Fact Sheet 1

Disaster Risk Financing & Insurance Program

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Introduction to Disaster Risk Financing for Agriculture

This knowledge series aims to bridge the knowledge gap for government officials and practitioners about the development and use of disaster-responsive financing mechanisms and instruments for the agriculture sector. Completion of the series will provide a grounding for Ministries of Finance (MoFs) and related ministries to establish, evaluate, and implement Disaster Risk Financing Agriculture (DRFA) programs as part of an overarching risk-financing strategy. The content builds on the Fundamentals of Disaster Risk Financing (FDRF) training series, which provides an overview of the principles of disaster risk financing and their application in different contexts. Familiarity with the FDRF content is assumed as a basis for this DRFA webinar and fact sheet series, and further resources and information can be found here.

Disaster Risk Financing for Agriculture

Introduction

Poverty remains a predominantly rural problem, with a majority of the world's poor engaged in agricultural practices in rural areas that are most exposed to climate change. The Food and Agriculture Organization (FAO) of the United Nations reports that between 2005 and 2015 natural disasters alone cost US$96 billion to economies of developing countries in the form of damaged or lost crops and livestock.[1] Vulnerability to disaster risk is compounded by low access to suitable and affordable climate-risk insurance products and services. Effectively managing the risk of losses in agriculture starts with a proper understanding of risk and the financial mechanisms that can respond to disasters, as well as with strong, well-informed institutions and partnerships. We refer to this set of tools as Disaster Risk Financing for Agriculture (DRFA).

Different risks, objectives, sectors, and populations will require different approaches to building financial resilience. In line with this principle, DRFA should sit as part of a holistic disaster risk financing (DRF) strategy that focuses on risks to a range of sectors of the population and economy. Such a strategy would ensure the strength of a country as a whole by considering financial resilience for different segments and needs separately. It also considers as a whole to ensure comprehensive resilience and to maximize the value of risk data, expertise, institutions, infrastructure, and budgets.

DRFA plays a critical role; however, DRFA must be part of a broader agricultural risk management approach. Risks in agriculture are diverse—ranging from an incident of localized hail to regional droughts and flooding—and require different strategies to mitigate, cope with, or transfer risks. A comprehensive system can provide means to address risks according to their specific nature and challenges.

1 UN News, "Disasters Cost Billions in Agricultural Losses, Poor Farmers Bear Brunt—UN Report," March 2018, https://news.un.org/en/story/2018/03/1005012.

What Is DRF for Agriculture?

DRFA focuses on achieving a balance of financial mechanisms that maximize the welfare for households, the economic activity and resilience for communities, and the budget efficiency and certainty for governments. In particular, DRFA advocates for financial mechanisms that can be put in place before the fact (ex ante) to increase certainty of financing and planning.

Household Resilience

To manage disaster risks, small farmers in developing countries rely on a wide range of ex ante risk-management practices or ex post coping strategies or both (see figure 2). These practices typically vary by the frequency and severity of the shocks as follows:

Frequent and localized risks resulting in small losses: These are part of the normal business environment and are managed at the individual farm level through the resilient farming practices, the informal risk sharing in a community, or the financing through savings and credit.

Larger, infrequent risks that cannot be managed and retained by farmers: Farmers traditionally have had to fall back on mechanisms such as reduced consumption, forced sales of assets to achieve consumption smoothing, or even migration.[2] Here, disaster risk-financing mechanisms such as micro-insurance can avoid the need for damaging coping mechanisms and can protect rural households' welfare against the negative impacts of shocks. (See figure 1.)

FIGURE 1: Formal and Informal Risk Management Mechanisms According to Severity of Risk

DEGREE OF RISKS	INFORMAL MECHANISMS	FORMAL MECHANISMS	
	HOUSEHOLD OR COMMUNITY	MARKETS	GOVERNMENT
Non-specific	• Avoiding exposure to risk • Sharecropping • Using farmer self-help groups • Planning for water resource management	• New technology • Improved seeds	• Irrigation infrastructure • Agriculture research and extension • Early warning systems • Weather data systems
Low	• Crop diversification • Savings in livestock • Food buffer stocks	• Formal savings	
Moderate	• Labor diversification • Risk pooling (peers, family members) • Informal lending	• Formal lending (credit) • Risk sharing (input suppliers, wholesalers)	• State-sponsored lending • Contingent credit • Credit-guarantee schemes • Risk-sharing facilities • Shock-responsive social protection
High/ Catastrophic	• Reduce consumption. • Remove children from school. • Sell productive assets. • Default on loans. • Plan for migration. • Do nothing.	• Insurance (indemnity and index)	• Ad-hoc disaster relief • Social funds • Catastrophe bonds • State-sponsored parametric insurance • Shock-responsive social protection • Credit-guarantee schemes • Risk-sharing facilities

Source: CRMG, World Bank

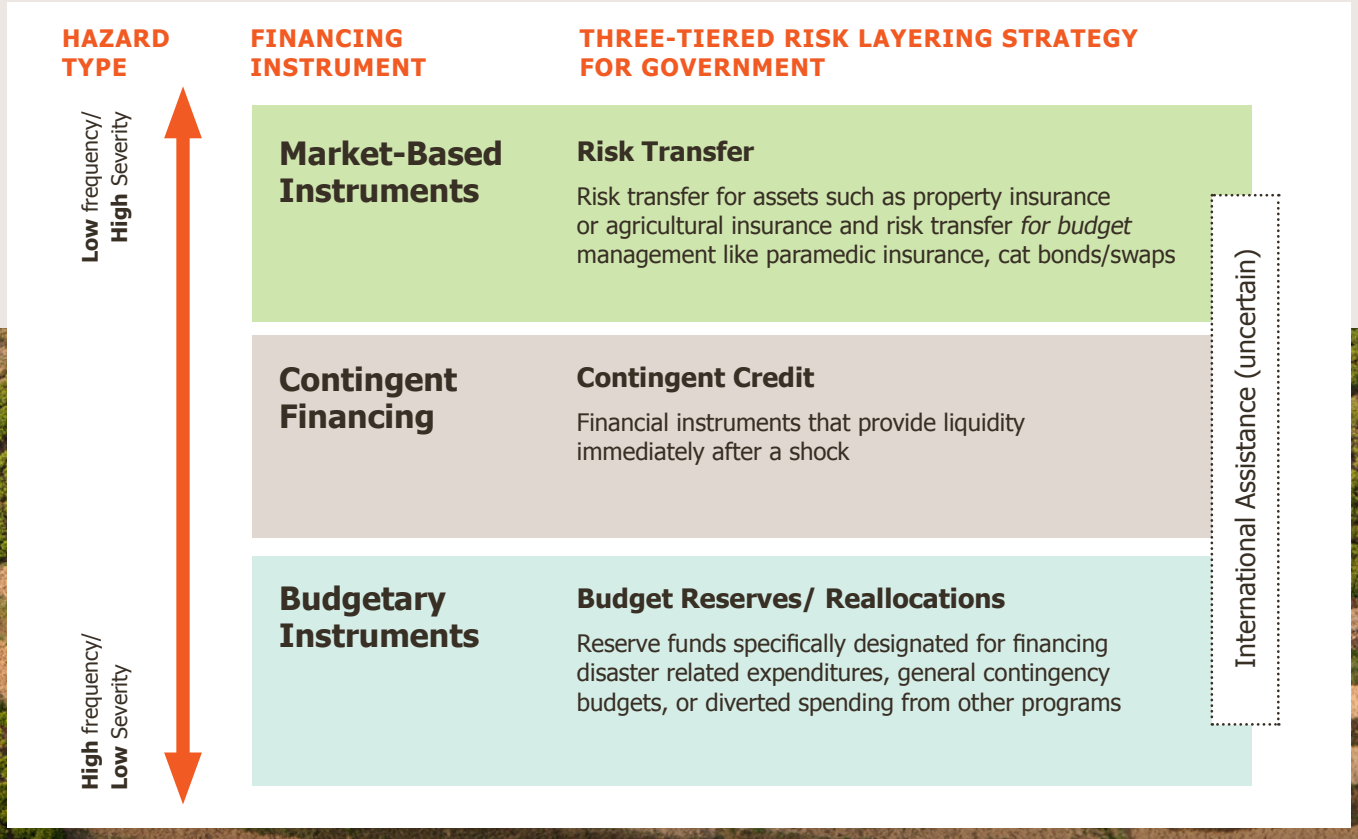
2 Sarah A. Janzen & Michael R. Carter, 2013. "After the Drought: The Impact of Microinsurance on Consumption Smoothing and Asset Protection," NBER Working Papers 19702, National Bureau of Economic Research, Inc.

Government-Led Response and Resilience

Governments, development partners, and humanitarians provide support so economies and households can manage the impact of disasters on household welfare, food security, and economic output. Traditionally, the main response of governments and international humanitarian agencies to natural disasters has been through ex post disaster relief programs. Such an approach is often ineffective because of a lack of clear planning, coordination, and certainty and speed of financing. The resulting delays in mobilizing funds means that those potential funds are often too late to save the livelihoods of the intended beneficiaries.[3]

DRFA mechanisms can be put in place at a sovereign level to build financial resilience and to support both the focused, clear planning and the coordination of response. Such mechanisms consist of two elements: (a) a set of rules and systems to channel resources where they are needed (such as vulnerable farmers, Micro, Small and Medium Enterprises (MSMEs) or local governments); and (b) a financing instrument to ensure resources are available when needed. A variety of financial instruments can be used as part of a DRFA mechanism, depending on the context and specific risk to cover. Those instruments can broadly be categorized as risk-retention instruments such as budget reserves, for frequent costs or contingent credit, or for more severe and less frequent costs; and risk-transfer instruments such as insurance and catastrophe bonds. (See Figure 2) More information about such instruments and their benefits can be found in the fundamentals section of the DRF course. Link available here.

FIGURE 2: Layering of disaster risk financing instruments



3 Hazell P.B.R., and U Hess 2010. Drought insurance for agricultural development and food security in dryland areas. Food Sec. (2010) 2:pages 239-405

Why Adopt and Develop DRFA?

Governments can achieve a range of public policy objectives through DRFA. Given the breadth of the DRFA toolkit, effective design and implementation of DRFA mechanisms will depend on policy goals. DRFA can support the following:

- Stabilizing food production and food security at individual farmer, regional, and national levels in times of severe climatic shocks to the agriculture sector
- Maintaining rural livelihoods and incomes and reducing urban migration in times of major climatic shocks
- Increasing access to agricultural finance, particularly by small-holder farmers to enable them to invest in modern inputs and to increase their production and incomes
- Increasing agricultural output and economic growth through increased household and value chain investment
- Increasing adoption of savings and credit and of agricultural insurance among the rural population, thereby reducing the need for a government to provide ex post disaster relief
- Providing greater budgetary efficiency stability and certainty when compared to ad hoc and ex post disaster relief
- Establishing the reduced impact and cost of disasters (early response to shocks such as droughts can significantly increase the effectiveness of response and reduce the cost to the economy)[4]

Private sector organizations may also achieve their objectives through effective DRFA schemes, which could in turn drive economic growth and employment. The following are examples:

Banks and MFIs

- A reduced risk of default from "loanee" farmers whose losses are protected
- An enabling of increased lending to the agricultural sector through new forms of collateral

Insurers

- Additional volume of business to help spread costs and increase access to the population
- Greater diversification of risk, which should maintain financial stability
- Increased information to understand and underwrite the risk
- Strengthened culture of financial protection and insurance

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4 The Economics of Resilience to Drought: Resilience. (2018, January 31). https://www.usaid.gov/resilience/economics-resilience-drought Hill, Ruth; Skoufias, Emmanuel; Maher, Barry. 2019. The Chronology of a Disaster : A Review and Assessment of the Value of Acting Early on Household Welfare. World Bank, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/31721

One Size Does not Fit All:

Different Segments of the Rural Population Need Different DRFA Solutions

In developing countries, the rural population is often highly dependent on agriculture as its main source of employment, livelihoods, and income. Rural farming households (HHs) comprise the following: (a) landless laborers and tenant farmers who are often chronically poor, vulnerable subsistence farmers; (b) emerging smallholder or semicommercial farmers who produce crops and livestock for family consumption and for sale; and (c) medium- to large-scale commercial farmers who produce for sale. Each segment of the rural and farming population is exposed to a lesser or greater degree by climatic shocks. However, one size does not fit all, and each segment has different risk management and DRF needs.

For example, governments and donors may intervene to finance ex ante planned food or cash transfer and social protection programs for the most vulnerable. Small and medium enterprises as well as smallholder farmers can benefit from credit guarantees, micro-index insurance, or other microfinance initiatives. At the other end of the spectrum, medium and large commercial farmers purchase commercial agricultural insurance to protect their production and incomes.

FIGURE 4: Kenya Case Study: Segmenting the Rural Population and Different DRFA Instruments for Each Segment

Risk Financing Instrument	Income Level	Livestock Safety Net and Insurance Program	Target Audience	Cost Share
Commercial Micro-Retail Livestock Insurance (IBLI)	Above	ILRI-IBLI Subsidized commercial livestock insurance	Medium-large Pastoralists	Partial premium cost sharing by SDL-GOK
Macro-level Drought Risk Insurance (Disaster Protection)	Low Income	SDL Macro-level NDVI insurance program for 70,000 vulnerable pastoralists above HSNP poverty levels	Vulnerable Pastoralists 5 – 20 TLU's	Premium 100 % subsidized by SDL-GOK
Scalability Mechanism – Drought Risk Fund	Vulnerable	Hunger Safety Net Program (HSNP), providing SCALABLE cash transfers to an additional 180,000 vulnerable households	None or very few livestock	Costs 100 % subsidized by NDMA
Cash Transfers Social Protection Fund	Chronically vulnerable	Hunger Safety Net Program (HSNP), providing non-conditional cash transfers to 100,000 very poor households.	None or very few livestock	Costs 100 % subsidized by NDMA

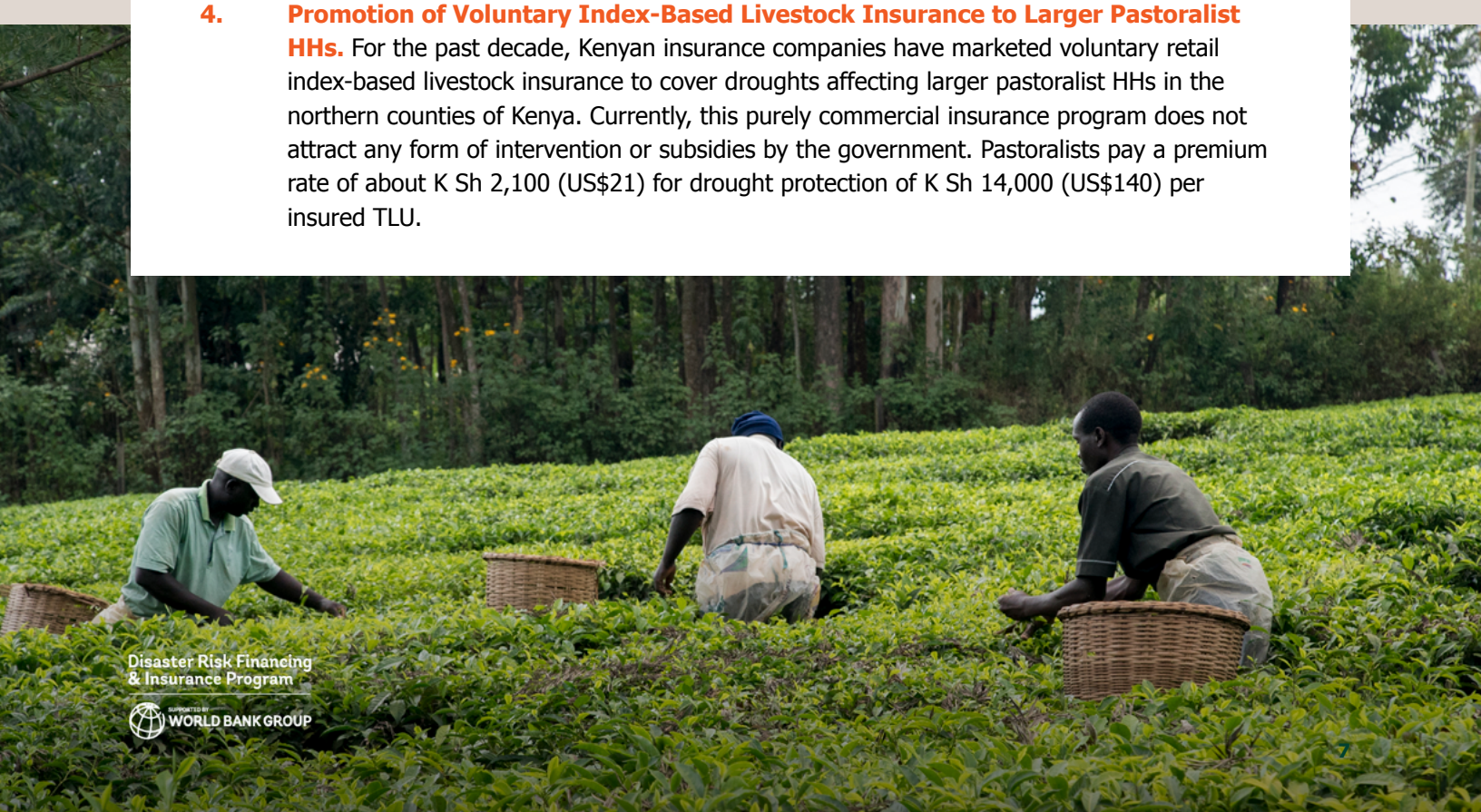
In Kenya, a country that is highly exposed to droughts, the government, donors, and private sector insurers have developed a comprehensive suite of DRF mechanisms for different segments of the population. In particular, the mechanisms largely target households (HHs) in the northern semi-arid counties—HHs that mainly depend on agriculture and livestock rearing for their livelihoods and incomes.

1. **Regular Cash Transfers for Chronically Poor HHs:** The Hunger Safety Net program (HSNP) is an unconditional cash-transfer program targeted at the poorest 100,000 HHs living in the four northernmost counties of Mandera, Marsabit, Turkana, and Wajir. Those regular beneficiaries receive cash payouts of K Sh 5,400 (about US$54) every two months. with payments made directly to their individual bank accounts.

2. **Emergency Cash Transfers to Very Poor HHs in Event of Severe Droughts:** HSNP uses satellite imagery to detect the onset of severe droughts and then to scale up early cash transfers of K Sh 5,400 (about US$54) to an additional 180,000 vulnerable HHs for each month that severe drought conditions persist.

3. **Government Drought Index Insurance Program for Vulnerable Pastoral HHs:** Starting in fiscal year 2015/16, under the Kenya Livestock Insurance Program (KLIP), the government of Kenya was the first government in Africa to use satellite pasture-drought index insurance to trigger timely payouts to pre-identified vulnerable pastoral HHs. This approach enables pastoralists to keep their core breeding animals alive during major droughts and to build drought resilience and livelihood protection. The government finances the full insurance premiums for 5 Tropical Livestock Units (TLUs) per household, and it pays out a maximum compensation of K Sh 70,000 (US$ 700) to benefit HHs in times of severe drought. KLIP is currently insuring about 20,000 vulnerable pastoralist HHs in 10 counties in northern Kenya.

4. **Promotion of Voluntary Index-Based Livestock Insurance to Larger Pastoralist HHs.** For the past decade, Kenyan insurance companies have marketed voluntary retail index-based livestock insurance to cover droughts affecting larger pastoralist HHs in the northern counties of Kenya. Currently, this purely commercial insurance program does not attract any form of intervention or subsidies by the government. Pastoralists pay a premium rate of about K Sh 2,100 (US$21) for drought protection of K Sh 14,000 (US$140) per insured TLU.

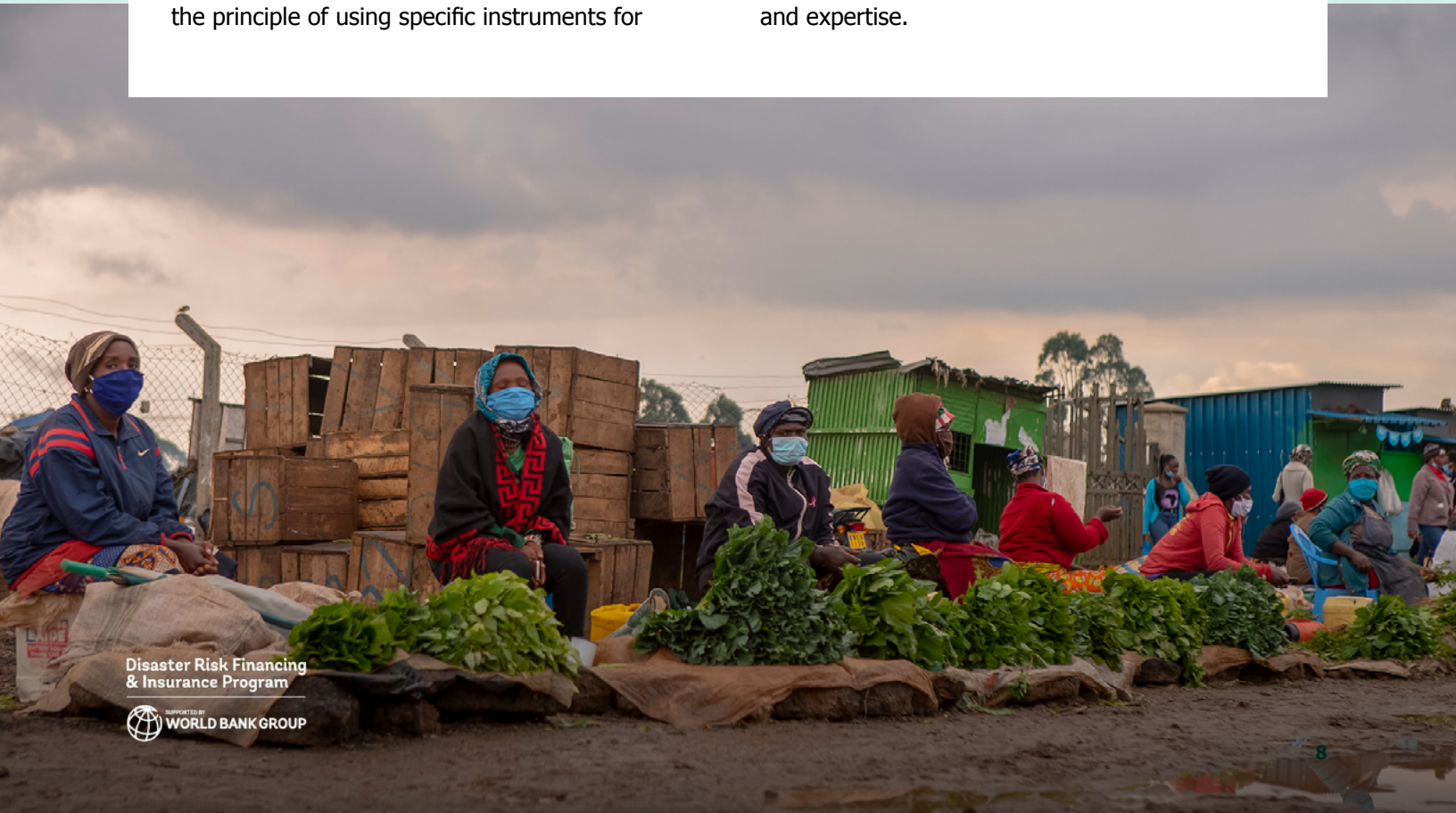


Agriculture and COVID-19

At time of writing, countries across Africa and South Asia are grappling with the compounding impact of COVID-19 on simultaneous ongoing shocks, including floods, drought, locust swarms, and economic turmoil. COVID-19 can be thought of as an 'unknown unknown' in contrast to the 'known unknowns' such as floods or droughts which are typically addressed by insurance and DRFA – we don't know exactly when these happen or what their cost will be, but we are aware of the risk and can often carry out analysis to help understand it better.

Against the backdrop of COVID-19, where many countries and organizations did not anticipate the possibility of a global pandemic, we are reminded of the importance of flexible and strong systems to respond to a range of crises. In particular, the principle of using specific instruments for specific needs is important here: insurance can be effective for crop losses from drought, for example, but this effectiveness could be complemented by more flexible instruments such as contingent credit that can contribute to a response to unknown unknowns and to risks that are not easily modeled.

During a period when government fiscal space is increasingly constrained as a result of COVID-19, the importance of working in partnership with the private sector is further elevated. Commercial insurers can help the government achieve policy objectives—such as increasing household resilience and reducing a burden on the public purse—through disaster insurance markets. Insurers can provide significant additional value through provision of capital, infrastructure, and expertise.



Key Takeaways from Fact Sheet 1

- DRFA plays a critical role but one that must sit as part of a broader agricultural risk-management approach that recognizes the important role that farmers and their organizations can play in managing risk.
- Sound national DRFA programs should consider the risks to households, economies, and governments; to institutions, infrastructures, and regulations; and to technology, data, and experience of DRFA.
- The most effective DRFA programs in low- and middle-income countries have been built around public-private partnerships.
- One size does not fit all. Each segment of the rural farming population from landless laborers to large commercial farmers has its own DRF needs. Therefore, the design of DRF solutions must be tailored according to each segment's needs.
- Agricultural insurance is one widely-available DRFA tool that can transfer catastrophe risks outside farmers' control. However, it is not a panacea for all the development problems and constraints faced by farmers in low- and middle-income countries.

GLOSSARY

Agriculture Insurance
Insurance applied to agricultural enterprises. Types of business include crop insurance, livestock insurance, aqua-cultural insurance and forestry, but insurance normally excludes buildings and equipment although they may be insured by the same insurer under a different policy. (See aqua-cultural insurance, crop insurance, livestock insurance).

Catastrophe Bonds
An insurance-linked security in which payment of interest or principal or both is suspended or canceled in the event of a specified catastrophe such as an earthquake.

Contingent Credit
A financial tool that provides governments with immediate access to funds following disaster events and enables a more rapid and efficient response. This type of financing is typically used to finance losses caused by recurrent natural disasters. A line of contingent credit is an ex ante instrument that allows borrowers to prepare for a natural disaster by securing access to financing before a disaster strikes.

Disaster Risk
The potential loss of life, injury, or destroyed or damaged assets that could occur to a system, a society, or a community in a specific period of time. The loss is determined probabilistically as a function of hazard, exposure, vulnerability, and capacity.

Disaster Risk Finance
The financial protection of populations against disaster events. Disaster risk-finance strategies increase the ability of national and local governments, homeowners, businesses, agricultural producers, and low-income populations to respond more quickly and resiliently to disasters.

Disaster Risk Management
The systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies, and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster.

Draught Index Insurance
It pays out benefits on the basis of a predetermined drought index for loss of assets and investments, primarily working capital, resulting from weather and catastrophic events.

Ex Ante
Latin for "from before." In the context of disaster events, ex ante instruments are arranged before the event, and ex ante decisions are made at that time as well.

Ex Post
Latin for "from after." In the context of disaster events, ex post instruments are arranged after the event, and ex post decisions are made at that time as well.

Food Security
It exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.

Indemnity Insurance
An insurance policy pays claims based on the actual economic losses incurred by the policyholder. Index insurance is an insurance policy that pays claims based on an index. Indexes are typically chosen to be a good proxy of the economic losses incurred by the policyholder.

Index Insurance
It pays out benefits on the basis of a predetermined index (e.g., rainfall level) for loss of assets and investments or loss primarily of working capital, such losses resulting from weather and catastrophic events.

Microinsurance
Insurance services are offered primarily to clients with low income and limited access to mainstream insurance services and other means of effectively coping with risk.

Natural Disaster
This extreme event leads to loss of lives and livelihoods caused by natural hazards such as tropical cyclones, earthquakes, floods, and landslides. Parametric insurance is a type of insurance that does not indemnify the pure loss but ex ante agrees to make a payment upon occurrence of a triggering event. The triggering event is often a catastrophic natural event, which may cause a loss.

Parametric Insurance
This type of insurance does not indemnify the pure loss but ex ante agrees to make a payment upon occurrence of a triggering event. The triggering event is often a catastrophic natural event, which may cause a loss.

Risk Financing
It determines how to pay for events that cause losses in the most effective and least costly way possible. Risk financing involves the identification of risks, determines how to finance the risk, and monitors the effectiveness of the financing technique that is chosen.

Risk Management
It takes care of risk to maintain income and to avoid or reduce loss or damage to a property resulting from undesirable events. Risk management therefore involves identifying, analyzing, and quantifying risks and taking appropriate measures to prevent or minimize losses. Risk management may involve physical treatment such as spraying a crop against aphids or planting windbreaks or having a financial treatment (e.g., hedging, insurance, and self-insurance).

Risk Pool
It is an arrangement whereby several individuals, companies, or countries jointly insure against a certain prespecified risk. The risk-retention instrument is a means whereby a party retains the financial responsibility for loss in the event of a shock.

Risk-Retention Instrument
Risk-retention instruments do not take risk off the balance sheet—the cost of a disaster must still be repaid. The instrument just offers more flexibility in how and when one would have to pay. Contingency funds, budget allocations, and lines of contingent credit are all risk-retention instruments, as are budget reallocations, tax increases, and post-disaster credit.

Risk-Transfer Instrument
This is an instrument, such as an insurance contract, that passes on the risks associated with a certain event from one party to another. For example, in disaster insurance, the financial risks associated with a disaster event are passed from the insured to the insurer.

Shock-Responsive Social Protection
Such social protection has the ability to increase its caseload or its intensity of support in response to catastrophic events.

Work Sheet 1: Introduction to Disaster Risk Financing for Agriculture

Test your knowledge and record your insights through this easy, DIY worksheet!

Activity 1. Match risk management mechanisms to severity of the risk.

Drawing on your understanding of the content in this fact sheet, match the risk-management mechanisms listed to the severity of the risk.

Risk-Management Mechanism	Nonspecific	Low	Medium	Catastrophic
Sharecropping	☐	☐	☐	☐
Formal savings	☐	☐	☐	☐
Weather data systems	☐	☐	☐	☐
Labor diversification	☐	☐	☐	☐
Credit guarantee schemes	☐	☐	☐	☐
State-sponsored insurance	☐	☐	☐	☐
Risk sharing	☐	☐	☐	☐
New technology improved seeds	☐	☐	☐	☐

Activity 2. Identify if these statements are true or false.

Looking at the statements below, identify which ones are true about disaster risk financing for agriculture (DRFA).

Statement	True	False
DRFA advocates for financial mechanisms that can be put in place after the fact (ex-post) to increase certainty of financing and planning.	☐	☐
Insurance is one of the many financial instruments that can be used as part of a DRFA mechanism.	☐	☐
Given the breadth of the DRFA toolkit, effective design and implementation of DRFA mechanisms will depend on policy goals.	☐	☐
Only government—not private sector organizations—can achieve the objectives through effective DRFA schemes.	☐	☐
DRFA must be part of a broader agricultural risk-management approach.	☐	☐

Activity 3. List two policy objectives that you wish to achieve through DRFA.

Looking into your specific country's situation, can you identify and list two top policy objectives that you can achieve through DRFA.

#	Policy Objective
1	
2	

Activity 4. Reflections

[1] These are my top two take-aways from this fact sheet.

[2] Here are two concepts or ideas that I would like more information about.