

# Managing weather risk for agricultural development and disaster risk reduction



Enabling poor rural people  
to overcome poverty



## Weather index insurance at a glance

Conventional crop or livestock insurance relies on direct measurement in the field of a loss or damage suffered by the farmer in order to determine the payout. Field loss assessment is normally costly or impractical where there are many small-scale farmers and insurance markets are undeveloped.

Weather index insurance (WII) responds to an objective parameter, such as rainfall or temperature, at a defined weather station during an agreed period of time. The parameters of the insurance contract are set to correlate, as closely as possible, with the damages suffered by the policyholder. All policyholders within a defined area receive payouts based on the same contract and measurement at the same station, eliminating the need for field loss assessment.

While not a panacea for poverty, nor the sole solution for at-risk producers, WII shows great promise as a tool to reduce the severe effects of weather-related shocks on people who depend on agricultural production for their livelihoods. Research by the WRMF suggests that WII is more effective as part of a larger package of risk management strategies and services. Given the consequences of global climate change, WII is increasingly seen as an effective strategy to help rural communities manage the increasing risks.



WFP/Evelyn Hockstein-Polari

Nearly 1.4 billion people live on less than US\$1.25 a day. Seventy per cent live in rural areas where they depend on agriculture, but where they are also at risk from recurrent natural disasters such as drought and flooding. Natural disasters have a devastating impact on the food security and overall social and economic development of poor rural households. According to data from Munich Re's NatCatSERVICE, natural disasters account for losses, on average, of US\$51 billion in developing countries every year.

Unless well managed, weather risks in agriculture slow development and hinder poverty reduction, ultimately resulting in humanitarian crises. Poor farmers have few options for coping with significant losses, and in order to reduce their exposure to risk, they often forgo opportunities to increase their productivity. When a crisis does strike, farmers often respond by withdrawing their children from school, selling productive assets or migrating. Extreme weather shocks can make rural populations more vulnerable to increasing food prices and decreasing job opportunities – in addition to losing their own agricultural production.

Conventional approaches to mitigating weather risk – including financial bailouts, debt forgiveness and emergency relief – concentrate on the consequences of crises. While emergency relief is critical in saving lives, it does not always effectively protect livelihoods.

## WEATHER RISK MANAGEMENT FACILITY

The Weather Risk Management Facility (WRMF) helps address this challenge by developing and supporting innovative weather and climate risk management tools – such as weather index insurance (WII) – that improve rural livelihoods and reduce hunger.

Launched in 2008 with the support of the Bill and Melinda Gates Foundation, the WRMF is a joint initiative of the International Fund for Agricultural Development (IFAD) and the World Food Programme (WFP). It draws on IFAD's experience in rural finance and on WFP's expertise in disaster-risk reduction and management.



## THE WRMF FOCUSES ON FOUR AREAS:

- *Building the capacity of local stakeholders for weather risk management* by strengthening partnerships, offering technical assistance, and promoting knowledge exchange in the development and use of risk mitigation mechanisms, including WII.
- *Improving weather services, infrastructure and data management* for weather risk management, including the development of WII, national weather risk management, early warning systems and vulnerability analysis.
- *Supporting the development of an enabling environment* by engaging with government partners and advocating national risk management frameworks and appropriate financial and weather risk-management strategies and policies.
- *Promoting inclusive financial systems for poor people in rural areas*, including innovative delivery channels and client education, which lead to better planning for and coping with weather shocks.

## WEATHER INDEX INSURANCE PILOTS IN CHINA AND ETHIOPIA

The WRMF has piloted WII in China and Ethiopia, conducting detailed monitoring and evaluation exercises to assess and document the results.

In China, the first application of a WII product in the country was designed to reduce smallholders' vulnerability to drought and heat waves. The Ministry of Agriculture, the Research Institute of Meteorological Science, the Institute of Environmental and Sustainable Development of the Chinese Academy of Agricultural Sciences, and the Guoyuan Agricultural Insurance Company worked with the WRMF to implement this pilot.

In Ethiopia, a WII product was developed to reduce the drought risk faced by smallholders growing haricot beans. Low-cost automated weather stations were also installed as part of the pilot. The National Meteorological Association, the Nyala Insurance Company and the Luma Adama Farmers' Cooperative Union worked together with the WRMF team in a successful pilot that increased awareness of and demand for this type of insurance in the country.

Our WII activities in China and Ethiopia, including the Livelihoods, Early Assessment and Protection (LEAP) software application, are discussed in the case studies section of the WRMF publication described in *The Potential for Scale and Sustainability in Weather Index Insurance for Agriculture and Rural Livelihoods*. (See following page)



## About IFAD

The International Fund for Agricultural Development (IFAD) works with poor rural people to enable them to grow and sell more food, increase their incomes and determine the direction of their own lives. Since 1978, IFAD has invested over US\$12 billion in grants and low-interest loans to developing countries, empowering more than 360 million people to break out of poverty. IFAD is an international financial institution and a specialized United Nations agency based in Rome, which is the United Nations' food and agriculture hub. It is a unique partnership of 165 members from the Organization of the Petroleum Exporting Countries (OPEC), other developing countries and countries of the Organisation for Economic Co-operation and Development (OECD).

## About WFP

WFP is the world's largest humanitarian agency fighting hunger worldwide. Founded in 1962, WFP pursues a vision of the world in which every man, woman and child has access at all times to the food needed for an active and healthy life. In 2010, WFP reached more than 90 million people with food assistance in more than 70 countries. Around 10,000 people work for the organization, most of them in remote areas, directly serving the hungry poor.

For more information:

IFAD  
[www.ifad.org/ruralfinance/wrmf](http://www.ifad.org/ruralfinance/wrmf)

WFP  
[www.wfp.org/disaster-risk-reduction](http://www.wfp.org/disaster-risk-reduction)

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## WRMF PUBLICATIONS FOR PRACTITIONERS AND DONORS

*The Potential for Scale and Sustainability in Weather Index Insurance for Agriculture and Rural Livelihoods* highlights eight key principles that drive the scale and sustainability of index insurance programmes. It assesses 36 programmes globally and details the experience of nine case studies. The publication discusses the various risks smallholder farmers face, explains WII, and outlines the key drivers of sustainability and scalability of WII. It also defines the important roles of donors, governments and the private sector.

The 145-page publication can be downloaded in English, French and Spanish from our dedicated WRMF websites <http://www.ifad.org/ruralfinance/wrmf/index.htm> and <http://www.wfp.org/disaster-risk-reduction>. Hard copies in English can be ordered by contacting Emily Coleman by email at [e.coleman@ifad.org](mailto:e.coleman@ifad.org).

*Effective Ways to Support Weather Index Insurance: A Technical Guide for Donors* provides useful information for supporting initiatives in WII. This practical reference tool details key considerations in design, implementation, monitoring and evaluation. It also reflects best practice and the state of the art.

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