Anticipatory Humanitarian Action in Nepal

Learnings from forecast-based financing for flood hazard

1 **Early Warning, Early Action:** Bridging the gap between preparedness and emergency response

Forecast-based preparedness is an approach to minimise losses and damage due to disasters. It utilises scientific weather forecasts and enhances disaster response efficiency through timely financing for response and relief. It draws on the newly emerging concepts and practices from disaster management and climate research findings. Early financing can make disaster response more effective and efficient. It builds on the Early Warning Early Action (EWEA) model tested by the Red Cross and Red Crescent's disaster management programmes worldwide. Experience has shown that early warnings help prevent losses and significantly reduce the costs of emergency response, thus enabling communities to achieve early recovery.

2 **Missed Opportunities:** Current issues in disaster response

The current humanitarian response practices are usually triggered only after a disaster event has hit the people. They draw on the belief that disasters are unavoidable and it is not possible to predict them. This precludes the possibility for significantly averting loss and damage. Humanitarian response can become more effective and cost-efficient, and post-disaster needs can be reduced significantly, if early actions can be taken between a forecast and an actual event.

Although it is not possible to forecast all types of disasters, many meteorological hazards are predictable. Advances in technology and better computer programs have improved the efficiency of forecasting weather and related hazards.

Similarly, secondary hazards and their disastrous consequences, such as cyclones, potential disease outbreaks after flood or earthquake or tsunami in coastal areas, as well as famine after a long drought can be anticipated well in advance.

3 **Forecast-based financing and emergency preparedness for flood:** Helping people before a disaster hits

In forecast-based financing and preparedness for flood (FBF), the humanitarian responders utilize weather forecasts to anticipate possible risks and impacts in risk-prone areas and effectively mobilise resources before disaster hits the area. It is a step-by-step process where multiple actors carry out selected actions once a forecast reaches a certain threshold of probability. Each action has a budget allocated to it and funds are disbursed once the threshold is reached according to predefined standard operating procedures (SOPs).

Forecast-based financing for flood response corresponds to financing flood response actions where key early actions are triggered by scientific warnings. These actions can range from no regrets, less intensive actions to highly resource-consumptive and impactful field mobilisation. Forecast-based financing can bridge the inherent gap between disaster preparedness and flood emergency response by utilising humanitarian funds and efforts more efficiently and effectively.

The International Federation of Red Cross and Red Crescent Societies (IFRC), along with other partners, have successfully implemented FbF in Peru, Togo, Uganda, Bangladesh, and Mongolia. World Food Programme (WFP) has worked with the IFRC in five countries, viz Bangladesh, Dominican Republic, Haiti, Nepal, and the Philippines.

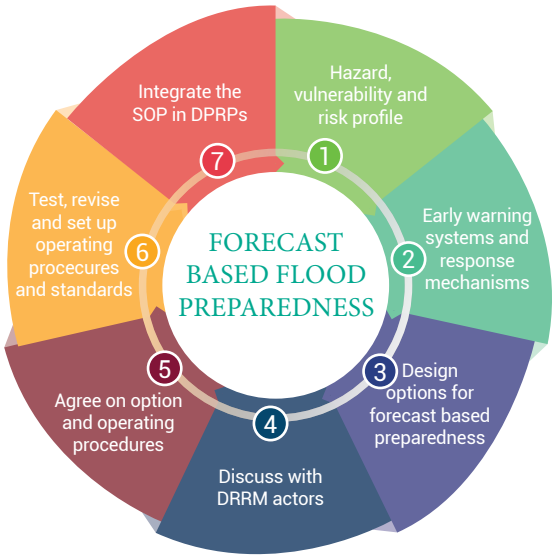

Figure 2: Simple Seven- The process of forecast based preparedness and response | Source: Practical Action Consulting

4 FbF in Nepal: Piloting in 19 districts

Building on its expertise in setting up community-based flood early warning systems in Nepal, Practical Action Consulting (PAC) provided technical assistance to WFP to pilot FbF in Nepal. During piloting, case scenarios of floods in Nepal were analysed and District Disaster Management Committees (DDMCs) were supported to prepare SOPs for forecast-based flood preparedness in 19 districts of Nepal (Figure 1) between 2016 and 2018. The Government of Nepal's Department of Hydrology and Meteorology (DHM) and National Emergency Operation Centre (NEOC) were engaged throughout the process.

DHM is mandated to provide weather and flood updates as well as issue early warnings when the forecasts reach the defined thresholds. NEOC coordinates disaster and emergency management nationwide, working closely with the District Emergency Operation Centres (DEOCs) and humanitarian actors under the guidance of the DDMCs for disaster preparedness planning and implementation. Provincial and local governments are also setting up structures for disaster preparedness and response. The FbF can be instrumental in operationalising the functions of these structures for effective disaster response.

Building on the existing flood early warning systems and Disaster Preparedness and Response Plans (DPRPs) in each district, this piloting project helped DDMCs to develop SOPs through a participatory process involving key actors and stakeholders. They advanced through a seven-step process, as shown in Figure 2.

The available weather forecasts for Nepal and their timelines are shown in Figure 3 on which the key actors and stakeholders were oriented during the process. Each disaster response actor must know its roles and actions within a given timeframe as mentioned in the SOP. They

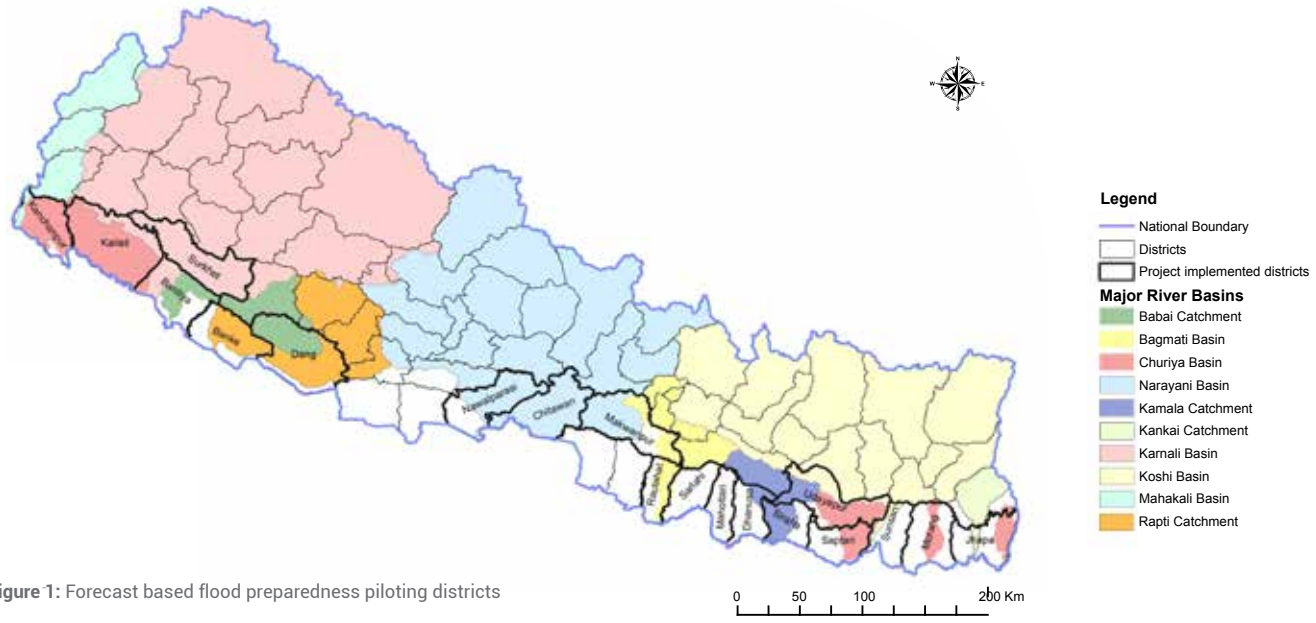

Figure 1: Forecast based flood preparedness piloting districts

need resources and skills to perform their tasks effectively. Their actions are interdependent and interconnected to an appropriate response framework guided by the SOP. Therefore, the actors need conceptual training and technical exercises. Each of them needs to understand forecasts, warnings, and step-by-step actions following warnings. Such understanding needs to translate into action through skills acquired through practical exercises such as simulation or mock drills.

5 Forecast-based preparedness helps achieve national policy targets

The National Policy and Strategic Action Plan for Disaster Risk Reduction (2018-2030) of Nepal, in line with the Sendai Framework for Disaster Risk Reduction (Sendai Framework), has set targets to significantly reduce the number of deaths, affected families, injuries, and loss and damage of property, and reduce disaster losses to Gross Domestic Product (GDP). The strategic action plan recognises the potential role of early warning systems and effective preparedness in achieving the targets. The action plan has set targets to establish the Early Warning System (EWS) and ensure access of all people from disaster-prone areas to the EWS. National Disaster Risk Reduction (DRR) policy (2018) has identified the need for development of forecast based preparedness plans based on early warning system. Furthermore, the DRR Policy (2018) outlines effective preparedness and coordinated actions between actors at all levels. FbF is the best approach to achieve these policy targets, particularly to reduce the number of deaths, injuries, and loss of assets.

The institutional set-up for disaster risk reduction and management (DRRM) in the federal structure has various actors for monitoring hazards and risks, and ultimately for taking response actions. The Disaster Risk Reduction and Management Act 2074 (AD 2017) has set up organisational structures for DRRM at federal, provincial, district, and local levels. These policy provisions are assimilated in the nineteen FbF pilot districts. The pilot provided practical experiences and helped to localise the concepts and approaches.

It is necessary to federalise disaster preparedness and response through mutually coordinated actions by these structures. The mechanism on which Fb rests is proper

Nepal has expressed its commitment to the Sendai Framework for Disaster Risk Reduction. It is reflected in the DRR National Policy (2018) and DRR National Strategic Action Plan (2018-2030). Both the Policy and the Action Plan prioritise effective preparedness and response for the prevention of losses and damage. The Action Plan has set up targets and indicators (Section 3.3) for 2030. The FbF can be an important vehicle to reach these targets.

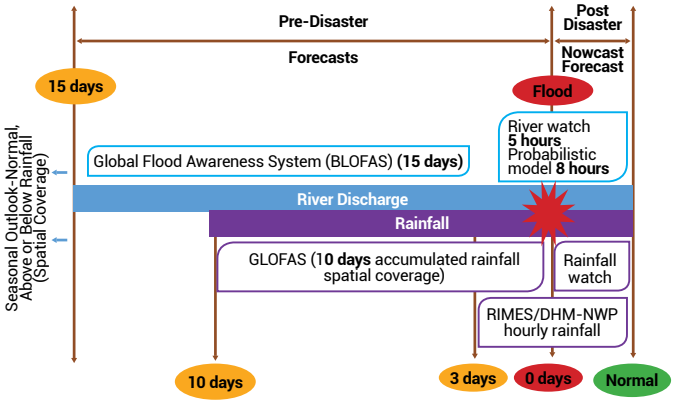

Figure 3: Available forecasts and the timeline for Nepal

disaster preparedness and response planning. Therefore, it has the potential to accommodate multi-stakeholder engagement, particularly through the SOPs and response framework. The FbF is the most advanced approach to responding to disaster risks and fits in these structures.

It builds on the most advanced flood forecasting technologies and has the potential to adopt future technologies to empower the actors in achieving the DRR targets.

6 Key Learnings, Challenges and Opportunities

Photo: Practical Action Consulting

Forecast based flood mock drill to test response capacity

The SOPs developed in Bardiya and Kailali districts were integrated into the DPRPs and were found to be helpful for early actions during the monsoon of 2018. Likewise, Dang, Surkhet, Jhapa and Siraha districts also have DPRPs with SOPs integrated in 2019. Experience of this piloting project has shown that the FbF can be implemented at a national scale by the existing institutional set-up for disaster preparedness and response. The FbF can help authorities make informed decisions in the disaster preparedness and response process. So, the FbF should be integrated into the disaster preparedness and response planning.

The efficiency of forecasts is the key factor in the effectiveness of the whole approach. However, the changing climate system has made weather patterns more erratic, leading to unprecedented extreme events. This uncertainty

has become a major challenge for certain hazards like quickly developing weather systems in various topography, which cannot be predicted with the currently available technology in Nepal.

Nepal has recently undergone structural changes, and in turn many agencies have changed their structures. Coordination between the actors at federal, provincial, and local level is a challenge, compounded by frequent transfers of officials between agencies. However, this can be improved through continued efforts.

The current legal provisions provide mandates to spend on response and relief only after a disaster has occurred. Advance stockpiling of materials or cash transfer to response actors or communities is not in the provisions. Procedural laws could be put in place to enable transfer of funds and efficient procurement functions for disaster preparedness and response.

Conceptual training and frequent practical exercises are necessary at all levels, which will help enhance understanding, as well as develop skills and confidence of the authorities for speedy adoption of the FbF in Nepal.

The FbF brings disaster risk reduction and humanitarian actors together to work in coordinated functions. The early warning system runs through an intricate network of technological and human actions to generate and disseminate forecasts. Similarly, disaster preparedness and response has multiple actors within the disaster management cycle, each with defined roles and responsibilities. The actors are communities, lifeline service providers, key government agencies, Red Cross, key business market actors, media, I/NGOs, and UN agencies working in the districts for the DRRM. These actors are identified in each DPRP with their leading and supporting roles.

> *'The first lessons learned of the FbF projects and new research carried out by the WFP shows that this method can not only save human lives but can also save critical resources – making it possible to stretch humanitarian aid further and help more people globally.'*
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> *- Forecast Based Financing, A Policy Overview by IFRC, Red Cross/Red Crescent Climate Centre, German Red Cross*

Photo: Practical Action Consulting

DDMC Jhapa reviewing SOPs of DRR and humanitarian clusters

Review of Nepal's experience on flood EWS and experiences from other countries reveal that technical capacity for weather forecasting is crucial to effective application of the FbF. Therefore, forecasts should be standardised based on their availability to different ranges: immediate (3, 6, and 12 hours), short (24 hours to 3 days), medium (7 to 15 days), and long range (1 to 3-month weather outlook). These forecasts are generated by regional and national centres. There is possibility for improving their efficiency and reliability.

Monitoring and evaluation needs to be part of the process, ensuring that issues of inclusion based on age, sex, culture, socioeconomic and geographical contexts are addressed. This approach will maximise representation ensuring no one is left behind in the process of building resilient communities.

RELATED PUBLICATIONS/REFERENCES

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