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Social protection as an enabler in scaling up Forecast-based Financing using Impact-based Forecasting

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Red Cross social protection, Lesotho. (Photo: Corrie Butler/IFRC)

Introduction

The UK Met Office is working in partnership with the World Bank on the UK's Foreign, Commonwealth and Development Office (FCDO) aid-funded programme: Asia Regional Resilience to a Changing Climate (ARRCC). Having started in 2018, this four-year programme aims to strengthen climate and weather forecasting systems at all timescales across South Asia, through new technologies and innovative approaches. The objective of the programme is to help vulnerable communities use weather warnings and forecasts for better preparedness against climate-related shocks. The Red Cross Red Crescent Climate Centre (RCCC) – a technical partner to the UK Met Office on ARRCC – is supporting the process of co-production of weather services for humanitarian operations in the region, particularly in relation to preparedness and anticipatory actions for disaster risk reduction and management.

In this context, RCCC aims to support the development of a social protection (SP) road map in the focal countries of the ARRCC programme: Afghanistan, Bangladesh, Nepal and Pakistan. This paper is the first of a series of outputs and provides a general overview of the SP and Forecast-based Financing (FbF) landscape. This will be followed by a case study of Nepal, where hypothetical testing will be used to explore potential adaptation options to existing SP schemes for responding to climate shocks and compare them to historical events. Finally, this brief, along with the case study, will help to shape a decision-tree tool for policymakers, to guide their understanding of the crucial questions to ask before adapting SP schemes for anticipatory action and how to engage with FbF.

This paper serves as an introductory brief for understanding the potential of SP systems to be used as FbF mechanisms in ARRCC countries. FbF helps to facilitate cash-based early actions prior to shocks using trigger models. Recently, there has been interest in evaluating the advantages of using impact-based forecasts for FbF to trigger action, based on an early indication of what the weather *will do*, rather than relying solely on traditional hydro-meteorological forecasts of what the weather *will be* (FbF, 2020). This will help to generate early information on the severity of the impacts predicted, which can range from minor to significant, enabling more tailored and appropriate early actions to be initiated.

The overall objective of this document is to answer two key questions:

a) How can impact-based forecasting (IbF) be used to support FbF?

b) How can SP systems help to scale-up FbF models?

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To do this, the first section of the paper provides an overview of the main conceptual definitions of SP, FbF and IbF. The second section explores the linkages between FbF and IbF, while the third section analyses the ways in which SP can facilitate the scaling up of FbF. The final section provides an insight into the current FbF–SP situation in Nepal – one of the ARRCC countries – with a short methodology along with the next steps.

Photo:
Anne-Sophie Petri/
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1. Concepts and definitions

1.1 What is impact-based forecasting?

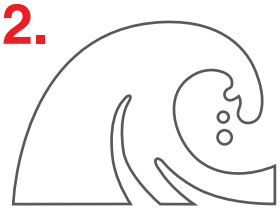
IbF involves shifting from traditional forecasts that provide descriptions of what the weather will be, to an assessment of the impacts of the forecast weather, along with associated hazards, on life and property (FbF, 2020; WMO, 2015). This information is crucial for facilitating anticipatory action, allowing the targeting of mitigation interventions or relief and recovery efforts, where they are most needed in an effort to minimize loss and devastation. The ultimate aim is to save lives and livelihoods (FbF, 2020).

For example, IbF is about moving from:

1.

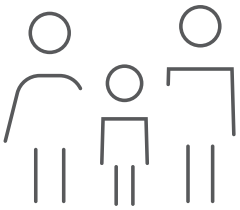
Heavy rainfall is predicted in district X, with over xx mm expected to fall in 24 hours.

2.



Heavy rainfall in district X, with over xx mm expected to fall in 24 hours and likely to cause flash flooding in Y river basin.

3.



Heavy rainfall in district X, with over xx mm expected to fall in 24 hours and likely to cause flash flooding in Y river basin, affecting vulnerable communities located in the adjacent flood plains, evacuations recommended.

Typical weather forecasts tend to provide information on the parameters of expected weather, such as wind speed in miles per hour (mph) or quantity of rainfall in millimetres (mm) over a period of time (WMO, 2015). However, it can be difficult for end users to understand the practical implications of the information included in a weather forecast i.e., what action should they take (WMO, 2015).

In contrast, IbF systems aim to show impact levels by combining other types of information – such as vulnerability and exposure data – to determine an overall risk level (WMO, 2015). Data may include things such as the type and quality of local roofing materials which, when combined with certain wind speeds, may indicate the risk of roofs being blown off (FbF, 2020). Alternatively, there may be a large area of informal settlements where the local population is much more exposed, and therefore vulnerable, to the elements and so the assessment of overall risk may be higher for these communities than for more traditional, formal settlements. It is also important to consider the weather event, not in isolation, but in a wider context: what time of the day is the event likely to happen? Does the timing increase or decrease the risk? What are the antecedent conditions? Are catchments already under pressure should there be more heavy rainfall? What season is it and is this weather event typical for the time of year? Is it the first event

of the season and, therefore, are people less likely to be prepared for it? (WMO, 2015). Knowing who and what may be at risk through IbF better enables preparedness and minimizes the socio-economic costs of climate-related hazards.

For more information on developing IbF there are a number of resources available. Key among them – especially for National Hydro-Meteorological Services – is the WMO Guidelines titled the *Multi-hazard Impact-based Forecast and Warning Services Guide. In addition, a step-by-step guide called The Future of Forecasts: Impact-based Forecasting for Early Action* has also been developed by the RCCC, in collaboration with the UK Met Office, which aims to explain more about how IbF can be used as a trigger for anticipatory action.

1.2 What is forecast-based financing?

Forecast-based Financing (FbF) helps countries to gain access to humanitarian funding in anticipation of climate-related shocks, so that early actions can be taken to minimize losses (FbF, 2020). Different institutions operationalize the concept slightly differently, based on their unique needs and constraints. Actors within the Red Cross Red Crescent movement develop Early Action Protocols (EAPs) which outline step-by-step plans, including pre-decided trigger thresholds and early actions, that are then refined on the basis of in-depth forecast, risk and vulnerability analyses (FbF, 2020).

More information on FbF principles and case studies can be found here. The Red Cross Red Crescent Movement is increasingly using FbF models for humanitarian interventions and the FbF Manual is a step-by-step guide for practitioners seeking to engage in FbF.

In an FbF system, the allocation of funds in advance is based on trigger models which consist of hazard-specific triggers that are activated once certain thresholds are reached (FbF, 2020). These thresholds are based on forecast information. EAPs also document the responsibility of relevant stakeholders for implementing early action once the triggers are activated and funding allocated (FbF, 2020).

The FbF process involves the following stages (FbF, 2020):

1.

Receiving accurate and timely weather information

2.

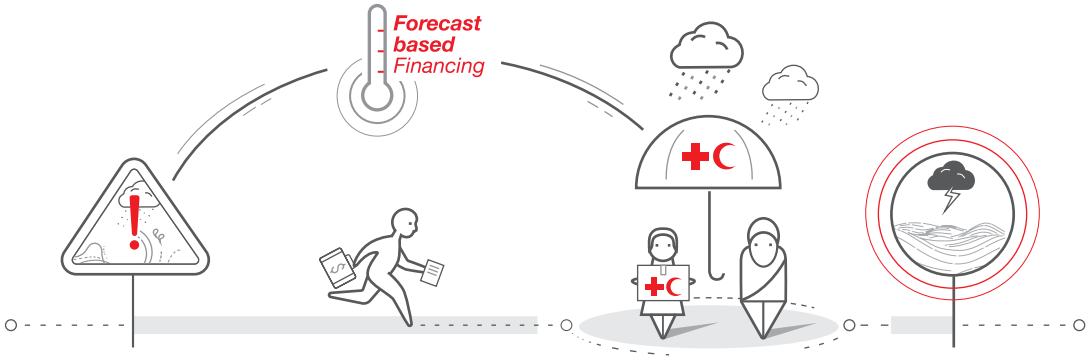
Activating pre-determined triggers once a hazard threshold is crossed

3.

Having pre-selected early actions and an outline of the responsibilities of actors

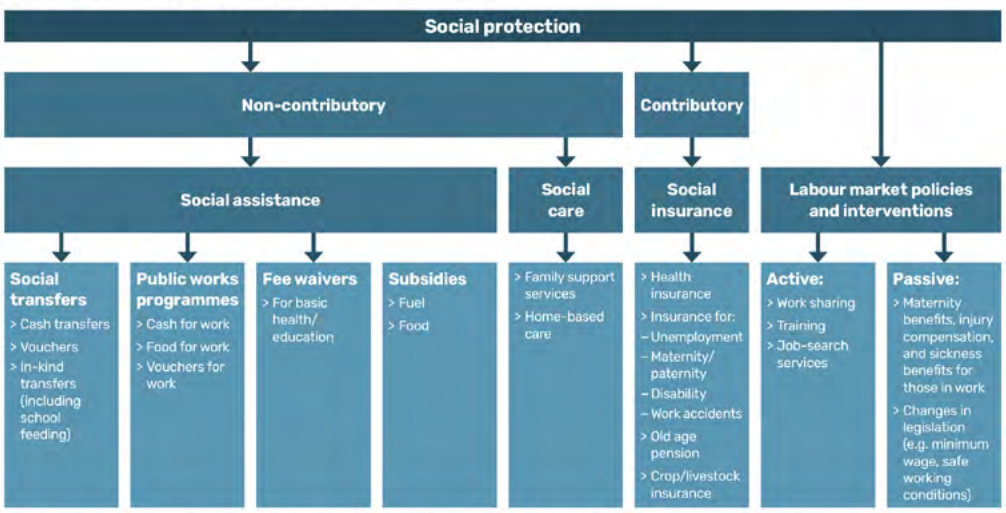
4.

Mobilizing resources and the release of funds for implementing early actions



1.3 What is social protection?

Social protection (SP)[2] is an instrument for managing life cycle risks, used by national governments as a large-scale policy instrument for reducing poverty and deprivation (FbF, 2020). SP policies help to reduce inequality and improve food security and, therefore, function as economic and socio-political stabilizers (FbF, 2020; WFP 2019). SP systems can comprise contributory schemes like social insurance (pensions and unemployment allowances) and non-contributory schemes like social assistance (cash transfers, food for work, or school feeding programmes) (FbF, 2020).



Notes: (1) 'Non-contributory' schemes are defined by the International Labour Organisation (ILO) as those that, 'normally require no direct (financial) contribution from beneficiaries or their employers as a condition of entitlement to receive benefits' (ILO, 2017). Public works programmes are usually counted as 'non-contributory' even though the recipient contributes labour. (2) Social transfers may be conditional or unconditional. A conditional transfer requires the recipient to meet certain behaviours (such as ensuring school attendance) to receive the benefit. Source: Adapted from O'Brien et al. (2018: 6).

2 More information on social protection systems, actors, country cases and current discourses can be found here.

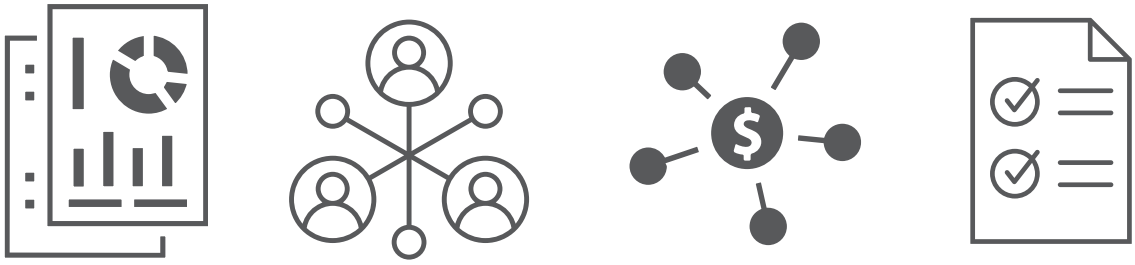
The current and emerging challenges posed by a changing climate result in increased risks which may not be adequately addressed by traditional SP policies (FbF, 2020). As a result, SP is increasingly being explored as a tool for building climate resilience (FbF, 2020). There is evidence to show that SP systems have the potential to be used to respond to climate-related shocks (FbF, 2020). In countries like Ethiopia, Honduras, Madagascar and Pakistan, the World Bank has made use of cash transfers and public works programmes as part of its response to rapid- and slow-onset disasters (Heltberg, 2007). The National Societies of the Red Cross are also involved in regular engagement with SP components during humanitarian efforts, by establishing strong relations between disaster management and SP authorities (FbF, 2020).

The COVID-19 pandemic demonstrated globally how a wide range of safety net programmes can be adjusted or introduced to buffer populations from the economic impacts of COVID-related restrictions and economic stagnation (Bastagli & Lowe, 2021). Different international coalitions have supported the exploration of synergies between SP and humanitarian efforts for managing climate-related risks (Bastagli & Lowe, 2021). For example, the Social Protection Inter-Agency Coordination Board (SPIAC-B, 2019) – comprising representatives of governments, international organizations and bilateral institutions – has recently highlighted different ways in which SP systems can support an enhanced humanitarian system, including managing disasters differently and more effectively, even in cases of extreme fragility, protracted crises and conflicts (SPIAC-B, 2019). Increasingly, the FbF community of practice is looking towards safety net programmes as a potential avenue to scale-up early action and further reduce the impacts of hazards on at-risk populations (SPIAC-B, 2019). The current coverage of many SP programmes, combined with the high levels of vulnerability and poverty of typical SP programme beneficiaries, makes the consideration of SP systems a logical option for the scale-up of early action and response operations for hazards (FbF, 2020).

2. Strengthening the use of IbF for FbF

2.1 How can Impact-based Forecasting be used to support Forecast-based Financing?

The emergence and uptake of FbF models has largely been driven by the need to act early in areas where moderate to severe humanitarian impacts are predicted (FbF, 2020). IbF presents an opportunity for progressively increasing humanitarian funding, as predictions of the extent and severity of impacts to human lives and livelihoods in advance of an event can help in pursuing donors and humanitarian actors to make funds available in advance (FbF, 2020). FbF is predicted to have the biggest potential of closing the humanitarian funding gap and mitigate and manage climate risks (FbF, 2020; WFP, 2019).



VCA data | Stakeholder mapping | Pre-allocated funds | EAPs

- At the core of both IbF and FbF lies the use of risk and vulnerability data to identify exposed areas and populations. This makes it possible for disaster management actors to focus relief and recovery activities efficiently, and better plan for longer term mitigation and adaption objectives (FbF, 2020). The use of such integrated weather and vulnerability information increases the efficacy of the intervention (FbF, 2020).

- When IbF is used to underpin FbF, early actions can be more context-specific and based on the capacity of the stakeholders (FbF, 2020). In FbF, the range of actors who will be responsible for early actions are identified in the EAPs (FbF, 2020). If IbF is used to predict the possible impacts, then the range of stakeholders who will be impacted can be pre-identified and involved in the process (FbF, 2020). For example, using IbF, predictions can be made about

whether a certain hazard event has historically played a role in increasing food prices and, if that is the case, then the government department(s) responsible for market regulations can also be involved in deciding the early actions.

- Pre-allocation of funds for FbF is based on the range of early action measures identified and selected during the development of the FbF mechanism in any given country (FbF, 2020). Using IbF can help to predict the number of people exposed to an impending weather- or climate-related shock and, therefore, indicate whether the pre-allocated funding is adequate or if additional ad hoc funds need to be generated/raised (FbF, 2020).

- EAPs are crucial for FbF as they outline the actions and, crucially, the stakeholders responsible for undertaking these actions (FbF, 2020). Using IbF for FbF provides an opportunity to more closely involve a wider selection of stakeholders, build capacities through knowledge exchange and understand their needs while deciding on early actions (FbF, 2020).

- As IbF predicts the range of possible impacts, it also provides an opportunity to involve other sectors – especially the private sector (FbF, 2020). For example, if IbF anticipates a significant rainfall event that could cause a flash flood in a certain location and damage warehouses along a river, the private company responsible for the warehouses can be involved in facilitating early actions, either by providing additional support or even by simply warning its employees of the potential flooding.

- Using IbF can also help to pre-identify gaps in capacity at the institutional level, and FbF actors can make use of this information to advocate and help strengthen the entire anticipatory system (FbF, 2020).

Photo: FbF cash distributions, Bogra district, Bangladesh, July 2017 monsoon
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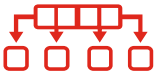
2.2 How to shift from regular weather and climate forecasts to impact-based forecasts?

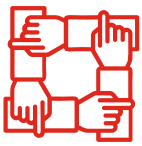
Weather and climate forecasts and projections have long been useful tools globally to communicate upcoming weather patterns and climate scenarios. Today, their value is increasingly being recognized – thanks to their improved lead times and ever-increasing accuracy – in helping to identify significant weather hazards or potential climate shocks (WMO, 2015). Acting further in advance of impending weather or a changing climate can create additional leverage and help to minimize losses and impacts. Using forecasts to predict what the weather will do instead of what the weather *will be* offers an increased opportunity to act early (FbF, 2020). This is the main argument for using impact-based forecasts for FbF (FbF, 2020). To encourage the transformation from using generic modelling and forecast information to IbF and better support FbF and SP, the following five steps are important:

1.  acquiring and analyzing reliable historical data to identify a range of possible impacts in a region, per hazard type (WMO, 2020)

2.  categorizing the impact intensity into 'very low', 'low', 'medium', or 'high' for any particular hazard faced by a specific region/locality/community and understanding these will likely vary and so no two IbFs are ever the same (WMO, 2020)

3.  developing dedicated teams of skilled personnel who can use regular forecast data and combine it with vulnerability information to identify areas/localities most at risk, highlighting these and enabling them to take early action (WMO, 2020)

4.  training, simulations and pilot projects to familiarize all actors with the IbF system, helping to increase the level of confidence in the forecast of potential impacts; refining any hypothesis about vulnerabilities, exposure, impacts or assessment of risk; enabling iterative improvements based on the findings; and, ultimately, improving decision-making (WMO, 2020)

5.  working in close coordination between the disaster management agency as well as the national meteorological and hydrological services in order to develop impact information and ensure vulnerability information is pro-actively updated (WMO, 2020). This will enable involved actors to develop operational plans based on risk thresholds and impact models (FbF, 2020).

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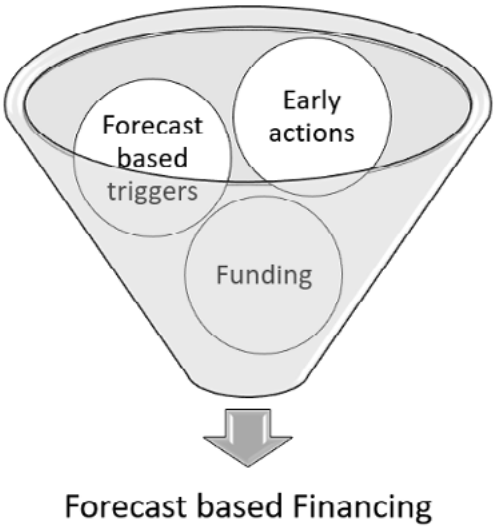
3. SP as an enabler of FbF

3.1 How can social protection be an enabler in scaling up Forecast-based Financing, applying Impact-based Forecasting?



FbF models are underpinned by three main components: a) forecast-based triggers; b) pre-determined early actions for the activation of triggers; and c) pre-allocated funding for the implementation of defined early actions (FbF, 2020).

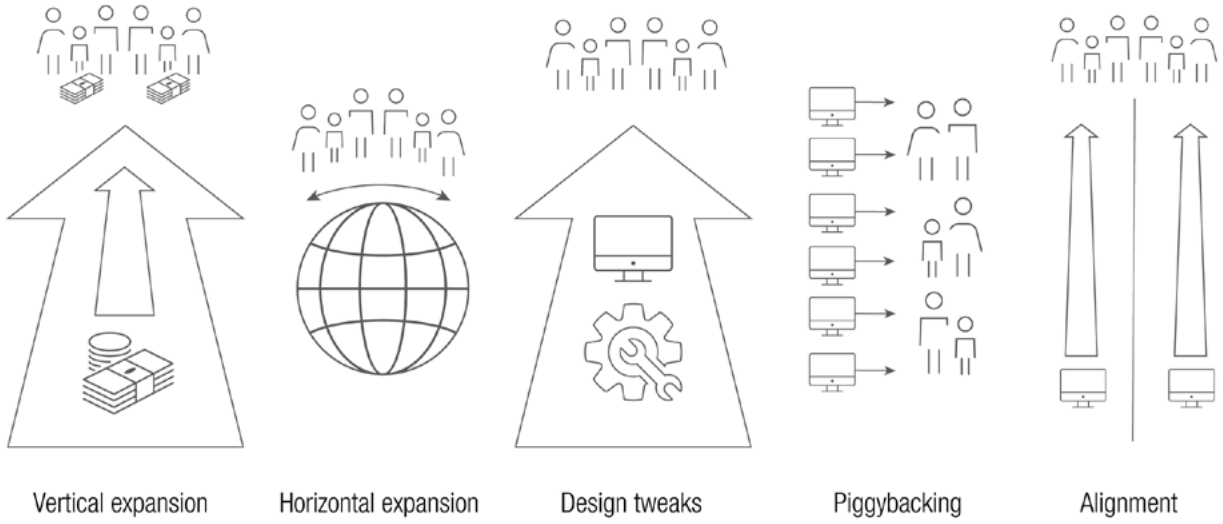
SP systems can play a role in enabling the setting up and subsequent implementation of each of these components as well as in scaling up anticipatory action for climate-related shocks, as outlined below (FbF, 2020):

- In the preliminary phase of setting up triggers, in addition to reliable climate information, data on vulnerability and exposure is required (FbF, 2020). This improves the accuracy of hazard-prediction and, in turn, helps in understanding the potential risks (FbF, 2020). For this, detailed risk and vulnerability assessments are undertaken so that there is adequate information on who is most likely to be affected and in which ways. SP databases have traditionally included poverty-related indicators, which are useful for means tested targeting approaches (FbF, 2020; Kardan *et al.,* 2017). Some of these databases also capture socio-economic variables that can be useful for determining who to target in an area of potential risk (FbF, 2020). For example, in Lesotho, the Ministry of Social Development makes use of vulnerability data that is collected annually by the Lesotho Vulnerability Assessment Committee (LVAC) in addition to the poverty data, for targeting people vulnerable to drought risks (Kardan *et al.,* 2017). In Lesotho, plans are also underway to include more drought-related variables into the National Information System for Social Assistance (NISSA) database, which will make it easier to identify drought vulnerable groups who need social assistance, extending beyond the regular SP beneficiaries (Kardan *et al.*, 2017). This means that many SP systems – especially in those countries with more mature, established programmes – collate vulnerability data which can be useful for setting up triggers for FbF systems. SP systems components, which are often designed with considerable time and diligence in order to ensure accurate targeting strategies of beneficiaries, can therefore be beneficial for FbF (FbF, 2020). Humanitarian responses, which most of the time happen very rapidly, could benefit from the more thorough targeting process done by SP systems (FbF, 2020).

- Once the triggers are set, the next step is to identify a range of possible early actions to be undertaken, based on each hazard type (FbF, 2020). These early actions are compiled in EAPs, after they have been approved by the different stakeholders involved (FbF, 2020). While not all, some SP schemes can help in the implementation of early actions, depending on the options available for the schemes to scale-up.

Shock-responsive SP options for FbF

The five options by which SP schemes could adapt to become shock responsive, scale-up for responding to emergencies, and that can help in FbF are:



1. **Vertical expansion:** When the groups targeted by an SP scheme coincides with those located in areas of high exposure and vulnerability, the transfer amounts can be complemented by anticipatory top-ups to the regular beneficiaries (Kardan *et al.,* 2017).

2. **Horizontal expansion:** When the groups identified as high-risk fall outside the regular beneficiary groups, SP schemes can scale-up to include more people for a temporary duration (Kardan *et al.*, 2017). However, pre-registration of 'almost vulnerable' groups is essential in such cases (Kardan *et al.,* 2017).

3. **Design tweaks:** Using IbF, SP actors can adapt the design of the SP programme, for example, by removing conditionalities for at-risk groups or by sending lump sum installments (rather than requiring beneficiaries to collect smaller payments at closer intervals) to help avoid travel during periods of risk (Kardan *et al.*, 2017).

4. **Piggybacking:** FbF can make use of the existing infrastructure of SP systems, such as using pre-established payment mechanisms or Memoranda of Understanding (MoUs) with financial service providers for speedy cash, voucher or relief delivery (Kardan *et al.,* 2017).

5. **Alignment:** While the relatively massive and complicated structure of national SP systems can be challenging, some schemes can work in parallel with FbF and align with humanitarian cash transfers, therefore reducing the burden on humanitarian actors to serve one and all (Kardan *et al.,* 2017). Aligning transfer amounts, payment schedules or targeting approaches among SP and FbF schemes can enhance the overall coverage and effectiveness of the interventions (FbF, 2020)

- The third cornerstone of FbF is making funding available. SP can help in transferring installments in case the predetermined early actions involve delivering cash to households (FbF, 2020). However, whether SP systems can directly provide funding for FbF is a question that still needs to be explored. In many countries, SP systems are overburdened, and a limited fiscal envelope prevents the scale-up of regular transfers or beneficiary numbers (FbF, 2020). In such cases, expanding the SP budget for FbF is challenging. Nevertheless, development organizations and donors, who fund and facilitate the establishment of social safety nets in countries, are increasingly interested in integrating forecasts within SP systems so that the schemes are designed to be flexible and scalable from the beginning (Kardan *et al.,* 2017). Innovative options like the Global Fund for Social Protection could also act as an enabler for increasing the fiscal capacity of SP schemes and make them more shock responsive through FbF (OHCHR, 2021).

In efforts to integrate FbF into SP systems, the provision of social assistance through cash and voucher assistance has been the most common choice of anticipatory action for most humanitarian actors and donors (FbF, 2020). However, social assistance is only one of the SP instruments with potential to be improved through the introduction of the FbF concept (FbF, 2020). Others, like active labour market policies or climate-based social insurance schemes, and their role in FbF scale-ups, remain under-explored (FbF, 2020). In some cases, SP systems are not ideal or developed enough to be sufficiently agile and flexible for responding to shocks (FbF, 2020). Reducing climate risks via the integration of FbF into SP systems rests on identifying the right combination of system components – most notably selecting hazards, SP instruments, lead times and scalability mechanisms – that in combination have a strong logic for reducing specific negative impacts in a given context (FbF, 2020). Considerations of institutional willingness and capacities, forecast accuracy and SP system maturity are also central in this regard.

4. Parallel processes in facilitating SP and FbF integration under ARRCC

The European Commission Humanitarian Aid Office (ECHO)-funded project on **Forecast-based Action and Shock Responsive Social Protection** in Nepal is currently being implemented by the Danish Red Cross and Nepal Red Cross Society, with technical support from the Red Cross Red Crescent Climate Centre. The Climate Centre has been supporting vulnerability and risk mapping studies; workshops on SP and FbF; developing standard operating procedures and early action lists; and, overall advocacy for the use of national social safety nets for responding to climate shocks in advance. Desktop simulations for two climate-related hazards – namely floods and cold waves – were organized in 2021 to explore early action and design tweaks that are viable while using the national social security assistance schemes for these risks. Stakeholders including government officials as well as disaster, meteorological, humanitarian and development actors along with members of the Nepal Red Cross Society have been part of the simulations, and the results of the workshops are currently feeding into the development of EAPs for the further integration of FbF and shock-responsive social protection (SRSP) in Nepal. Throughout this engagement, the Climate Centre has been supporting the ARRCC's deliverable on brokering regional dialogues on FbF and SRSP and coordinating with regional stakeholders. These deliberations have also played a role in the formation of a *Forecast-Based Action and Shock-Responsive Social Protection Community of Practice in Nepal* in 2021, bringing together different actors in the country including the World Food Programme, UNICEF, United Nations Development Programme and Oxfam along with governmental actors. The community of practice is currently working to strengthen and further the development of FbF and SRSP across the country.

Acknowledging the current momentum in advancing the use of FbF for SRSP in Nepal, the Climate Centre has conducted exploratory research using hypothetical situations to evaluate how the SP system in the country could have scaled up in case of an FbF trigger during the 2017 floods. It is expected that the study will help to identify aspects of the existing programmes that could be adapted to disasters, such as floods. The brief can be found here.

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