

SAVING  
LIVES  
CHANGING  
LIVES



World Food  
Programme

# Forecast-based Financing (FbF)

Anticipatory actions for food security

April 2019



# WFP's Innovative Approach

Extreme weather events and conflict are two of the gravest global risks to food security in the world today. More than 80 percent of the world's food-insecure people live in countries prone to natural hazards that further aggravate food insecurity and malnutrition by destroying land, livestock, crops, livelihoods and food supplies. Despite significant increases in donor funding that reflect the growing need for humanitarian responses to new emergencies and protracted crises, there is a persistent funding gap of around 40 percent in support of most humanitarian appeals. This forces organizations such as the World Food Programme (WFP) to make hard decisions about the prioritization of assistance.

Thankfully, solutions exist. To support countries in the mitigation and management of climate risks, WFP is implementing innovative programme approaches to reduce losses and damages in the livelihoods of people who are faced with increasing climate extremes. The approach that has the biggest potential of closing the humanitarian funding gap is **Forecast-based Financing (FbF)**.

Forecast-based Financing enables anticipatory actions for disaster mitigation at the community and government level using credible seasonal and weather forecasts. These forecasts are linked to pre-determined contingency plans, actors and funding instruments which are used to reduce the humanitarian caseload in the critical window between a forecast and an extreme weather event. This

mechanism is changing the way the humanitarian system responds to climate-related disasters: it complements the existing readiness of humanitarian actors to respond to humanitarian needs with an anticipatory system to reduce the scale of these needs before they materialize.

Acting early allows governments, communities and households to take actions days, weeks and sometimes even months before a climate shock occurs, and helps affected populations to avoid negative coping strategies. At the same time, humanitarian and government institutions who work on disaster risk management can reduce the scale of humanitarian needs and achieve significant efficiency gains.

The world is changing fast, and the number of people who get trapped in food crises after more frequent and extreme climate events is rising. Institutional flexibility and foresight have never been of such critical importance. As the largest humanitarian organization fighting hunger worldwide, WFP has already invested heavily in supporting governments' emergency preparedness and response capacities. With climate change acting as a risk multiplier, WFP is strengthening this work with investments in Forecast-based Financing and anticipatory action across Asia, Africa and Latin America.

# How It Works

## **Assess Risks & Impacts**

in order to better understand the potential impact of extreme weather events on food-insecure people, and to inform the design and targeting of anticipatory mitigation actions.

## **Identify Capacity Gaps**

in the ability of existing early warning systems to produce and transmit reliable and timely information for the implementation of anticipatory actions ahead of an extreme weather event.

## **Agree on Thresholds**

together with national disaster management actors to determine the magnitude of an extreme weather event that can lead to high, moderate and low-level impacts.

## **Develop Anticipatory Actions**

based on multistakeholder consultations, risk and historical post-disaster assessments. Identify high, moderate, and low-risk actions that can be completed in the window between a forecast and an extreme weather event.



## Decide When to Act

by setting forecast triggers. This is based on multiple factors, including forecasting capacity, hazard type, and the time and cost necessary to complete sector-specific anticipatory actions.

## Design SOPs

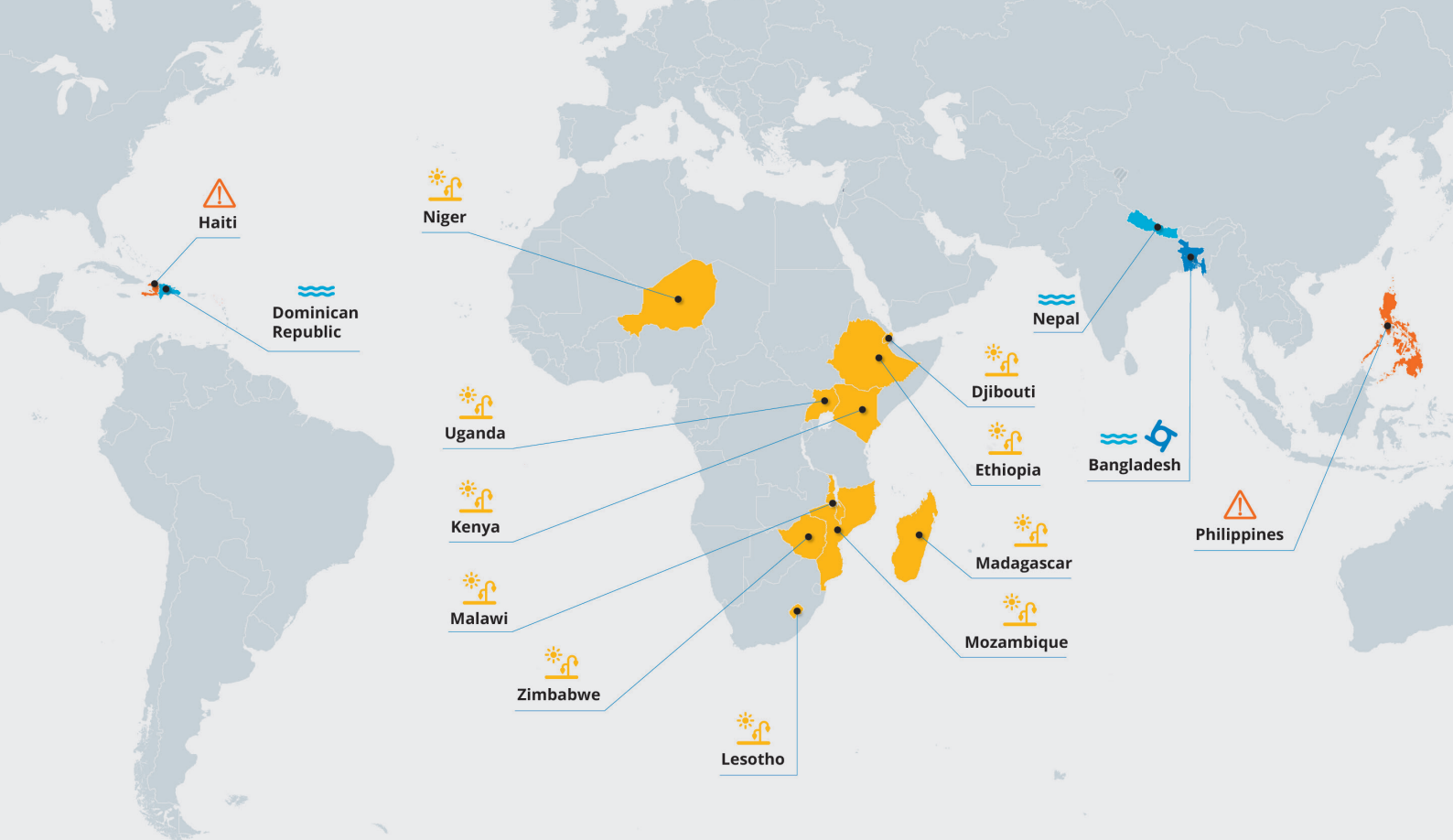
that outline the actions, along with the actors, costs, thresholds, triggers, and predetermined funds to be mobilized in anticipation of an extreme weather event. The SOPs should be aligned with national disaster risk management plans and validated together with key actors through simulations.

## Monitor Forecast & Act!

in response to a high, medium or low-level trigger, coordinate with key stakeholders to implement anticipatory actions as per the SOPs. Assimilate lessons learned through after-action reviews.

# Global Map of WFP FbF Countries and Hazards





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The designations employed and the presentation of material in this map do not imply the expression of any opinion whatsoever on the part of WFP concerning the legal or constitutional status of any country, territory or sea area, or concerning the delimitation of frontiers.

\* Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan.

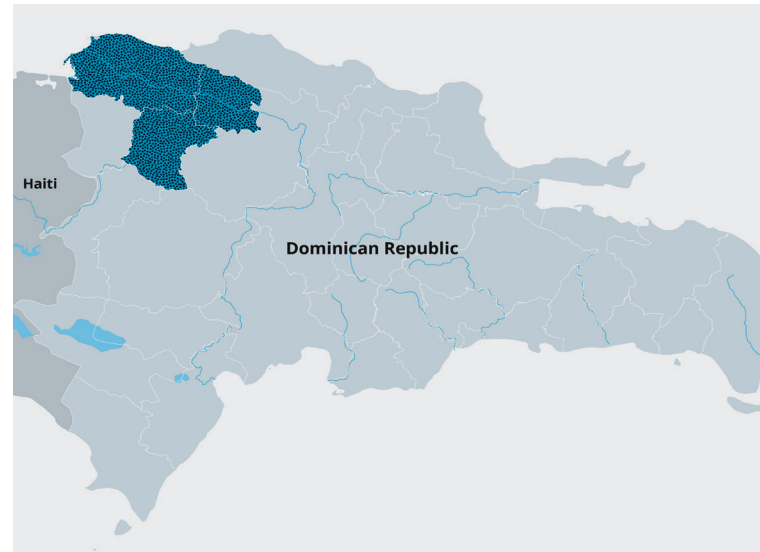
\*\* A dispute exists between the governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

\*\*\* Final boundary between the Republic of the Sudan and the Republic of South Sudan has not yet been determined.

# Country Examples / Latin America

**COUNTRY | DOMINICAN REPUBLIC**  
**HAZARD | RIVER FLOODING**  
**LOCATION | YAQUE DEL NORTE RIVER BASIN**

In the Dominican Republic, WFP has implemented Forecast-based Financing since 2015. WFP is working with government disaster risk management, emergency response and social protection entities and local partners to improve climate risk analyses, develop anticipatory actions and link them with early warning systems for flood hazards. Partners include the Dominican Republic National Emergency Commission (CNE), the Center for Emergency Operations (COE), the National Institute for Water Resources (INDRHI), the National Meteorological Centre (ONAMET), the National Geological Service (SGN), among others as part of an FbF taskforce<sup>1</sup>, and the subnational Committees for Prevention, Mitigation and Response that are responsible for carrying out preparedness and early actions at the community level. WFP's efforts within this FbF initiative have aimed at mapping the challenges and gaps in the country's early warning, emergency preparedness and response structure, sensitizing key stakeholders on the need for change, and improving preparedness procedures.



<sup>1</sup>The FbF taskforce also includes the Ministry of Agriculture, Ministry of Environment, National Water Institute (INAPA), Dominican Red Cross, Public Works Ministry, Civil Defense, Santo Domingo Technological Institute University (INTEC), Social Registry (SIUBEN), programme Progresando con Solidaridad.





## Activities

- Strengthening the forecasting capacity of national hydro-meteorological services, and enhancing national and community early warning systems
- Developing and testing national and community-level SOPs for anticipatory actions to river flooding such as cash-based transfers, in-kind food baskets and crop and livestock storage
- Improving risk analysis and targeting together with government partners for effective anticipatory actions
- Integrating FbF mechanisms with social protection and national emergency preparedness and response systems

## Highlights

- Technical assistance missions between the Cuban, Haitian and Dominican Republic national forecast centres and early warning entities to strengthen forecasting and early warning communication capacity
- Development of a flood forecast model, triggers and monitoring indicators for river flooding in the Yaque del Norte River Basin based on hydraulic and hydrological analysis
- Government endorsement of national SOPs for forecast-based anticipatory actions with regards to river flooding

# Country Examples / Asia

**COUNTRY | BANGLADESH**

**HAZARD | RIVER FLOODING**

**LOCATION | KURIGRAM DISTRICT**

WFP Bangladesh has been implementing FbF since 2015. Partnerships have been key to the success of the project. Close collaboration between WFP and the German Red Cross, the Bangladesh Red Crescent Society and the Red Cross/Red Crescent Climate Centre have helped improve the trigger and threshold levels for river flooding in the target areas in Kurigram District. In addition, WFP supported the set-up of a technical working group for FbF actors which now includes the Ministry of Disaster Management and Relief, the Ministry of Finance, the Bangladesh Meteorological Department, and the Flood Forecasting and Early Warning Centre. As a result of the project, these institutions now exchange views on forecast-based anticipatory actions and facilitate the development and integration of SOPs into national disaster risk management plans.





## Activities

- Working with government and local partners to develop thresholds and triggers for river flooding based on context analysis
- Disseminating flood early warning information to remote villages
- Developing and testing community-level SOPs for anticipatory cash-based transfers through financial service providers
- Building evidence to capture the added value of integrating FbF with social protection and national emergency preparedness and response systems

## Highlights

- Review and improvement, together with the government, of the social safety net registry to be able to facilitate anticipatory cash-based transfers
- In collaboration with local government bodies and line departments, WFP conducted a simulation exercise for forecast-based cash transfers to vulnerable groups, to test the appropriateness and efficiency of SOPs
- Supporting a technical working group with all in-country FbF actors to design, test and facilitate the integration of SOPs into national disaster management plans

# Country Examples / Africa

## **COUNTRY | ETHIOPIA, NIGER, ZIMBABWE** **HAZARD | DROUGHT**

The objective of this project which started in 2019 is to strengthen national and local-level capacity and systems for anticipatory drought risk management in Niger, Ethiopia and Zimbabwe. The focus is on the creation, use and integration of tailored climate forecasts and triggers into SOPs for anticipatory action at the onset of a potentially catastrophic drought. These SOPs will outline anticipatory actions such as creation of soil and water conservation structures, provision of drought-resistant seeds and training of farmers on agroforestry and water management, to be implemented in response to a trigger in order to reduce the impact, recovery time and costs associated with traditional drought response. The project is working in close collaboration with the International Fund for Agricultural Development (IFAD) through its Adaptation for Smallholder Agriculture Programme (ASAP).





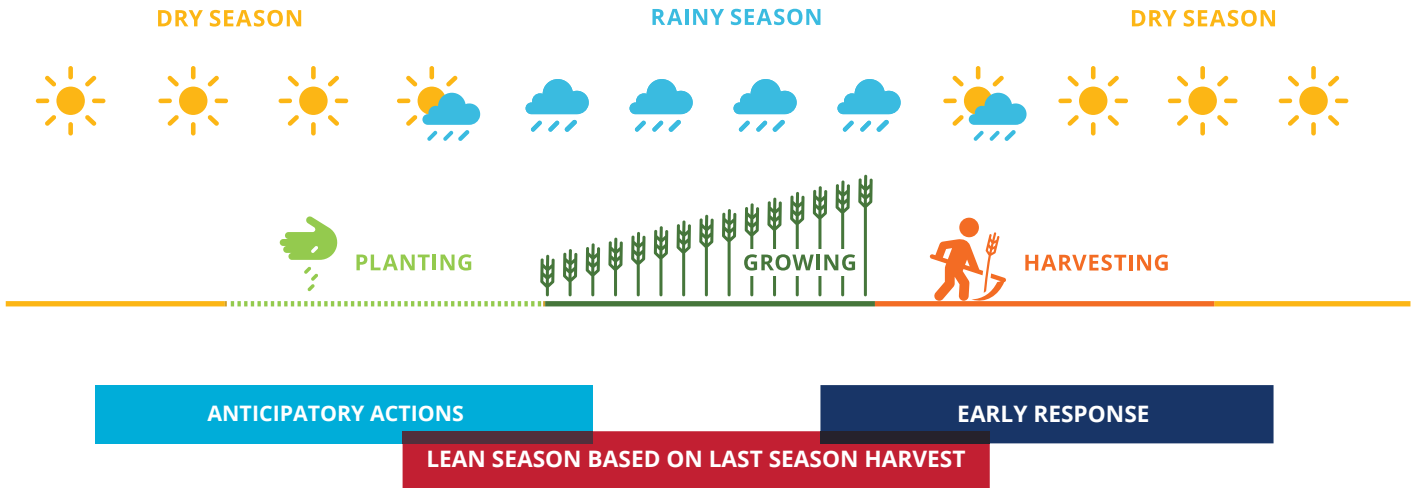
## Activities

- Working with government, humanitarian and academic partners to develop thresholds and triggers for agricultural drought
- Creating seasonal climate forecasts and decision-making tools for agricultural sector institutions to be better able to implement anticipatory actions
- Developing Standard Operating Procedures (SOPs) for anticipatory action to drought and validating them through simulation exercises

Based on a region's seasonal cropping calendar and operational context, there is a menu of anticipatory actions that the food security sector can implement ahead of a drought. For example, with a lead time of six to three months, asset creation programmes can focus on the rehabilitation of water points or construction of irrigation infrastructure. Vulnerable smallholder farmers can be trained on alternative agricultural practices and livelihood options, or provided with access to drought-resistant seeds that will guarantee them a harvest in case the rains come too late or fail completely.

Closer to the weather event, operations can focus on the communication of early warnings to the vulnerable populations, as well as cash transfers for the purchase of agricultural or other inputs. Finally, one month ahead when the probability of a disastrous drought is highly certain, nutrition and food distribution programmes can be scaled up to avert the worst of impacts and prevent people from resorting to negative coping strategies in the following lean season.

# FbF for Drought | Typical Seasonal Calendar





# What is Different About FbF for Drought?

Drought can have a severe impact on the food security and nutrition of populations whose lives and livelihoods are highly dependent on rain-fed agriculture. It is a natural hazard that is highly complex to forecast, track and tackle in a timely manner, and thus building an FbF system for it is imperative yet different from that for other extreme weather events such as floods or cyclones.

As a slow-onset event, droughts manifest themselves over long and variable stretches of time. Their causes are highly context-specific and in contrast to rapid-onset events such as cyclones whose impact is immediate and largely felt within the first three days of an emergency, the impact of droughts is slow to reveal itself fully. The effects are indirect and potentially catastrophic, starting with a failed harvest, then livestock mortality and insufficient access to water which can lead affected populations to adopt negative coping mechanisms and eventually put them in need of emergency assistance (lean season response).

There are both challenges and opportunities when building national FbF systems for drought. For example, to produce long range forecasts that are accurate, reliable, timely and hence actionable, significant capacity is required in the form of staff and infrastructure, which often necessitates support from regional or global forecasting centres. Effectively this translates into opportunities for new and innovative partnerships that enhance

capacity building as well as knowledge creation around forecasting and anticipatory actions for drought. Another example comes from the fact that droughts are hard to define, which complicates the process of reaching an agreement on thresholds and triggers among different sectors. This means that the consultation processes should be highly iterative and participatory to enable effective decision-making on the who, when, where and how to act ahead of a drought.

Most importantly, the longer timeframe for action afforded by drought forecasting allows for greater planning as well as more sophisticated programming. While forecasts for drought vary in range, there is consensus that six months' lead time is a reasonable timeframe to start implementing forecast-based anticipatory actions. This enables actors to adopt a stronger focus on the protection of livelihoods which is not feasible with rapid-onset events where forecast lead times with sufficient accuracy are much shorter (ranging from 15 days for floods to 3 days for cyclones) and where the utmost priority is thus saving lives. FbF for drought can build on a well-planned phased approach, where anticipatory actions range from no-regret, low-cost measures to high-impact, resource-intensive operations at three- or one-month lead times, as the accuracy of forecasts increases closer to when the extreme weather event is predicted to occur.

# FbF Sustainability and Integration with other Disaster Risk Financing Tools

Forecast-based Financing is by design inherently scalable and sustainable due to the central role of capacity-building and coordination activities at the national, district and community level. Due to the continuous multistakeholder engagement and collaboration required in the SOP development process, FbF generates many benefits beyond disaster risk mitigation, including enhanced national ownership of FbF tools and processes, potential for knowledge transfers to other government and non-government stakeholders, and stronger partnerships between the UN and key partners such as the national hydro-met and disaster management agencies.

The SOPs should be anchored in national institutions and be easily accessible and open to improvement and adaptation across different sectors and hazards as needed. These elements can in turn promote greater trust, interest and investment in developing FbF mechanisms and integrating them within national disaster risk management frameworks and funding mechanisms.

Shock-responsive social protection programmes can provide strategic entry points for the integration and sustainability of FbF within the national context, and can play a key role in building

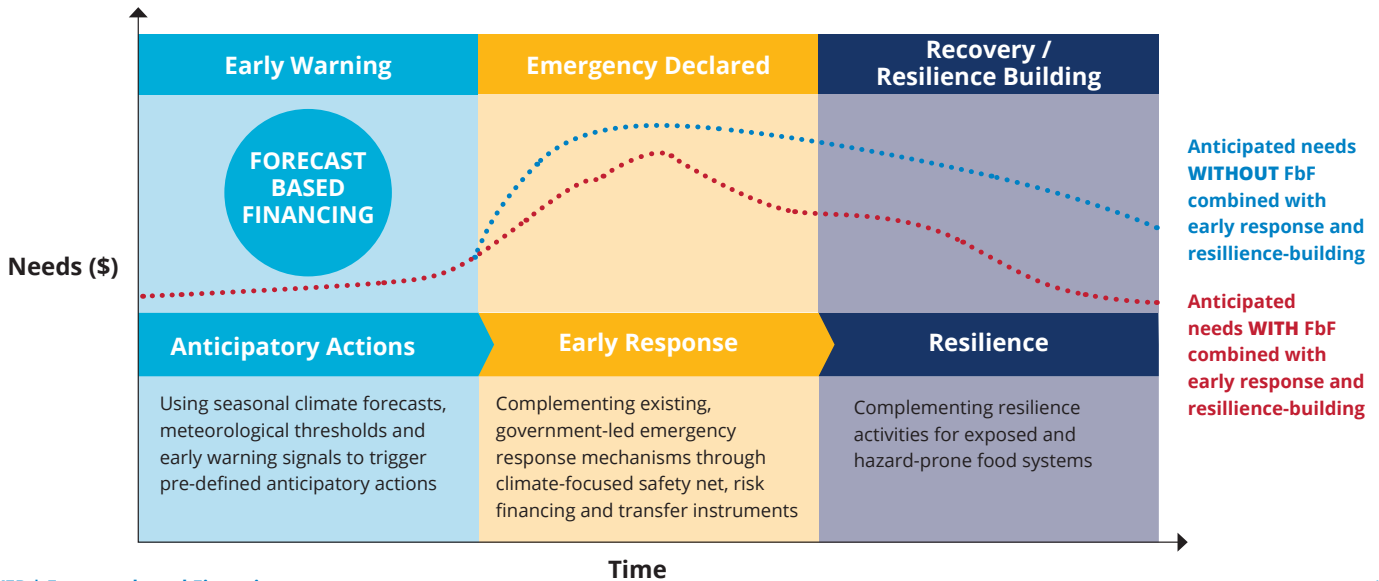
resilience against climate-related risks. Social protection programmes can act as one of the implementation modalities alongside other government and humanitarian channels to allow a broader range of anticipatory actions and funding to reach more people in need. FbF can enhance the efficiency and effectiveness of social protection programmes, for example by using impact-based forecasting to improve the targeting and of course timing of assistance. In response to a trigger, social protection systems can use their registry and distribution channels to scale up timely assistance for both current beneficiaries as well as new ones through a horizontal expansion of the programme.

WFP believes that Forecast-based Financing is more effective when implemented as part of a comprehensive and well-integrated risk management strategy that combines different disaster risk financing tools to anticipate, absorb and prepare for the impacts of climate-related disasters. Thus through FbF, WFP seeks to complement rather than replace other disaster risk reduction, seasonal preparedness and resilience-building activities.



For example, FbF and index-based insurance are two climate risk financing tools with which WFP has extensive experience and is currently exploring their potential synergies and complementarities. Both tools rely on triggers that are based on independent, verifiable and frequently reported data for the funding of predefined action plans that are implemented before or immediately after a shock. These mechanisms have distinct advantages in different contexts and can be effectively combined, for example, by sharing data to improve the efficiency of indices and risk monitoring, through

carefully sequencing the implementation of activities, and by ensuring joint targeting and contingency planning to the extent possible. This could help achieve a more smooth, timely and predictable assistance for those affected. The key benefit of integrating FbF with other early action, response or resilience-building approaches is that it effectively enables predictable and systematic management of risk through action at the moment when it is needed, reducing the reliance on resource mobilization and programming after a shock occurs, as is the case with the release of traditional humanitarian funding.



# Key Concepts



A number of key FbF terms and definitions as used by WFP. These concepts are interpreted flexibly by different stakeholders, however there is consensus among partners on the need for a common language.

**Anticipatory Action** An activity that takes place prior to an extreme weather event and based on forecast trigger, in order to mitigate the anticipated impact on food security, lives and livelihoods.

**Disaster Risk Financing** Tools and measures that enhance access to financing before and after a disaster occurs in order to strengthen the resilience of the most vulnerable people, communities and governments to climate-related risks.

**Disaster Risk Mitigation** Actions taken to help reduce or eliminate the adverse impacts of a hazard. Mitigation activities can and should be taken before a disaster occurs.

**Early Warning** A meteorological forecast that states the probability that in the coming days, weeks and/or months, there is a risk that a weather or climate-related phenomenon could exceed a pre-defined threshold.

**Forecast Trigger** A weather forecast stating that a future weather or climate-related phenomenon will likely exceed a specific

threshold. Once received, this forecast triggers anticipatory actions to mitigate the expected impact.

**Preparedness** The knowledge and capacities developed by governments, response and recovery organizations, communities and individuals to effectively scale up preparedness for anticipatory actions and to quickly respond and recover from the impact of an extreme weather event.

## Standard Operating Procedures (SOPs)

A protocol for the step-by-step implementation of forecast-based actions based on the activation of predetermined forecast triggers. It includes the types of actions to be implemented, associated actors, responsibilities, targeting and timing instructions.

**Threshold** The magnitude of a weather or climate-related phenomenon associated with a level of impact. The impact of a specific threshold is estimated using historical observations, as well as exposure and vulnerability data.





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