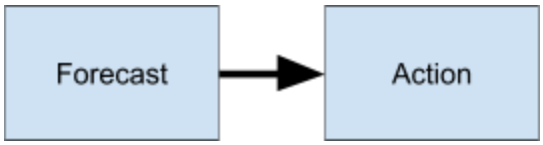
RED CROSS/RED CRESCENT CLIMATE CENTRE | International Federation of Red Cross and Red Crescent Societies | The Netherlands Red Cross

German Red Cross

Forecast-based Financing: Phase I

In the past decade, the Early Warning Early Action agenda spurred investments in climate services, forecast information, and communication protocols worldwide. As a result, lives and livelihoods have been spared during hazardous events, particularly in cyclone-prone regions. However, the full potential of early action has not yet been realized; many of the most devastating natural disasters in recent years were forecasted before they caused impact.

The global community has committed to reverse this trend. Countries have committed to strengthen Early Warning Systems in the Sendai Framework on Disaster Risk Reduction. They have promised to reduce the risks of extreme events in their Nationally Determined Contributions to the Paris Climate Agreement, and they have pledged to address disaster risk reduction as a cross-cutting necessity to achieve the Sustainable Development Goals.



Forecast-based Financing (FbF) is a mechanism to fulfill these commitments by addressing the gaps between forecasts and action. The approach has two main components: (1) developing Standard Operating Procedures (SOPs) that link specific forecast triggers to specific early actions, and (2) committing resources necessary to implement those actions when a triggering forecast is issued.

To trial this mechanism, the German government pioneered several FbF pilot projects under the umbrella of their *Action plan of the Federal Foreign Office for humanitarian adaptation to climate change*. Lessons learned from these and other FbF pilot projects have been shared at a bi-annual Dialogue Platform for FbF, convened by IFRC in Geneva. Since 2013, pilots of the FbF mechanism have tackled climate hazards in more than 15 countries, establishing action thresholds for areas as diverse as the Peruvian Andes and the floodplains of Bangladesh. More than [x] vulnerable people are now covered by these initial mechanisms, and forecasts have successfully triggered preparedness action in several countries.

There are two primary lessons emerging from these pilot experiences, which will guide investments in

Context: Early Warning Systems

There are four components of an EWS, all of which are supported in a FbF system:

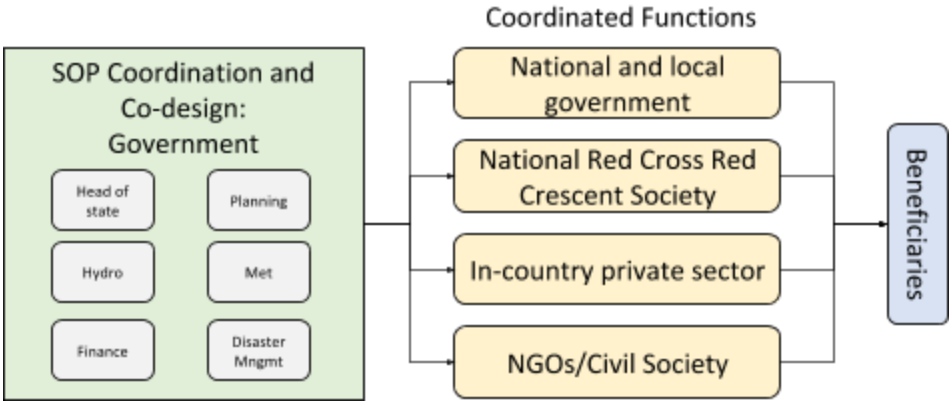
1. Risk Knowledge: FbF includes a forecast skill analysis, definition of danger levels/thresholds, and improving understanding of disaster impacts for prioritization of early actions.
2. Monitoring and Warning: FbF encourages hazard monitoring that takes into account potential impacts, and improved coordination between Hydro-met services and disaster risk management actors
3. Dissemination and Communication: Through FbF, funds are readily available to guarantee effective communication flow.
4. Response capability: FbF offers more confidence to decision makers to take actions. Action plans are prepared in advance, and funds are automatically available for implementation.

the next phase of work on FbF along the following two tracks:

1. An FbF mechanism needs to be embedded in the long-term structures of a country or region to ensure ownership, including technical and financial coordination and sustainability.
2. SOPs need to be dynamic, so they can be improved based on robust evidence, including calculations of forecast skill and evidence of the effectiveness of early actions. SOPs should be part of a cyclical process of impact assessment and adjustment.

First track: Alliance for Action

The goal of this first track is the development of SOPs that are coordinated and held by national government entities responsible for disaster and climate risk management and financing. SOPs contain specific forecast triggers, linked to roles and responsibilities of stakeholders who are responsible to take action when the trigger is reached. Actions can be delegated to national, regional, and local stakeholders, including national and local government entities, the National Red Cross or Red Crescent Society, communications, retail sector, and NGOs. Each of these groups makes the necessary arrangements to ensure that they can access the necessary resources and funding to complete their delegated functions when a trigger is reached.



For example, in the Heatwave Plan for England, the UK government establishes a forecast trigger at a 60% chance of a heatwave in the following 2-3 days. At that trigger, SOPs are mobilised as delegated actions which are coordinated among multiple actors; i.e. local Directors of Public Health are to disseminate public media messages, while public and private hospitals have the responsibility to check room temperatures of their patients and weigh patients to monitor dehydration.

Achieving such a system in other locations and for other hazards will require a coordinated dialogue process. FbF projects and programmes can embark on this process by convening a community of practice, nationally, regionally, and internationally. At a national level, this community of practice should:

1. Map existing and projected investments in the Early Warning Early Action space, including programming for development, disaster risk reduction, and climate change adaptation.
2. Map external groups that have influence and contribute support to these processes.
3. Engage a cross-cutting government ministry to convene a Dialogue Platform on FbF that unifies the mapped groups, leveraging commitments from each group to use their existing

programming and investment towards a coordinated FbF mechanism. The mechanism should be scaled relative to the opportunity and ambition of the actors, and can build on existing Humanitarian Country Clusters.

4. Convene technical working groups to develop SOPs according to delegated functions across relevant stakeholders. These SOPs should draw on evidence from the second track, Measure what Matters.

For example, the World Bank is investing in strengthening hydromet capacities in x countries; these programmes ultimately aim to increase the ability of national service providers to produce and issue hazard information. In collaboration with other actors in a national dialogue platform, the outputs of these investments can be committed to support a FbF system, ensuring that the new forecasts and warnings will trigger preparedness actions to save lives and protect livelihoods. This also ensures that the development of a FbF system does not happen in parallel.

In the FbF development process, the National Society has two major tasks in its role as auxiliary to government: (1) support the government to convene this community of practice, (2) accept delegated functions to be carried out as SOPs. Within the Red Cross Red Crescent System, the National Society should advocate for funding and resources to ensure its ability to carry out its delegated functions in a timely manner whenever a trigger is reached. The National Society is also able to seek organizational development support when needed to fulfill this role. Tools such as the Disaster Response Capacity Evaluation can offer a self-assessment to prioritize capacity building needs.

The International Red Cross Red Crescent Movement has a responsibility to respond to the needs of the National Society, as identified above. In addition, the IFRC can help mobilise support to develop and leverage a community of practice on FbF, such as convening regional and global dialogues on the topic. The international donor community can also play an advocacy role to enable funding flows to the National Society that can be used for their delegated FbF actions in the window of time between a forecast and the advent of a potential disaster.

The outcome of the Alliance for Action track is an evidence-based SOP, backed by a group of national stakeholders who are committed to fulfill specific roles and responsibilities for forecast-based action.

Second track: Measure what Matters

For an FbF mechanism to effectively reduce disaster impacts, it must be based on strong evidence and analysis. The goal of the second track is to generate this information about what works most effectively, simultaneously building capacity to measure impact. This should continually feed into the iterative SOP development and assessment process of the first track, Alliance for Action.

These research components include:

- Development of a Theory of Change for forecast-based actions. For example, define the expected impact of distribution of chlorine tablets to reduce the risk of diarrhea after floods, which could highlight the need to also tackle diarrhea risk from lack of handwashing.

- A comprehensive risk assessment to select danger levels and actions. For example, identify elevation levels of houses/infrastructure that indicate at which water level a house is at risk to be damaged.
- Cost-benefit analysis of actions. For example, calculate the monetary and non-monetary savings at household level that cash distribution based on forecast could offer compared with traditional cash transfers done after the floods happen.
- Forecast verification analysis. For example, analyze the reliability of a forecast for cold waves in the Andes region, in order to determine whether the forecast is certain enough to allow for high-cost actions.
- Tests of prototype SOPs and actions. Developing SOPs is an iterative cyclical way of working.

The Measure what Matters track relies on a globally-coordinated research process that draws from both social science and natural science methodologies. This is a distinguishing feature of the FbF approach in that risk reduction actions are not based solely on anticipation of hazards but on direct and indirect human impacts that can be expected to result. For this, FbF is closely linked with the ongoing development of Impact-based Forecasting lead by WMO. Systematising the collection of impact data by National Societies can also provide supplemental benefit to researchers and hydromet departments in understanding the utility of specific forecasts. At the national level, this process is implemented by a national research institution or university, and can be supported by the PMER departments of National Societies.

In forming a research alliance to tackle these questions, the global FbF community of practice can offer innovative opportunities for staff rotations and visiting scholars. This can offer strategic support for scientific bodies, such as hydromet departments or national DRR platforms seeking to establish formal means of collaboration between national hydrology and meteorology departments. These departments can then develop menus of triggers to support the development of SOPs within the government.

Outputs of this Measure what Matters track will feed immediately into the Alliance for Action track, making use of technical working groups between scientists and practitioners. Ultimately, the evidence from this track should be used to ensure the SOPs that are being designed are continually revised, refined and replicated at scale, in order to have the greatest possible benefit for the most vulnerable, thus delivering on the pledged targets in the Sendai Framework, Paris Agreement, and the Sustainable Development Goals (see FbF link to SDGs, SFDRR and PA documents).