategies and resources. We will look at these factors in the next section.

Characteristics of agricultural risks include:

- Severity of the risk (how bad is the risk)
- Frequency of the risk (how soon/often does the risk happen)
- The sources of the risk (what causes the risk)
 - The consequences of the risk (what are the implications of the risk on activities and outcomes).
- Whether the risk is measurable and quantifiable (can we have an objective measure of the risk?)
- The level of the risk (individual level, community or group level, macro-level)
- Is the risk controllable either at farm level or regional level?
- When the risk occurs (this is the timing of the risk; is it at harvest, before harvest, or before planting)
- Is the risk correlated with other risks?



CHAPTER 2

Agricultural risk management

Agricultural risk management refers to the various efforts and strategies that farmers like you use to prevent, cope, and mitigate risks in your farming.

For example, a farmer will use irrigation to avoid the negative effects of a drought. Or a livestock keeper will produce forage during the wet season and store for the dry season to avoid feed shortage for her livestock during the dry season. Or a farmer will use improved seed varieties that mature fast to escape a dry season, or those that are drought resistant.

The strategies used by farmers can either be **on-farm** strategies or **market-based**.



On-farm strategies are those usually employed on the farms by the farmers. They include the three examples provided above. On-farm risk management strategies can be done by individuals, or by groups of farmers, or even cooperatives. Some farmers form groups to help each other access agricultural inputs, and credit. Such arrangements where farmers manage some risks through some form of organization is sometimes referred to as “informal” risk management.



Market-based risk management strategies are those that involve a third party and are usually driven by the market forces of supply and demand. An example of a market-based risk management strategy is insurance, contracts, and credit. We discuss this more in the module on crop insurance.

Based on the type and characteristics of a risk, farmers can use the risk management strategies in anticipation of the risk (before the risk occurs). This is called ex-ante risk management. For example, farmers may construct dams to harvest water in the dry season to harvest water in the rainy season.



Ex-post risk management entails strategies used once the risk has occurred.



CHAPTER 3

Understanding crop insurance

Crop insurance is a market-based risk management strategy through which farmers transfer risk to another party, usually an insurance company.

Types of crop insurance

There are numerous types of crop insurance available to you. The common types of crop insurance are:

- 1 **Indemnity based products:** The insurer verifies losses at farm level and pay-outs are made based on these individual farm level losses. Indemnity based insurance can be:
 - a. Named peril products: These products cover a specific risk (one risk).
 - b. Multiple peril products: These products cover more than one peril such as diseases, hail, frost, drought and many more (covers many risks).

- 2 **Index-based insurance:** Instead of verifying actual losses on individual farms, index-based insurances use an agreed upon objective, verifiable measure that is strongly correlated with the insured interest (usually yield). This means that the insurer doesn't have to verify losses on individual farms. There are several indices used for crop insurance. We will discuss the various indices in the following sections.

There is another form of insurance that is not market-based called "informal" insurance (risk management). Usually, farmers organize themselves into groups that help them to buy inputs at a lower price, or sell outputs at higher prices, or provide for group members who experience some form of financial, or consumption shock.



Key terms related to crop insurance that you need to know

Term	Definition
Coverage	The period over which the insurer from the identified event protects the insured.
Insured	The person buying the insurance protection from the insurer. The farmer (you).
Sum insured	This is the total value of the property to be insured. It is the maximum amount of money agreed upon that can be compensated by the insurer in the event of the identified risk.
Insurable interest	This is what you insure. For example, you can insure yield, output prices (or revenue in some cases), farm equipment such as tractors, or inputs such as seeds and fertilizer.
Contract	A legally binding agreement between you the farmer and the insurance company providing you with the insurance. The contract is sometimes called a "policy".
Premium	A calculated fee that acts as a small contribution that a farmer pays to the insurance company in return for the insurance coverage. The accumulated money is used to compensate the few who suffer losses.
Claim	Application for compensation by the farmer after suffering a loss
Pay-out	This is the money a farmer receives as compensation after putting in a claim.
Risk/peril	This is the risk covered. Risks that can be insured have certain characteristics as we will discuss.
Risk pooling	A form of grouping where insurance companies take contributions in the form of premiums from many people exposed to similar risks and pays the few who incur losses. Risk pooling spreads the financial burden among those who contribute to the pool. It assumes that the losses of the unfortunate few will be compensated by the fortunate many.

The common types of index-based insurance

Weather index insurance (WII)

This insurance is based on a weather variable (e.g., rainfall, temperature, wind speed, etc.). Instead of using actual yields on the farm to determine losses, an agreed upon threshold of the subject weather element (rainfall or temperature) is used such that if the rainfall for example is below this threshold, there is a trigger, which means that the farmer suffered a loss.

The index is constructed using an indicator (rainfall, or temperature) that highly affects yield.

The weather information used is usually collected at weather stations located in various places say of a county. However, advancements in technology have enabled collection of weather data using satellites, which are more accurate than the information from the weather stations. Information from weather stations is inadequate especially if the weather stations are sparsely located.

The biggest challenge with weather-based insurance (and generally index-based insurance) is when the index used does not reflect the actual losses on the farm. This is called **basis risk**. In other words, you may suffer a loss because there was no rain but the information used to make the insurance product show that rain was sufficient.

Basis risk does not occur because the insurer is malicious. Rather, it is a result of the quality of data used to make the insurance product. Modern technology is helping insurers to develop products that reduce the chances of losses on the farm not reflecting in the product, for example by using satellite data as we already saw above.



1. The payouts happen automatically once the index conditions are satisfied (triggered). In other words, it is important for the farmer to understand conditions at which index payments would be triggered to justify any claim for a loss.
2. The index itself is built based on the local conditions. Because satellites have a wide coverage, the weather data collected by the satellites are representative hence more accurate than the information collected at weather stations.
3. Weather-index insurance is more objective in the sense that not even the insurer can manipulate whether a loss is triggered or not.
4. Basis risk is a problem of how the product is designed and is not a problem of the insurer.

Area yield index insurance (AYII)

This type of insurance is based on average losses at a regional level, usually called a Unit Area of Insurance (UAI). The pay-outs are based on crop cuts.

In case of a loss, the insurer provides the same payout to all farmers against an estimated reference average yield (the 'yield index') of the area.

For instance, under the Kenya Agriculture Insurance Programme (KAIP), farming areas are divided into insurance units – if average production in one of the units falls below a threshold, all insured farmers in the unit receive a payout.



Benefits

- ✓ Covers an entire geographic area rather than individual farms, reducing the risk for insurers and premiums for farmers.
- ✓ The government to make it more affordable for farmers can subsidize premiums.
- ✓ Claims are based on the performance of the region or unit of insurance, making it easier to determine losses.

Risks

- ✗ Coverage may not be specific enough to your individual farms or crops.
- ✗ There may be limitations on the types of perils covered, with some policies only insuring against drought or flood.
- ✗ Claims may be delayed if there is a dispute over whether losses were caused by the covered peril or other factors.



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What are insurable risks?

It is important for you to carefully consider available products options and choose the type of crop insurance that best suits your needs and circumstances. Each type of insurance has its own advantages and disadvantages, and you should take the time to fully understand the terms and conditions of each policy before deciding.

Remember, crop insurance is important in covering risks that are beyond your ability to control. In addition, not every risk that you cannot control as a farmer can be covered by insurance.

Those risks that **can** be covered by insurance are called **insurable risks**. Insurable risks have the following characteristics:

- The risks are measurable and can be quantified to enable loss estimation.
- The risks are not correlated with other risks.
- The risks are beyond the control of the farmer. In other words, they are not caused by intentional human actions. Intentional human actions may include government regulations or farmers failing to take care of their crops.
- The risks have some known frequency with which they occur. This characteristic enables measurement and quantification.
- The risks have adverse effects on the farmer, but the consequences are not catastrophic. However, recent innovations enable covering catastrophic risks.

Benefits of crop insurance



Enhances your ability to manage agricultural risks affecting your farming



Insured farms may have greater access to agriculture credit since a crop insurance policy document can serve as collateral for an agricultural loan



When insurance increases access to inputs and markets, your farm incomes can increase



Insured farmers are likely to be less worried about production and marketing uncertainties since insurance cushions you from the production and marketing shocks



CHAPTER 4

Crop insurance journey



1 Assess your risk management needs for your crop

- a** **What risks do you face** as a farmer (dry spells/drought, pests and diseases, frost, fluctuating input prices, fluctuating output prices, quality of inputs)?
- b** **What crops do you want covered** (usually you consider your most important crop, or that crop that is most vulnerable to climate related risks)?
- c** **What level of coverage do you need** for your crops (what is the amount of sum insured, how many acres)?
- d** **What is the value you want to insure** (inputs or input prices, a loan, yield, or output prices)?



2 Choose an insurance provider

- a** **Look for information about different insurance providers** before choosing your insurer. The insurer you choose should:
 1. Offer the insurance product most relevant to you at an affordable price.
 2. Reliable and reputable (discuss with fellow farmers who have experience with the insurer)
- b** **Know the premiums payable and payment arrangements**
 1. How much premium is charged
 2. Are premiums paid at the start of the season, or after harvest? Can the premium be paid in instalments?
 3. How are the premiums paid (Mpesa, cash, or deducted from crop revenues)
- c** **Check the terms and conditions**
 1. What risks are covered
 2. Which crops are covered
 3. Which growth stages of the crop are covered
 4. How are claims made
 5. To whom should you make the claims
 6. How long does it take to be compensated after a claim
 7. What percentage of the risk does the insurance cover
 8. What are the chance of no payout even when you suffer a loss



3 Purchase the crop insurance product

- a** **Usually, you can purchase crop insurance from:**
 1. Credible brokers
 2. Insurance agents
 3. The insurers
- b** **You can also subscribe to a crop insurance scheme using your phone.** For example, ACRE AFRICA sends messages to farmers with a code that you use to register.



4 Underwriting process

- a** **Your preferred provider will evaluate your application** and assess your farm, crops selected and the risks
- b** **The underwriter will determine the premiums** based on the level of coverage and risk assessment
- c** **If approved, then you will be registered.** You will then be requested to sign a policy document (contract)



5 Paying premiums

- a** **Can be done via Mpesa or cash.** In cases where there are arrangements with an off taker (an organization that buys produce from farmers), the premium is deducted before you receive proceeds from your produce
- b** **Understand the payment schedules**



6 Making claims

- a** **Making a claim will depend on the product you purchase**
- b** For **index-based** products, the index automatically registers a loss
- c** For **indemnity-based** insurances, someone usually comes to the farm to verify the losses



7 Receiving compensation

- a** If eligible for compensation as per the agreement with the insurer, then **you will receive a payout for any loss you suffer**
- b** **Remember that compensation occurs only when the loss you suffer is caused by the risk you insured for.** For example, if you buy rainfall insurance only, and in that season, there is an outbreak of pests, you will not receive a payout. However, if the insurance you buy covers both rainfall and pests, then you will receive a payout



Clearing misconceptions about crop insurance

Myth	Truth
Once a farmer has bought crop insurance, there is no need to take care of the crop	No! Farmers should adopt good agricultural practices. Crop insurance adds an extra layer of protection for farm investments. Good agricultural practices and crop insurance are complements
Farmers always get a payout once they have taken an insurance	No! Farmers do not always receive payouts. Whether a farmer receives a payout depends on whether losses occurred. For index insurance, the index MUST show that there was a loss (for example that rainfall was below the agreed upon minimum amount). For indemnity insurances, the losses must be verified.
Someone always assesses losses at the farm level once a claim has been raised	No! It all depends on the type of insurance product. For multiple peril products (indemnity based), a few farms are sampled. Farmers are then compensated based on the yield from the sampled farms, and the threshold as agreed upon in the insurance term sheet/contract/policy. For index-based products, the index triggers once a certain condition is achieved. Nobody goes to the farm to verify losses. Data used to make the indices are collected by satellites.
All insurance providers are scams!	No! There are credible insurance providers. Modern innovations reduce the chances of insurers behaving strategically. For example, the triggers are not controlled by the insurer for the case of index-based insurance. The payouts are not also controlled by the insurer.
All insurance products are the same. Therefore, farmers do not have to worry about the perils covered by an insurance product	No! There are several insurance products in the market. Different products cover different risks. In addition, different products work differently. Therefore, farmers should assess an insurance product carefully before purchasing it.
Crop insurance is for the rich farmers	No! Crop insurance is for all. Remember that crop insurance provides protection against risks. Good management of agricultural risks means high yields, and high revenues. Farmers pay premiums according to the number of risks insured, size of land they have planted, their risk profiles (farmers who use good agricultural practices are likely to pay low premiums), and their sum insured.

Myth	Truth
Nobody understands how premiums are calculated	No! The amount of money a farmer pays for an insurance product is objectively determined. Factors that influence the amount of premium paid by the farmer include: 1. Farm size. 2. Risk exposure of the farmer (location of the farm). 3. Type of crop. 4. Variety of the crop. 5. Sum insured. 6. Risk profile of the farmer (whether the farmer uses good agricultural practices)
All insurance products cover the farmer from all perils	No! Insurance only covers the perils as agreed in the insurance policy. If the policy covers excess rainfall, a farmer will receive a payout from losses from excessive rainfall only. Different products cover different perils. The more the perils, the higher the premium. Also remember that insurance DOESN'T cover all risks. Some risks are not insurable. Please go back to page 11 to see the characteristics of insurable risks.
Crop insurance suffers from the same old problems	No! There are several innovations addressing the various challenges of crop insurance. For example: Innovations in product design: Aim to reduce basis risk, reduce transaction costs when purchasing insurance as well as putting in claims, and automation of payouts.



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