

Forecast-based Financing Case Study: Asia Pacific

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This Annex has been prepared for the Netherlands Red Cross as part of the assignment "Forecast-based Financing Case Study: Asia-Pacific". This document complements previous deliverables including: Inception report, Results Symposium presentation, Transcript report and the Draft report. This Annex presents the disaggregated data and analysis supplementing the Final report.

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Table of Contents

Annex I: List of stakeholders interviewed		
Annex	x II: Literature reviewed	6
Annex III: Section 1 analysis		10
Annex	x IV: Section 2 analysis	13
Annex	x V: Disaggregated interview, analysis and literature results	36
1.1.	Indonesia	37
1.2.	India	43
1.3.	Myanmar	49
1.4.	Nepal	57
1.5.	Vietnam	62
1.6.	Mongolia	68
1.7.	Philippines	75
1.8.	Bangladesh	85
1.9.	Regional	92
Annex	x VI: General observations and disclosures	97
<u>Anne</u>	Annex VII: NVivo data analysis and coding	
Annex	x VIII: Results symposium	112

Figures and Tables

Figure 1: Climate continuum and FbF spectrum	34
Figure 2 Diagram of institutionalisation self-ratings	101
Figure 3 Results Symposium Poll: Access to Finance	113
Figure 4 Results Symposium Poll: Enablers	113
Figure 5 Results Symposium Poll: Barriers	114
Table 1 List of stakeholder Interviews	5
Table 2 Literature reviewed	6
Table 3: Disaggregated KII strategies / needs for FbF institutionalisation	13
Table 4: Indonesia's Enablers, Barriers and Pitfalls	37
Table 5: India's Enablers, Barriers and Pitfalls	43
Table 6: Myanmar's Enablers, Barriers and Pitfalls	49
Table 7: Nepal's Enablers, Barriers and Pitfalls	57
Table 8: Vietnam's Enablers, Barriers and Pitfalls	62
Table 9: Mongolia's Enablers, Barriers and Pitfalls	68
Table 10: Philippines's Enablers, Barriers and Pitfalls	75
Table 11:Bangladesh's Enablers, Barriers and Pitfalls	85
Table 12:Region's Enablers, Barriers and Pitfalls	92

Table 14 Data codes from NVivo analysis103

Table 13: Literature provided by the RCRC

97

Annex I: List of stakeholders interviewed

Table 1 List of stakeholder Interviews

Interview Date	Organisation	Stakeholder name(s)
04/08/2020	Indonesia Red Cross	Teguh Wibowo and Pak Arifin
06/08/2020	India Red Cross	Bindu Aggarwal and Hrusikesh Harichandan
10/08/2020	WFP Bangkok UNICEF Bangkok	Samuel Clendon Ruben Villanueva
10/08/2020	Nepal Red Cross Society Danish Red Cross	Niru Pradhan Manish Dhungel, Silvia Crespo, and Anne- Sophie Petri
13/08/2020	Myanmar Red Cross	Moe Thida Win
14/08/2020	German Red Cross IMHEN (Vietnam)	Jerome Faucet Trung Nguyen Quang
14/08/2020	WFP Nepal	Nitesh Shrestha and Priyanka Singh
17/08/2020	WFP Philippines	Isabelle Lacson
21/08/2020	RC Philippines German Red Cross	Ferdinand Ferrer Damien Riquet
24/08/2020	Mongolia Red Cross	Nyamkhuu Chuluunkhuu
25/08/2020	Philippines Red Cross (Cataduanes)	Reymund Reginaldo
26/08/2020	IFRC Climate Centre Regional Office for Asia Pacific	Madhab Uprety
26/08/2020	AHA Centre (ASEAN)	Dipo Summa and LA Dimailig
01/09/2020	FAO Mongolia	Tselmeg Chuluunbaatar and Munguntuya Sharavnyambuu
02/09/2020	Bangladesh Red Crescent Society German Red Cross	Shahjahan Saju Damodar Kanel
03/09/2020	WFP Bangladesh	Siddiqul-Islam Khan

Annex II: Literature reviewed

Table 2 Literature reviewed

No.	Title, author, year		
	FbF General		
1.	FbF Practitioners Manual, Red Cross Climate Centre, IFRC, German Red Cross, 2020		
2.	Anticipatory Humanitarian Action: what role for the CERF?, Overseas Development Institute (Florence Puchon), 04/2019		
3.	Forecasting hazards, averting disasters FbF, Overseas Development Institute, Wilkinson et al, 03/2018		
4.	Evidence Base on Anticipatory Action, World Food Programme, Overseas Development Institute, Nd		
5.	The evidence base on anticipatory action - key messages, World Food Programme, Overseas Development Institute, 05/2020		
6.	Sector wide review of MEAL methodologies for FbA, START Network, Red Cross Climate Centre, 02/2020		
7.	NLRC Policy on FbF, NLRC, 2018		
8.	Forecast-based Financing, Early Warning, Early Action in Asia-Pacific - Red Cross (client), N.d.		
9.	Innovation Timeline - Concept - Red Cross (client), N.d.		
10.	Other links - Red Cross (client), N.d.		
11.	Exploring the feasibility of SEADRIF in the Red Cross Red Crescent National Societies, RCRC Climate Centre, 02/2020		
	Indonesia		
12.	Towards impact-based forecasting: upgrading InaSAFE and GeoSAFE to enable forecast-based action, Kartoza, IFRC and Climate Centre, May 2020		
	India		
13.	Indian Red Cross Society (IRCS) Fbf Flooding Presentation for CWC, IRCS, Nd		
14.	14. FbF EA Protocol in response to Floods in the Assam region, Indian Red Cross Society, 26/02/2020		
	Myanmar		
15.	Myanmar FbA EWEA Feasibility Study, Myanmar RCS, 2020		
16.	Myanmar FbF Overview presentation, Pichon et al, 2019		
17.	Scoping Study on FbF in Myanmar, MRCS, 2019		
	Nepal		
18.	Digital Transformation of Nepal Red Cross, Nepal Red Cross Society (Maarten Van der Veen), 12/02/2020		
19.	Preparedness for Emergency Response in the Western Region of Nepal, Nepal Red Cross Society, 2020		
20.	Preparedness for Emergency Response in the Western Region of Nepal, Danish Red Cross, 14/05/2019		
21.	FbF Pilot Lessons Learned, Nepal Red Cross, 2018		
22.	Nepal FbF Feasibility Study, Red Cross Climate Centre, Nd		
23.	Standard Operating Procedures FbF Preparedness in Bardiya, Practical Action Consulting, 2017		
	Vietnam		

No.	Title, author, year			
24.	VNRC FbF framework 2020-2025 (Revised), Vietnam Red Cross Society, 31/10/2019			
25.	VNRC FbF framework 2020-2025 (Original), Vietnam Red Cross Society, 31/10/2019			
26.	Financing Forecast-Based Early Action in Vietnam, Trung and Milenburg, 20/12/2018			
27.	Forecast-based Financing: A New Era of Disaster Relief, Vietnam Red Cross, German Red Cross, 12/2018			
28.	Vietnam Red Cross Society Hosts Worksop Introducing Cutting-edge FbF Project, Vietnam Red Cross, German Red Cross, 2018			
29.	Applying FbF to Reduce Heatwave Vulnerability in Hanoi Vietnam - UPDATE 1, Vietnam Red Cross, German Red Cross, 11/2018			
30.	Introducing FbF to an Urban Setting - UPDATE 2, Vietnam Red Cross, German Red Cross, 12/2018			
31.	Knowledge, Attitudes, and Practices: Measuring Community Understanding of Heat Waves - UPDATE 3, Vietnam Red Cross, German Red Cross, 01/2019			
32.	Impact Forecast Mapping: Identifying Urban Areas Most Vulnerable to Heat Waves - UPDATE 4, Vietnam Red Cross, German Red Cross, 05/2019			
33.	Heatwave Early Actions Test in Hanoi - UPDATE 5, Vietnam Red Cross, German Red Cross, 07/2019			
34.	Enhancing Heatwave Early Actions in Hanoi - UPDATE 6, Vietnam Red Cross, German Red Cross, 08/2019			
35.	Glossary FbF, Na, Nd			
	Mongolia			
36.	EWEA Mongolia: Anticipating the 2020 dzud, Food and Agriculture Organization, Mongolia Red Cross Society, IFRC, 06/2020			
37.	Early action against dzud safeguards herders' livelihoods in Mongolia, Food and Agriculture Organization, 11/2018			
38.	Mongolia: Impact of Early Action Early Warning, Food and Agriculture Organization, 2018			
39.	Mongolia's deadly winters are becoming more frequent, The Economist, 25/01/2020			
40.	Mongolia FBF EAP - hazard: Dzud, Mongolian Red Cross Society 05/2019			
41.	Forecast based early action triggered in Mongolia and Dzud, IFRC, 2019			
42.	FbF for Vulnerable herders in Mongolia, IFRC, Nd.			
43.	The effectiveness of forecast-based humanitarian assistance in anticipation of extreme winters: Evidence from an intervention for vulnerable herders in Mongolia, Gros et al, 2020			
	Philippines			
44.	FbF Phase 1 Project Presentation and Consultation Workshop for Phase II, Philippine Red Cross, German Red Cross, Finnish Red Cross, 06/16/2020			
45.	Annex 4 Activity Report in Catanduanes Activation, Philippine Red Cross, German Red Cross, Finnish Red Cross, 01/12/2019			
46.	Annex 5 Activity Report in Camarines Norte Activation, Philippine Red Cross, German Red Cross, Finnish Red Cross, 03/12/2019			
47.	Revised Guidelines for the Declaration of State of Calamity, National Disaster Risk Reduction and Management Council, 17/06/2019			
48.	TYPHOON TISOY KAMMURI RESPONSE OPERATION Early Action Phase: Forecast Based Financing Final Report, Philippine Red Cross, German Red Cross, Finnish Red Cross, 03/02/2020			
49.	Forecast-Based Financing EAP Typhoon Philippines, Philippine Red Cross, 2019			
50.	Philippines: Typhoon EAP summary, IFRC, 2019			
	Bangladesh			
51.	Anticipatory Humanitarian Action - Pilot: 2020 Monsoon floods in Bangladesh, Na, 25/06/2020			

No.	Title, author, year
	Household-level effects of providing forecast-based cash in anticipation of extreme weather
52.	events: Quasi-experimental evidence from humanitarian interventions in the 2017 floods in Bangladesh, Gros et al, 2019
53.	Combating Cyclone in COVID-19 environment: Modified Cyclone Preparedness and Response Plan, Cyclone Preparedness Programme, 03/05/2020
54.	Scaling up Early Action in Bangladesh, Overseas Development Institute (ODI) including Tanner et al, 2019
55.	Standing Orders on Disaster Revision, Na, 2019
56.	Bangladesh: Flood Early Action Protocols Summary, IFRC, 2019
57.	FbF EAP Bangladesh, Bangladesh Red Crescent Society, 2019
58.	Forecast based early action triggered in: Bangladesh for Floods, IFRC, 2019
59.	FbF EAP Bangladesh Cyclone, Bangladesh Red Crescent Society, 2019
60.	Bangladesh: Cyclone Early Action Protocol Summary, IFRC, 2018
61.	Forecast Based Early Action triggered in Bangladesh for Cyclone Amphan, IFRC, 2018
	Regional ECHO Project on FbF/EWEA
62.	ECHO Phase II FAO Overview, FAO, 2020.pptx
63.	ECHO Project and expectations, European Commission, 2019
64.	ECHO Message, Na, Nd
	Desktop research
65.	Finance for Adaptation Technologies and Solutions Roundtable (FASTR) - The Lightsmith Group, 2020
66.	Podcast: How Forecast-based Financing Transformed the Humanitarian System - Can't Take the Heat, 08/07/2020
67.	AADMER Work Programme 2016-2020, ASEAN, 2015
68.	DRF-Guide Sendai, Disaster Recovery Framework, 2015
69.	Forecast-based Financing within the Red Cross and Red Crescent Movement: Persisting Barriers and Ways Forward
70.	Myanmar IFCR Country programme 2019 overview
71.	Faster than floods: How to prevent a double disaster in Bangladesh, The Independent, 2020
72.	GCF funding proposal sap 010 Landbank Philippines
73.	Elaboration of the sources of and modalities for accessing financial support for addressing loss and damages, UN, 2019
	Methodology
74.	Applied thematic analysis. Guest, G., MacQueen, K. M., and Namey, E. E, 2011
75.	Thematic analysis in APA handbooks in psychology. APA handbook of research methods in psychology, Vol. 2. Research designs: Quantitative, qualitative, neuropsychological, and biological, H. Cooper, P. M. Camic, D. L. Long, A. T. Panter, D. Rindskopf, K. J. Sher, 2012
76.	Essential guide to qualitative methods in organisational research. Sage publications. Cassell, C., Symon, G., 2004
	Dialogue Reports
77.	Berlin - Global Dialogue Platform 2019 Report - Berlin, GRC, 2019
78.	Manilla - Regional Dialogue Platform, GRC, 2019
79.	Kuala Lumpur - Dialogue Platform, GRC, 2018
80.	Hanoi - Asia Pacific Dialogue Report, GRC, 2017

No.	Title, author, year
	Websites
81	FAO Early Action Early Warning - EAEW System http://www.fao.org/emergencies/fao-in-
01.	action/ewea/en/
82.	AHA Centre https://ahacentre.org/publication/armor/
83.	UN Central Emergency Response Fund - CERF <u>https://cerf.un.org</u>
0.4	WFP Forecast-based financing for food security <u>https://www.wfp.org/publications/forecast-</u>
04.	based-financing-fbf-anticipatory-actions-food-security-2019
85	START Forecast-based Warning Analysis and Response Network - FOREWARN
05.	https://startnetwork.org/forewarn
86	Appeals, Plans and Updates <a 1199="" ?ac="https://www.ifrc.org/en/publications-and-reports/appeals</th></tr><tr><th>00.</th><td>andat=241 andc= andco=SP354MN anddt=1 andf= andre= andt= andti= andzo=</td></tr><tr><th>87</th><td>Mongolian FbF deployment of essentials to most vulnerable animal herding families</td></tr><tr><th>07.</th><td>https://www.youtube.com/watch?v=IKVdn6765_Y</td></tr><tr><th>88</th><th>Asia Regional Resilience to a Changing Climate (ARRCC)</th></tr><tr><th>00.</th><td>https://www.metoffice.gov.uk/services/government/international-development/arrcc</td></tr><tr><th></th><th>REAP programme https://www.climatecentre.org/news/1199/risk-informed-early-action-
89.	partnership-a-a-reapa-a-launched-at-climateaction-summit-a-let-us-work-together-for-a-safe-
	world-for-our-future-generationa
00	The Development Impact of Risk Analytics, Insurance Development Forum, 2020:
70.	https://www.insdevforum.org/sites/default/files/IDF_Risk_Analytics_19October.pdf

Annex III: Section 1 analysis

Key determinants

Beyond the seven main key determinants identified across the region and included in the Final report, country specific key determinants were also identified at a disaggregated level.

Country-specific key determinants¹

When reflecting on the 'X' factor for the key determinants extracted from the KIIs, from across all priority lenses, the findings show <u>enablers</u> included:

- Indonesia Collaboration with private industry Kartoza InaSAFE. Industry provided NP with solutions to reach, record and track beneficiaries or map target areas;
- India Replication of Bangladesh FbF approach due to transboundary nature and shared multi hazards of floods and cyclones;
- Myanmar Feasibility studies documented the evidence needed to engage with community, Government and NHMS;
- Nepal forecast interpretation support and trigger development by 510 with Danish Red Cross allowed NRC to take the next step.
- Viet Nam- Pre-existing/good collaboration with Government and NHMS offering resources and support;
- Mongolia- the Government's risk map enabled the MRCS, with the support of RCCC, to develop triggers which were successfully tested in 2017 and again in January 2020;
- Philippines Phase I program with GRC and FinnRC has invested capacity building, expertise and technology to move PRC along the FbF spectrum;
- Bangladesh experimental mindset since 2015, built internal capacity year on year, wide multi-stakeholder relations;
- Regional ASEAN AHA Centre has a policy and mandate through AADMER to commit to MS.

When reflecting on the 'X' factor for the key determinants extracted from the KIIs, from across all priority lenses, the findings show <u>barriers</u> included:

- Indonesia post-disaster mindset and human resources FbF unskilled volunteer network, geographic distances;
- India lack of finance due to Government post disaster mindset, connectivity for the last mile, geographic distances;

¹ The key success determinant is not the only reason for successful application of the FbF process, given the many enablers listed. In this context, it is the most critical feedback from the interview, that has provided the most gains towards the institutionalisation of FbF.

- Myanmar EAP technical capacity and human resources, short lead times;
- Nepal human resources, financing and collaboration with Government and NHMS, WFP variation in approach;
- Viet Nam- data and inability to build evidence on heatstroke;
- Mongolia-data for socio-economics, financing and Government ignoring ROI on FbF;
- Philippines collaboration with NHMS at national level on cyclones, lack of finance due to Government post disaster mindset, WFP variation in approach, short lead times;
- Bangladesh short lead times*;
- Policy ASEAN AHA Centre silos, collaboration between disaster management and finance, MS data access, availability and quality.

* Note: as Bangladesh is progressed in its institutionalisation of FbF, having achieved the SOD regulating AA, BDRCS's next focus is on better management of rapid onset events).

Enablers and barriers overview

Table 3 from the Final report represents the coded responses combined with some further analysis on the overall enablers and barriers mentioned by participants in the interview series. There are a number of 'sets' where respondents mentioned a specific factor, which was both an enabler and barrier, depending on the FbF institutionalisation issues being faced. The top five coded enabler and barrier responses in the interview series are bolded. Specific and unique enablers and barriers are elaborated on in the Country Profiles Chapter following.

From a quantitative assessment of the coding results, we see the word 'enabler / enabling / enables' was in the transcripts a total of 226 times. 96 uses of this term were associated with the establishment of multi-stakeholder collaborations in the following order - from most mentioned to least: Government, NHMS, RCRC and others (such as research institutes, financial intermediaries, private sector etc). The next most mentioned enabler was linked to capacities in general (68), followed by strong advocacy (29), a functioning EWS (27) and sharing of FbF studies/documentation (27).

When examining the same data, the word 'barrier/ barriers' was in the transcripts a total of 216 times. 93 uses of this terms were associated with a lack of capacity inclusive of: inaccuracy of EWS (40), lack of financial resources (21), technical/ technology limitations (19) and lack of available data (18). Outside of a lack of capacity, the second highest ranking barrier was lack of available information on FbF practice (55), institutional emphasis on post-disaster response (20); and Government restrictions on stakeholders (17).

Furthermore, the top responses during two polls during the Result Symposium validate the evidence provided in Table 3:

- Most important enabler: "High-level political championing of FbF, including through legislation";
- Most important barrier to overcome: "Buy-in from the government".

Responses have been added post coding through deeper analysis on finding additional commonalities of 2+ country responses. This includes two enablers: Decentralised volunteer network, Collaboration with others e.g. researcher, private sector; and three barriers: Geographical reach and logistics, Skilled volunteers in pre-disaster, Short lead times for hazards. This approach is robust given the small sample size and potential emerging patterns between hazards and countries.

Emerging patterns

Nvivo was used to run queries mapping stages versus enablers and barriers with a simple 'yes' 'no' framing. However, these quantified and tabulated results proved largely inconclusive and often conflicting due to the complexity and nuance of the content. For example stakeholder engagement factors could equally be enablers and barriers at the same time. In addition within stakeholder engagement the policy, and advocacy factors, as well as relationships with key partners, could again be barriers and enablers for different NS in different stages. Essentially, no patterns across stages were evident from the Nvivo analysis. Instead, manual analysis was applied to extract the nuances and identify key determinant characteristics.

Table 4 in the Final report identifies aggregated data on a comparative basis.

Annex IV: Section 2 analysis

Future directions identified in interviews

KIIs were asked what future strategies might enable them to institutionalise FbF based on both current and future needs. Responses were coded to assist with thematic identification. Key words related to future directions appeared a total of 191 times in the interview transcripts. 58 of these occurrences referred to capacity building, including building the capacity of governments, forecasters, and humanitarian stakeholders to implement FbF. The next future direction with the most mentions (44) was building additional evidence, resources, and platforms for FbF knowledge sharing. Collaboration with stakeholders had 39 mentions. Other frequently mentioned future directions included advocacy for FbF (22), the adoption of multi-hazard approaches (10), integration of FbF with other concepts (4), standardising the approach to FbF implementation (4), and simplifying the EAP development process (2).

Table 6 in the Final report represents the coded and aggregated KII responses for future strategic needs for FbF institutionalisation.

National and Regional feedback

KIIs were asked what their next steps would be for the future in terms of institutionalising FbF, what strategies they had in place and what needs they could identify as useful for scaling up. These results are presented in a disaggregated format in Table 16 below. Note: Many of the regional results are the end of the table are all potentially scalable and part of a regional approach. However regional KII responses have been categorised in the same format as the country-level responses for the purposes of consistency.

Table 16 key:

- \checkmark represents strategy is planned or underway
- + represents a need identified to support further FbF institutionalisation

Countries		Strategies (\checkmark) / needs (+) for FbF institutionalisation
esia	Scaling-up	 ✓ Draft EAP for floods - awaiting approval from the BNPB ✓ InaSAFE mapping project with Kartoza
Indone	Tools/multi- country/multi- hazard	+ NHMS reference information and evidence to share with policy makers to advocate change e.g. downscaled scenarios

Table 3: Disaggregated KII strategies / needs for FbF institutionalisation

		 + Evidence to enable decision making similar to volcano predictions which are 99% accurate + Capacity building for floods and landslides - single to multi hazard + Capacity building for use of forecasts for floods in low capacity islands + Scenario development for single and multi-hazards - accounting for different extremes across countries and locations i.e. work with NASA on satellite data
	Coordination mechanisms	✓Alternative communication channels e.g. WhatsApp groups + Dialogue Platforms- consider how to make engaging in virtual form
	Financing FbF/EWEA	+ Understanding how to advocate to the Ministry of Finance to change their models and release funds
	Documenting FbF/EWEA learnings	 ✓ Draft EAP for floods developed + Best Practice Guidance: relationships with Government on EAPs and financing FbF, relationships with NHMS on useful forecast products; decentralised capacity building models, scenario development for multi-hazards
	Regional role	 + Dialogue Platforms + Regional scale scenario development + Advocacy to Ministry of Finance for release of funds + Best practice guidance
India	Scaling-up	 ✓ Hydrologist hired ✓ Trigger thresholds and activation terms to be identified and evaluated by technical and implementation teams ✓ State branch to identify and train volunteers for EAPs ✓ Pre-monsoon sensitisation meeting + Test EAP + Transfer flood learning to cyclones
	Tools/multi- country/multi- hazard	 + Capacity building to shift existing process of developing annual cyclone readiness plans, to pre-disaster plans + Capacity building in floods as a single hazard, as well as cyclones as a multi-hazard, in addition to COVID response
	Coordination mechanisms	 ✓ Technical working group regular meetings (IMD and CWC) ✓ WhatsApp + Foster India-Bangladesh synergies for India to learn and adopt successful model elements e.g. ROI, triggers
	Financing FbF/EWEA	\checkmark IRCS can advance funds for the short duration between trigger and funds from FbF window arriving
	Documenting FbF/EWEA learnings	 ✓ EAP trigger threshold and activation methodology ✓ EAP developed for floods ✓ 8 x EAs: EA1. Early Warning message dissemination (WhatsApp/Social media); EA2. Evacuation/ Transportation of Flood affected people and livestock to temporary Flood Shelters: EA3. Conditional Cash Distribution

		based on a threshold level; EA4. Distribution of tarpaulins; EA5. First Aid Services; EA6. Water Sanitation and Hygiene support; EA7. Distribution of Mosquito nets; EA8. Collaboration with District Administration/ Line Department for preparatory action and early warning + Understanding how to develop ROI, triggers, effective policy and what other types of FbF studies should be conducted
	Regional role	 + Skilled human resources for development of EAPs, and simplification of the process + MOUs sharing detail of how RCRC navigate government relations related to financing FbF, evacuations, SRSP + FAQs on boundary of auxiliary role of RCRC, diverting resources from post disaster response to pre-disaster, digitalisation opportunities etc. + Publishing and promoting success stories to advocate for FbF, especially in trust-building with community for engagement
	Scaling-up	 ✓ EAP for floods and cyclones to be finalised ✓ Myanmar Country Plan 2021-2025 - accessing FbA by the DREF
Myanmar	Tools/multi- country/multi- hazard	 ✓ MUDRA maps in development by Government with updated population and urban development data + Capacity building in floods, cyclones, droughts, heatwaves as a single hazard + Capacity building in floods and cyclones and heatwaves and droughts as multi-hazards
	Coordination mechanisms	 ✓ WhatsApp, Viber + TWG established with a focus on agricultural triggers and EAP finalisation + Work closely with UNICEF's Social Management Information System (SMIC) to coordinate on beneficiary data and build SRSP-FbF synergy + Foster Myanmar-IMD synergy to ensure cyclone forecasts are provided promptly / same time as Philippines + Foster Myanmar-Philippines synergy through SEADRIF for Myanmar onboarding in the future
	Financing FbF/EWEA	+ Decentralise funds and actions to the local level + Discuss with American Red Cross and Finnish Red Cross the possibility of a percentage or transition to exante funds, from the Community Disaster Emergency Fund
	Documenting FbF/EWEA learnings	 ✓ Feasibility Study on FbF/EWEA soon finalised ✓ Draft EAP developed for cyclones ✓ EAs x 4 developed for flooding: EA1. Help secure homes from thieves by distributing locks in order to encourage people to evacuate; EA2. Fortify homes or evacuation centres to reduce the damage caused; EA3. Early harvesting for rice in rural areas; EA4. For heat waves and floods, a potential early action is to provide factory employers and vulnerable street workers with information about protecting themselves / their employees
	Regional role	+ FAQs on boundary of auxiliary role of RCRC etc

		 + Facilitate World Meteorological Organisation / Global Facility for Disaster Risk and Recovery potentially sponsor research into urban development, and heatwaves to support NHMS with forecasting + Research of FbF in conflict and non-conflict areas
	Scaling-up	 ✓ Scale up existing early action activities (RC and WFP) ✓ Develop EAPs for the FbA by the DREF ✓ Strengthen the capacity of the Met agency through the existing ECHO project
	Tools/multi- country/multi- hazard	 ✓ Collaboration with RIMES tool (WFP) ✓ Digital elevation model and transboundary model for floods (WFP) + Investigate how to implement FbF for additional hazards such as flash floods, landslides, and heatwaves. + Establishing official Risk Facilities (as they have in Africa)
	Coordination mechanisms	\checkmark Continue work through the TWG to coordinate between members from all humanitarian, government, and forecast agencies
Nepal	Financing FbF/EWEA	 ✓ GCF funding approved for climate resilience (partnership with FAO) ✓ Funding from ECHO Project to fund FbF and SRSP + Potential pooling of funds from different mechanisms to harmonise activities (e.g. CERF, DREF, Start Networks)
	Documenting FbF/EWEA learnings	 ✓ Documenting findings from ECHO Project (RC) ✓ ARRCC EWS study with DFID (RC) ✓ Gaps and needs assessment for Response Farming (WFP) ✓ Household anticipatory kits + Sharing lessons learned upstream and downstream, including on false alarms, missed forecasts, risk instruments, correcting bias, accessing funding
	Regional role	+ Develop a regional advocacy curriculum to gain buy-in from governments across the region
	Scaling-up	 ✓ Presenting EAP for approval to the Government in quarter 3 of 2020, after 3 years in the making ✓ Looking to build national met agency's capacity and to integrate with the VNDMA who is running the met agency ✓ Work with Vietnam National Centre for Hydro-Meteorological Forecasting (NCHMF) to build capacity and buy-in in addition to IMHEN + Scaling up heatwave response
Vietnam	Tools/multi- country/multi- hazard	 ✓ Host workshop to create an additional trigger for cyclones, working with Met agency + Look into creating triggers for cyclones and floods
	Coordination mechanisms	+ Establish an FbF TWG with members from all humanitarian, government, and forecast agencies
	Financing FbF/EWEA	\checkmark Finalising EAP for the FbA by the DREF

	Documenting FbF/EWEA learnings	 ✓ EAP developed for heatwaves ✓ 3 x EAs: EA1 opening community colling centres complemented by red cross cooling buses; EA2. retrofitting of slums with shading roofs EA3.cash distribution for utility bills. + Share with others lessons learned around overcoming need for perfectionism, providing a forecast that is 'good enough' for humanitarians to use + Learn lessons from Mozambique, Bangladesh and Philippines
	Regional role	+ Create a repository of early actions that can be tailored for different contexts
Mongolia	Scaling-up	 ✓ Share and apply learnings from the Impact Assessment (FAO-MRCS) + Test and prepare scaled-up approach for 2021 dzud
	Tools/multi- country/multi- hazard	 + Building up multi-hazard approach and capacity of NAMEM for flash floods, wildfires, and pets (animal infectious disease) ✓ Mobile devices and digitalisation used with stakeholders ✓ NAMEM's socio-economic dzud risk map ready for users ✓ PRISM collaboration (data ready 2022) on climate impacts and vulnerable communities ✓ RIMES tool by FAO on climate impacts and vulnerable communities
	Coordination mechanisms	 ✓ FbA training with Australian Red Cross Society - dzud scenarios ✓ Continue NDMA, NAMEM and HCT meetings ✓ FAO-MRCS case to government on ROI and exante funding policy
	Financing FbF/EWEA	 + Coordinate exante funding with other humanitarian actors (HCT) to ensure equity for beneficiaries in similar situations + Pre-positioned fianancing by the Government
	Documenting FbF/EWEA learnings	 ✓ 2017 case studies: ROI ✓ 2020 case study: ROI ✓ 2020 impact assessment with FAO: ROI - quantitative and qualitative ✓ FAO's Climate Smart Livestock Transaction System ✓ EAP developed for dzud ✓ 2 x EAs: EA1. Cash grant to allow herders to stock hay and fodder; EA2. Distribution of veterinary/livestock care kits
	Regional role	 + Advocacy for Government to shift to pre-positioned financing country- wide when enabled by successful ROI studies for 2021 dzud + Training on multi-hazard approach - possible options for replicating success of one EAP to develop other hazard specific EAPs e.g. dzud transfer for flash floods
Philippines	Scaling-up	 ✓ Draft MOU for typhoons with PAGASA (national level) ✓ 4 x EAs - Shelter Strengthening Kits (Build Change) for typhoons ✓ EA - Evacuation of livestock for floods ✓ EA - Cash distribution ✓ EA - Early harvesting ✓ Phase II of FbF project, handover the PRC December 2022 + Replication of evacuation EA for slow onset hazards e.g. drought, volcanos

		 + Building up multi-hazard FbF response for: floods, droughts, heatwaves, landslides, storm surges and volcanos + Strengthening PAGASA capacity for Impact-based Forecasting
	Tools/multi- country/multi- hazard	 + FbF accuracy to be improved within 72-hour window with downscaled data + Common approaches multi-country shared land-based hazards e.g. Philippines-Vietnam synergy (510 model, evacuation of livestock, shelter kits for coastal homes)
	Coordination mechanisms	 ✓ Continue national and Chapter level TWGs ✓ Catanduanes Chapter interested to share lessons learned within and outside of PRC + PAGASA dialogue to progress anticipation of typhoons and use different triggers by different agencies + Identify and work with senior Government champions to support the technical teams and results + PRC to share lessons learned and good practice between Chapters - vertically and horizontally
-	Financing FbF/EWEA	 ✓ GCF FbF co-financed project - pilot sites ✓ LDRRMF implementation + National policy on FbF financial mechanism
	Documenting FbF/EWEA learnings	 ✓ 510 lbF model ✓ EAP developed for typhoons ✓ 3 x EAs developed: EA1. Early harvesting of matured crops: this Early Action must be contextualised to the different regions where it is considered; EA2. Evacuation of livestock or assets is considered only in Bicol and in Mindanao, where there is a higher concentration of livestock; EA3. Installation of Shelter Strengthening Kit (SSK) will be possible in the four regions of intervention ✓ Draft EAP for floods developed ✓ Continue M&E from pilots ✓ Develop case studies, ROI studies from four simulations - link to food security indicators for WFP support and advocacy to Government ✓ Publish and promote case studies and CBA studies
	Regional role	 + Facilitation of: taking existing MOUs forward to signing, securing downscaled data for rapid onset hazards, + Host dialogue sessions: elevated risk and AA (if activated and event does not happen), managing mindset of "success" when event does not happen, are rapid onset and FbF compatible?, forecast producers versus forecast users (roles, expectations and opportunities), broadening FbF approach for non-climate-hazards (COVID, dengue, volcanic ash) + Sharing practice on: early action benefits, 510 IbF model for use by the region + Organise talks with WMO - plans to introduce IbF + Prioritisation of country-specific (and selected) Senior Government Champions to advocate mainstreaming of FbF and progress common agenda issues + Investment in drought and El Niño

Bangladesh	Scaling-up	 ✓ Continue advocacy to increase buy-in so that governments take full ownership of FbF implementation ✓ Scale up flood and cyclone interventions to additional target areas + Move toward an Impact-based Forecasting model
	Tools/multi- country/multi- hazard	 + Build up multi-hazard FbF response for floods, flash floods, cyclones, and landslides + Replicate cyclone preparedness programme to apply to other hazards
	Coordination mechanisms	+ Strengthen collaborations between scientific and non-scientific agencies
	Financing FbF/EWEA	 ✓ SOD pre-disaster funding available ✓ Seek additional and consistent sources of funding + Investigate the potential of applying for GCF funding for FbF
	Documenting FbF/EWEA learnings	 ✓ EAP developed for cyclones and floods + Share information with partners at the national, regional, and global levels + Capturing the views and experiences of beneficiaries as evidence; not just quantitative impact data
	Regional role	 + Identify FbF champions to work in the country and region on advocacy to increase government buy-in + Investigate potential for a regional basket of funding to be created for FbF in South Asia + Attain political-level buy-in for FbF, akin to Sendai Framework
Regional	Scaling-up	 ✓AADMER 2021-2026 ✓ EU ECHO FbF/EWEA and SRSP: Nepal, Vietnam and Philippine case studies + Regional partnerships in order to broaden the FbF approach for larger geographic target areas + Partnerships with regional forecasting centres to support relationships with NHMS
	Tools/multi- country/multi- hazard	 ✓ ASEAN Disaster Monitoring and Response System (DRMS): drought, flood, earthquake, tsunami, volcanos, storms, typhoons and landslides ✓ National Disaster Preparedness Baseline Assessment (NDPBA) multi- hazard risk profile e.g. Vietnam, Philippines and Indonesia ✓ ASEAN Joint Disaster Response Plan (AJDRP) - initial stage of mapping largescale catastrophes and response systems e.g. earthquakes (central Manilla), Tsunamis (cascading effects), and super cyclones (Myanmar) ✓ Sentinel ASEAN provides spatial information to AHA Centre which is passed on to MS before a disaster occurs + FbF and EA for slow onset drought across the region + More pilots to test and evidence resilience gains through FbF: EAs and lbF + Map capacities of NHMS and NS, and which hazards they are familiar with + Aggregate data and forecast information to support regional disaster predictions

		+ Share findings of climate information approaches e.g. ARC
	Coordination mechanisms	 ✓ Warehousing of stock e.g. Malaysia (managed by WFP), Philippines and Thailand ✓ ASEAN joint plan with IFRC and partnership with UN OCHA (WFP and UNICEF) ✓ RCCC providing direct technical assistance to NS engaging in finance, forecast information and trigger development ✓ RCCC supporting development partners on triggers ✓ FbF Asia-Pacific TWG, chaired by FAO + TWG on FbF/EWEA and SRSP reactivation and continuation + Understand fit of other TWGs/programs e.g. Joint Taskforce on Humanitarian Assistance Disaster Relief, ROHAN (regional humanitarian centres network) and EU SAHA² + Engagement with Governments on multi-hazards to address their needs, rather than working through one EAP single hazard at a time + Harmonisation of EA approaches at national levels between agencies to avoid confusion for the NS e.g. Nepal and WFP + Coordination on EA and FbF with - regional organisations, national Governments, national Disaster Management Agencies, other relevant organisations + More collaboration required with NHMS to understand ground level impacts + Coordination within ASEAN e.g. sociocultural pillar (where disaster management sector sits) and economics pillar (where finance sits)
	Financing FbF/EWEA	 ✓ ASEAN Emergency Response Assessment Team ✓ ASEAN Disaster Risk Financing Insurance program (DRFI) ✓ UNICEF's study on Disaster Risk Finance and Social Protection + Demonstrating how FbF can trigger cash transfers at the bigger scale + Demonstrating understanding and evidence on how anticipatory action fits within a risk transfer model and SRSP + Flexible financing model for EA + Identify potential climate adaptation funding sources e.g. GCF, WB e.g. Nepal and the Philippines have GCF approved projects + AJDRP search for funding to complete the project
	Documenting FbF/EWEA learnings	 ✓ ASEAN Risk Monitor and Disaster Management Review (ARMOR) - Bridging Science and Decision-making ✓ NASA supported forecast information in Mongolia with WFO and Mongolia RCS + Inclusive languages and translations - improve representation, access and learning to FbF ground impacts and results + Bringing the EA and FbF evidence together e.g. repository of EAs + Building case studies for learning - FbF development and results by NS e.g. Nepal collaborating with WFO, NHMS and Disaster Management Agency to see DRR policy integrate AA. This provides the link to FbF and EA

² EU SAHA: European Union through the Integrated Programme in Enhancing the Capacity of the AHA Centre and ASEAN Emergency Response Mechanisms Project

	+ Inclusion of broader continuum: resilience building, climate finance and EA
Regional role	 ✓ Operating as a demand type model - providing support where it is needed most urgently. Mainly working with Nepal, Bangladesh (forecasts), Philippines (EAP for flooding) and recently India. (RCCC) ✓ Coordination with MS and embedding FbF into the AADMER work cycle 2021-2026 ✓ AHA Centre Information Management Network (AIM Net) - in development ✓ ASEAN Declaration on Drought + Advocacy of the FbF concept to Governments to: increase buy-in and country ownership/accountability; support policy and financial shifts in law and in practice across the region - especially where results show EA and FbF performance (e.g. Nepal, Mongolia); + Advocacy to harmonise overall anticipatory mechanisms in the region based on ground evidence collected

Future directions for FbF

There are various short- and long-term actions that can enable the process of institutionalising FbF. This section provides suggestions for future directions at the country and regional level by answering key questions posed by the IFRC APRO, in relation to the priority areas.

What strategies need to be in place across-country and at regional level to scale up FbF?

There is no single path to institutionalising FbF at the country and regional levels and it is necessary to look at the country-specific barriers identified, in addition to specific needs raised in Table 16. However, the countries farthest along in their institutionalisation are those which have had:

- A strong investment in capacity-building to understand and implement technical aspects of FbF, at the level of humanitarian partners and forecasters;
- Strong and consistent collaborations between humanitarians, forecasters, and governments;
- Feasibility studies and/or pilots testing a single trigger intervention;
- Evidence generated from pilots;
- Expansion of pilots to cover additional areas and/or hazards -including through the creation of multiple triggers e.g. Bangladesh, Philippines; and
- Access to additional funds in proportion to the expansion of FbF.

The ultimate goal is for FbF to be fully owned an implemented by governments. While many RCs and humanitarian agencies have strong relationships with governments, there was no stakeholder we interviewed from a country where FbF is fully owned by the government. This should thus be a key priority moving forward.

What capacity is needed from intergovernmental and regional bodies to scale up FbF? How important is capacity compared to other factors for scaling up FbF?

Capacity is likely the most important factor for effectively scaling up FbF. An injection of capacity into RCs, forecasters, governments, and other humanitarian partners could be the biggest enabler for the scale up of FbF. Capacity is linked to these stakeholders' budgets, and as such building capacity effectively may require accessing additional funds, including from the climate finance system, to ensure they have sufficient human resources to implement and advocate for FbF.

Organisations such as IFRC, RCCC, and European-based RCRCs have been instrumental to supporting country-level FbF institutionalisation, particularly in terms of providing technical support. A key role they are already playing is in knowledge management, product development, and the sharing of good practice. This support will continue to be vital during the scale-up process and could be accelerated with the endorsement by ASEAN AHA Centre of RCCC as a Focus Institute.

Currently, regional actors such as ASEAN and SAARC have not been providing support for FbF institutionalisation in member countries, and many of those countries have progressed on FbF institutionalisation without their support. In lieu of this support, other organisations have filled this gap e.g. RCRC, IFRC, RCCC and GFDRR. Thus regional support may not be a key bottleneck for institutionalisation, but it could serve as an enabler should it be prioritised.

In terms of future directions, regional and intergovernmental bodies should devote capacity to advocating for full government ownership of FbF. At present FbF is inconsistent as it covers only specific locations for specific hazards, and relies heavily on humanitarian partners and volunteers. While it will not be easy, the shift from reliance on humanitarian partners to government ownership will be the single greatest factor in institutionalising FbF.

What policies at regional level need to be in place to be able to scale up FbF?

Scaling up FbF is fundamentally a process led by in-country stakeholders, as they build relationships with governments and forecasters, and consider the best next steps. Policies at the regional level, however, can help countries in their FbF institutionalisation processes.

To enable access to finance, regional stakeholders could earmark regional pots of money for FbF that would be easily accessed by member countries. For example, ASEAN's emergency and assessment fund could transition to focusing on anticipatory action. Regional partners can also play a role through providing regional risk insurance pools such as the SEADRIF in Southeast Asia. Moreover, regional stakeholders can help countries adopt models such as Impact-based Forecasting that strengthen countries' capacity to identify appropriate beneficiaries for FbF based on forecasts and hazard exposure.

Are there regional-level initiatives to change policies and legislation in favour of FbF, for example by ASEAN or some of its member states?

There do not appear to be any regional-level policy initiatives focused on FbF legislation. The exception is IFRC's effort to integrate FbF into ASEAN's newest AADMER work programme, but it appears these conversations are in their early stages.

How does the current regional effort of integrating FbF and Shock Responsive Social Protection translate into a viable scaling-up strategy? Are there any related approaches or mechanisms that would support the scale-up of FbF?

The current regional effort to integrate FbF and Shock-Responsive Social Protection (SRSP) is a promising approach to the institutionalisation of FbF. However, there does not seem to be a harmonised approach amongst all stakeholders; not all humanitarian actors we spoke to understood its implications.

The regional FbF/EWEA and SRSP TWG is discussing the integration of SRSP with FbF through the "Scaling up Forecast based Financing/Early Warning Early Action (FbF/EWEA) and Shock Responsive Social Protection (SRSP) with innovative use of climate risk information for disaster resilience in ASEAN" project. However, not much progress has been made. TWG stakeholders mentioned they are waiting to see approved EAPs before moving on to outline roles and responsibilities. Stakeholders felt FbF projects did not yet demonstrate sufficient scale for cash transfers and that other EAs such as evacuations and home renovations were less pertinent to SRSP programming. The ECHO project comes to an end in 2021, something the TWG stakeholders also felt was too early to achieve the outcomes of an EA repository and joint roadmap.

What technical tools and strategies are developed for multi-country or multi-hazard implementation? For example, to what extent does a regional repository of early action and triggers allow for implementation across countries and hazards?

A main strategy amongst the countries is to work collaboratively between forecasters and humanitarian partners to develop triggers and other useful forecast products. This often involves capacity support from external partners such as RCs and the Climate Centre. For example, the German Red Cross has been a key partner in facilitating collaboration between Vietnam RC and the forecaster, IMHEN. IMHEN and Vietnam RC have worked together to develop a trigger for heatwave anticipatory action.

There are a number of initiatives, domestic and international, aimed at strengthening forecast capacity, but many stakeholders still noted problems with forecast quality. Some of these initiatives, such as the ECHO regional FbF capacity project, are working in multiple countries. But at the country level, no governments are coordinated to jointly deploy FbF.

There exists a gap in terms of multi-hazard strategies for FbF. While some countries are working on more than one hazard (e.g. Bangladesh), the approaches to carrying out FbF for those hazards are not harmonised. Countries would benefit from a roadmap that sets out how to integrate FbF for separate hazards into one central tool or approach.

A regional repository of early actions is seen as a positive initiative according to multiple stakeholders. If this tool is developed it is important to ensure it is widely used; the developers of this tool should invest effort in socialising its contents with the various National Societies. To a large extent the success of such a tool depends on whether human resources are available to take up its findings. Thus it is vital to ensure humanitarian and government stakeholders have adequate staff capacity dedicated to institutionalising FbF.

What elements of the FbF approach can contribute to making it more flexible to multi-hazard situations such as epidemics/pandemics or conflict?

As COVID-19 has shown, multi-hazard situations add significant complexity to early action and DRR approaches. Multi-hazard analysis can be especially useful for identifying overlapping vulnerabilities amongst communities.

COVID-19 also saw funds, regulations and implementations carried out in record time. It is a good precedent for climate change and FbF, as well as the need to integrate biosecurity measures. Much funding has been reallocated to COVID-19, leaving a gap in FbF and other essential country programming.

How can FbF capitalize on existing early warning systems for different hazards, including seasonal and sub-seasonal forecasts?

There is a need for harmonisation between different forecast systems used at the local, national, and regional level. A deeper collaboration with forecasters, with additional capacity support from technical and scientific leaders such as the WMO, can enable this harmonisation.

FbF is currently a piecemeal approach in most countries rather than a robust aspect of the disaster risk spectrum. Building further collaboration with disaster risk agencies is an important means to identifying synergies with existing early warning systems.

ARC is a four-year DFID-funded project in partnership with the UK Met agency which looks at timescales of weather and climate change projections at seasonal and sub seasonal levels and IbF. The initiative seeks to build stakeholder capacities at regional level and national levels. Working also with the NHMS and the DMA to establish appropriate tools and inform the decision-making process.

How can FbF link to existing early warning early action and DRR approaches to act on a larger number of hazards and lead times?

Most National Societies mentioned their capacities for DRR as having set a good foundation for FbF. As countries and humanitarian partners scale up their FbF work, they can build links between their FbF and DRR programming. Many country stakeholders mentioned that their countries are very much in a 'response mindset,' wherein they focus mostly on responding to disasters rather than preparing for or anticipating them. This view is also commonly held within ASEAN.

Building FbF elements into existing DRR programming can provide a more complete spectrum of disaster risk management while becoming more systemic in addressing additional hazards.

What coordination mechanisms (across country and at regional level) need to be in place for effective implementation of anticipatory action?

For the effective implementation of anticipatory action, effective coordination is essential. Most countries would benefit from an enhanced investment in coordination, be it through establishing FbF departments within government and/or humanitarian agencies or investing additional resources into the coordination of Technical Working Groups.

In some instances, TWGs would benefit from additional capacity support. For example, TWGs could serve as a regular liaison with IFRC to update on progress and identify areas for strengthening capacity. IFRC could assist countries in forming new TWGs where they do not already exist, or where the NS does not appear to be actively engaged, e.g. India, and potentially other countries not included in this study. The formation of a TWG could be one of the first steps for initiating FbF programming, in order to ensure consistent coordination, collaboration, and communication from the get-go.

Multiple humanitarian stakeholders mentioned a lack of a coordinated approach between their agency and other humanitarian agencies. For example, in Nepal, stakeholders mentioned a lack of strategic coordination between RC and WFP. Dialogue platforms at the national level could help with this, but ultimately a consistent partnership approach is necessary to ensure complementarity in FbF.

How do FbF/EWEA partners support increased coordination of Early Actions across countries once an extreme event is predicted across borders?

At the moment there is very little in terms of cross-border collaboration on FbF, where hazards cross country boundaries. Regional stakeholders such as ASEAN and SAARC could play a role in this take the lead. This coordination could also provide access to a regional pot of funding for FbF, or for FbF capacity-building initiatives.

For example, where Vietnam and Philippines experience common cyclones, or where Bangladesh and India experience common flooding, or where storms in Nepal lead to cascading effects such as flooding in Bangladesh, they could work with regional partners to trigger joint access to FbF.

Forecasting in a timely way remains a challenge with Myanmar NS commenting that cyclone information from IMD in India comes too late, and often later than when the Philippine NS receives it and is able to take action with a little more lead time.

Are national and regional Technical Working Groups (TWGs) integrated into the broader response framework?

Technical Working Groups are widely employed to coordinate stakeholders for FbF strategy and implementation. However, the level of activity and engagement of the TWGs varies. At the time of interview, the ASEAN regional TWG on FbF was reported to be inactive.

What could be the role of intergovernmental bodies (such as ASEAN / AHA Centre) in coordinating national, multi-country, or regional anticipatory action?

Regional actors such as ASEAN and SAARC can play a role in:

- Strengthening the capacity of country governments to implement FbF
- Providing forecast support through regional and transboundary forecasts and hazard assessments,
- Generating evidence and sharing lessons learned amongst the region,
- Advocating for building FbF into law and policy,
- Ensuring that barriers are removed with new policies e.g. Philippines LDRRMF (memorandum 60).

Particularly, the region would benefit from joint coordination on FbF at the political high level. Regional bodies should devote resources for high-level political coordination on FbF. This could look like training on FbF for country '*Champions*' within governments, convening leaders in a regional high-level FbF forum, and/or liaising with countries' climate change ministries.

What strategies do we need across country level and at regional level to increase the financing of EA?

Financing of EA at the country levels requires Governments to work with their Ministry of Finance, Disaster Management Agency, Ministry of Environment (Climate Change Departments) and Ministry of Agriculture to change existing emergency fund policies focused on post-disaster response and to think more broadly about the continuum of climate resilience and the relationship between EA and climate adaptation e.g. short crop growth cycles selected, drought tolerant agriculture, nature-based solutions. Fostering this link provides the opportunity to source other funding such as public-private partnerships (e.g. GCF) that require country ownership and accountability.

Financing mechanisms need to be pre-positioned at a decentralised level so when triggered, automatically release funds channelled to the pre-agreed EAs as set out in the EAPs. Barriers need to be removed where decentralised funds already exist but remain challenging to access e.g. Philippines.

Strategically it makes sense for released funds to be assessed from a performance management perspective through ROI and pre-post impact studies citing not just savings, but avoided L&D and suggested refinement for EAs. This builds evidence and could lead to a crowding-in of more funds by existing and prospect funders, for future events. The focus needs to be placed on Government avoided costs of L&D and built resilience. In addition to Government ownership and reinvestment in FbF/EWEA.

Country level strategies include:

- Identification of existing emergency funds to be restructured to allow for a percentage of funds to be allocated for pre-disaster decentralised use e.g. Myanmar's Emergency Management Fund is about USD 20,000 per state and could be restructured to disburse funds to EAs pre cyclone. This could commence as a pilot and be scaled regionally.
- Dedicated FbF Champions (with regional support) to advocate and fast-track policy decisions on financial restructuring for prepositioned funds for EAs with the Government and key Ministry counterparts.
- Policy needs to enshrine pre-positioned funds at all levels of Government.
- Existing EA financial mechanisms provide an opportunity for piloting in other countries based upon shared characteristics e.g. transboundary nature of the hazard Bangladesh's SOD with India; geographic context Philippines LDRRMF with Indonesia based on isolated island terrain; Philippines LDRRMF and Myanmar cyclone hazard.
- Technical support for NS development of EAPs focused on multi-hazards to ensure EAs are available, agreed and tested as part of a due diligence and risk management approach.
- Focus on partnerships that accelerate the building-in of socio-economic data linking livelihoods and asset protection with resilience for IbF. E.g. Indonesia and InaSAFE, Myanmar and MUDRA / PRISM are case studies for scaling.
- Conclusive joint EA impact assessments, supported by TWG, to convince Government to formulate new financial regulations supportive of EAs e.g. MRCS and FAO in Mongolia is a case study for scaling.
- Financial management training within NS at headquarter and local Chapter level to administer funds for EAs from bilateral donors, FbA by the DREF and other EA funders.
- Comprehensive training for staff and volunteers on EAP procedure and scope of work e.g. India's programme by the State Branch.
- Identification of alternative sources of climate financing: e.g. Adaptation Fund, GCF, GEF, CIF, WB. E.g. both Nepal (FAO) and the Philippines (WFP) have recently secured GCF funding;
- Identify focal points for climate finance mechanisms and engage the Government on partnering to achieve the NAPs and meet the Sendai Framework Principles through EA financing.
- Support Government and accredited entities with GCF Readiness Programming.
- It may be possible for NSs to become accredited entities for direct partnership with the Government for program implementation, such as other agencies have achieved e.g. Save the Children. This is a lengthy process and it is worth considering existing partnerships with those agencies already accredited. Alternatively accreditation could be pursued and piloted in countries where strong Government and stakeholder relationships are I place e.g. Bangladesh.

All of these approaches require regional level advocacy and facilitated dialogues with high-level Government officials, to direct a change in mindset, engage with climate financiers and develop new policies and financial regulations that enable a shift from

post-disaster support to EA support for pre-disasters. Regional level coordination is critical with the MS through the TWG, selected FbF Champions and Government.

The ASEAN AADMER 2021-2026 is a critical piece of programming that IFRC has an opportunity to influence to ensure that EA and FBF is embedded with clear and agreed expected outcomes. It's also important to identify losses in the current regional systems and coordination mechanisms to determine if some initiatives could be reconfigured or discontinued, and new mechanisms developed in order to optimise funding for EA and FbF.

Regional approaches support scale, resource identification and allocation, and prioritisation.

Regional level strategies include:

- ASEAN (with the help of IFRC), to shift its disaster management programming from the social-cultural pillar, to the economic pillar.
- AADMER 2021-2026 programming to address lack of Government buy-in directly through policy reform suggestions. ASEAN to develop no regret FbF policy roadmap for NS including a formal kick-off meeting with MS Governments to dialogue and agree the steps and timeline towards policy development and financial allocation to EA.
- AADMER EA pilot programming is needed for evidence building and to attract investors while capturing lessons learned and replicating. This includes the building of an EA repository for the region, increasing geographic scale of target areas for multi-country and multi-hazard opportunities to test cash based transfers and other EAs, in addition to diversifying the EA model. Such regional approaches are encouraged by climate finance mechanisms including the GCF.
- ASEAN to work with MS and FbF TWG to support models of EA harmonisation to reduce current frustrations e.g. Nepal, Philippines; and to ensure EA equity for beneficiaries where relevant e.g. Mongolia. This may provide a basis for greater partnership arrangements and pooling of funds.
- ASEAN to coordinate EA financing roundtable with relevant stakeholders to identify regional level financing, flexible EA models and align with investor expectations: MS, national Ministry of Finance, WB GFDRR, ADB, insurance companies, NASA, Climate Policy Initiative, GCF, GEF, AF, CIF.
- IFRC to identify and map regional roles and responsibilities related to FbF in general, and specifically related to financial mechanisms for EA i.e. AHA Centre, SAARC, RCCC, WFO, FAO, UNICEF, REAP etc.
- Development of concept for regional funding mechanism. This could be reconfiguration of the ASEAN Emergency Response and Assessment Team which currently requires replenishment from members. New replenishment levels could be decided along with repurposing the initiative for EA.
- Assessment of other regional funding facilities as models, such as the recent COVID basket and SEADRIF e.g. Philippines to be scaled in Myanmar.
- IFRC assessment of results from the UNICEF landscape study on Disaster Risk Finance and Social Protection.

- TWG for FbF/EWEA and SRSP to evidence how anticipatory action fit within a risk transfer model and SRSP based on current case studies (globally and in the case study countries of Nepal, Vietnam and Philippines for scaling.
- Assessment of Bangladesh and Philippine pre-disaster financing models to showcase good practice for other NS, in addition to identifying remaining barriers for implementation, in the case of Philippines in particular.
- ASEAN and AADMER support of FbF Country Champions through the FbF TWG
- ASEAN and IFRC to develop knowledge products supporting evidence of smart EA financing arrangements e.g. Bangladesh use.

What is the complementarity or advantage of the RCRC / FbA by the DREF compared to UN funds such as the CERF? What is its appeal to donors?

Up until recently the funds served different purposes in terms of sequencing. However, the CERF successfully evolved July 2020 to provide a Rapid Response window of USD 5.2 million for EAs during the Bangladesh funds. This was the fastest allocation of CERF funds ever and complemented the allocated funds from Government through the SOD in addition to the FbF system established by the BDRCS, Significantly this includes the use of probabilistic forecasting methods, the trigger and EAs.

Deeper analysis/mapping of the interaction between these two funds, and other regional funds e.g. FAOs SFERA, may highlight more financial synergies for FbF institutionalisation and assist NSs navigate their options for the optimal approach of funding FbF and EA. Donors likely find this approach attractive as the funds are mutually reinforcing in terms of sequencing thereby avoiding any duplication, overlap and inefficiencies. The funds are disbursed in consultation with key partners from Government and the humanitarian Country Teams who take on different but coordinated action.

Complementarity and advantage of the FbA by the DREF:

- FbA by the DREF is advantageous as it is specifically designed for anticipatory response through pre-disaster EAs based on meteorological data and an agreed trigger linked to hazard exposure and risk. In this sense the FbA by the DREF is unique as it looks to drastically reduce vulnerability in small and specific target areas during a predetermined window (lead time is determined based on if it is a slow or fast onset event). The Fund is capped at CHF 350,000 for 2,000 homes and can be disbursed within a five-year period. The Fund is small compared to the CERF and aimed a very targeted area.
- Unlike a number of other humanitarian funds that respond during or after a disaster occurs, this mechanism is coordinated as direct action pre-disaster in agreement with key actors, such as Government, NHMS and other humanitarian actors who may partner in the approach. The EAs have been tested as pilots to demonstrate effectiveness and provide an opportunity for further refinement.
- Essentially the FbA by the DREF complements other humanitarian funds by laying down the ground work for slow onset and rapid onset events through a series of ground-based activities that reduce vulnerability and increase resilience as pre-

defined for that specific target area. This occurs prior to other funds kicking-in during or after the disaster as part of a more traditional emergency response.

• Complementarity is also based on the shared network and relationships of humanitarian country teams consulted in the approach to avoid fragmentation and duplication of efforts.

Comparison to the UN's CERF:

- The CERF Rapid Response window allows country teams to kick-start relief efforts in a coordinated and prioritized response when a new crisis emerges. The CERF RR focuses on: sudden onset disasters, rapid and significant deteriorations of existing crises, and time-critical interventions. RR grants (uncapped) provide initial funds to start-up or scale-up essential humanitarian activities, and partners are expected to seek other resources to complement the CERF funding. CERF funding can therefore scale up efforts achieved during implementation of EAs under the FbA by the DREF and apply the same forecasting methods and EAs (linked to agency roles and responsibilities).
- The CERF does not fund preparedness and prevention programs, however, the CERF fund can support early action that provides a time critical response aimed at reducing the loss of life and suffering, usually in slow onset emergencies and supported by pre-gathered evidence.
- However, in the case of the Bangladesh floods this July, the BDRCS accessed the CERF as a subcontractor to WFP as part of the USD 4.24 million project: "Forecast based Anticipatory Early Action to Support Disaster Preparedness for the Flood Affected Vulnerable Households". This reached 23,000 homes.

Appeal to the donors:

• No donors were interviewed as part of this study. However it is assumed this type of complementarity would be attractive as there is a specific fit for purpose with this hand-in-glove two-phased funding which looks to mitigate the impacts of loss and damage based on scientifically tested evidence while increasing longer term resilience. The CERF funds capitalise on the initial gains made by the FbA by the DREF and reinforce those gains made from EAs. Avoidance of duplication and agreement by the wider key government, NHMA an humanitarian partners is also attractive as a programme and costs efficiency.

Do regional and intergovernmental bodies have legislation in place that allows the allocation of (enough) funds for anticipatory action?

No. Anticipatory action in the region is currently vastly underfunded due to the prevailing views, structures and practices supportive of climate change disaster risk reduction and disaster response. This leaves anticipatory action as a gap both in terms of legal and financial response. Financial mechanisms for anticipatory are largely funded by the humanitarian sector. This is unsustainable given the increasing frequency, intensity and complexity of extreme weather events, cascading effects (multi-hazards) and compounding impacts (e.g. COVID) which need to be internalised into country and regional frameworks.

- It is unclear how much collective funding is currently allocated to anticipatory action and a mapping exercise would be highly useful to assist with the case for reallocation of existing climate and emergency finance mechanisms, in addition to the establishment of new mechanisms enabled by legislation.
- It is unclear if regional and intergovernmental groups have specific legislation in place for anticipatory action. Mandates and policies exist to support the release of funds for anticipatory action, e.g. UN CERF RR, WFP, FAO EWEA, Start Network's Anticipatory window. Identification and harmonisation of anticipatory action based budgets and policy would benefit the region. This includes key stakeholders such as ASEAN's AHA Centre, SAARC Disaster Management Centre, OCHA Regional Office for Asia and the Pacific (ROAP), IFRC APRO.

What regional and cross-country tools can help to better document FbF learnings and best practices? What tools and evidence is needed to advocate and make the case for scaling up, increased finance, flexibility and increased coordination?

There are a number of useful tools already operating in the region, some of these are country-specific and others are shared across countries, however what is missing is a coordinated information management system which captures and shares these tools and their results, in a collective manner.

ASEAN AHA Centre is best placed to lead and develop a regionally coordinated initiative under one of its current core function areas of Knowledge Management. This role could be captured in the AADMER 2021-2026 plan.

Capturing best practice:

- ASEAN AHA Centre's Knowledge Management function could develop a FbF interactive hub housing and providing links to regional tools. Updates could be provided through the Dialogue Platforms annually, in addition to the FbF TWG, RCCC and IFRC on a more regular basis
- Dedicated FbF champions from high-level Government positions to capture, share and advocate FbF progress
- Regional Dialogue Platforms sharing and documenting Asia-Pacific best practice through the IFRC APRO and RCCC
- Climate Red conferences international practice and innovations
- Repository of EAs and EAPs: draft e.g. Indonesia, Vietnam, Philippines (floods); approved EAPs: India, Mongolia, Philippines (typhoons), Bangladesh, through IFRC APRO and RCCC
- MOU examples or templates related to the NS and key stakeholders including: Government, NHMS, FAO, WFP
- Advocacy curriculum to apply with Government and NHMS to build trust and gain buy-in
- FbF Frequently Asked Questions (FAQs) posed by NS thee could be gathered at the Dialogue Platforms and updated annually

• FbF and EWEA Practice Guide - NSs have requested a guide on existing good and failed practices on FbF implementation. This would include case studies and lessons learned. NSs should be consulted on specific content needs and case studies.

Linking tools and results:

- GRC FbF Manual
- ASEAN AHA Centre Information Management Network (AIM Net)
- ASEAN AHA Centre Disaster Monitoring and Response System (DMRS)
- ASEAN AHA Centre National Disaster Preparedness Baseline Assessment (NDPBA) multi-hazard risk profile e.g. Vietnam, Philippines and Indonesia
- Sentinel Asia platform collaboration with ASEAN AHA Centre
- NASA satellite and forecasting support e.g. Mongolia
- UNICEF Social Management Information System (SMIC) building beneficiary data and SRSP-FbF links e.g. Myanmar
- WB SEADRIF risk transfer initiative e.g. Philippines (Myanmar planned in the future)
- EU ECHO SRSP initiative e.g. Nepal, Myanmar and Philippines
- WFP/FAO Regional Integrated Multi-Hazard Early Warning System (RIMES) e.g. Nepal and Bangladesh
- WFP Platform for Real-time Impact and Situation Monitoring (PRISM) e.g. Mongolia
- Asia Regional Resilience to a Changing Climate (ARRCC) EWS collaboration e.g. Nepal
- European Commission and European Centre for Medium-Range Weather Forecasts (ECMWF), Global Flood Awareness System (GloFAS) e.g. Nepal (mixed results) and Bangladesh
- 510 Impact-based Forecasting model e.g. Philippines
- InaSAFE mapping e.g. Indonesia
- Financial streamlining e.g. Post Office and bKash Bangladesh.

Evidence for scaling up:

- AADMER 2021-2026 plans
- Position paper on alignment of anticipatory actions and FbF with climate adaptation, DRR and resilience i.e. NAPs, NDCs, Paris Agreement and Sendai Framework, as well as the SDGs
- FbF Capacity needs assessment results: NS, national Government, NHMS
- Funding gap for anticipatory action / FbF funds country level and regional assessment
- Private-public sector partnership case study models e.g. Kartoza, Google, bKash, development banks, GCF
- Performance based results systems e.g. ROI studies, CBA studies, pre and post impact studies, monetization of L&D
- Results of cash transfer EAs and relationship to SRSP

- Best practice approaches including existing and applied national EA policy, prepositioned financial regulations, official partnerships, benefits of a decentralised system
- Published results from EAP simulations
- Risk mapping examples thresholds, triggers, EAs and refinements
- Transferable kits e.g. Shelter strengthening kits, Livestock care kits, Household anticipatory kits
- Published case studies on joint initiatives in multiple countries
- Published case studies and videos with beneficiary stories / testimonials
- Published feasibility, scoping and pilots studies
- Aggregated and downscaled data sets
- Probabilistic forecast tools and products for single and multi-hazard events
- Hazard scenario models multi-hazard with cascading effects, transboundary /multi-country and cost implications of no regret EA versus limited or no action
- Socio-economic and urban development information capture and mapping
- Non-climate hazards and cascading effects e.g. earthquakes and tsunamis, volcanic ash
- Regional stakeholder map to demonstrate need for coordination and opportunities
- National TWG/HCT effectiveness.

Alternative models - is there another way forward, or a complementary way, given the global future scenarios, particularly at regional level?

The FbF model as it currently stands in Asia-Pacific is in various forms of implementation in each country, there is no demonstration of a single consistent pathway towards FbF institutionalisation.

Direct delivery models can create tension with some Governments and key partners, while others are receptive to the humanitarian sector filling on-the-ground gaps. There is no doubt that the current FbF mechanisms in Asia-Pacific are necessary and are saving lives and livelihoods. The increasing use of scientifically informed forecasts and hazard and context specific EAs has shown to be highly effective where evidence exists. However the current approach is questionable regarding long term sustainability options for countries and the region as a whole given future global scenarios. Governments need to be supported to do their jobs and the humanitarian sector, while essential, will need to be more strategic about how and where support is given and what exit strategies may be in place when it comes to Government accountability for FbF programming.

This is a long journey however. Although FbF has gained a significant amount of traction in just five years, especially the last one to two, there is a long way to go. There are some considerations for complementing the current FbF approach in the region.

1. Alignment with a wider continuum: climate adaptation, DRR and resilience



Figure 1: Climate continuum and FbF spectrum

FbF as a concept seeks to move communities, Governments, countries and regions, from a state of responding to a disaster, to one of anticipating the disaster through scientifically informed and tested choices. Along this FbF spectrum from response to anticipation, is a transitional period where testing and evidence gathering and pilot refinement take place before getting to a point where FbF can be scaled, mainstreamed and institutionalised.

FbF is not a standalone concept and integrates well in the climate change continuum and the climate change agenda. This framing is significant for opportunities related to policy, finance, stakeholder engagement and programmatic improvements. That is, if FbF is more firmly embedded in climate change as a continuum, the region likely has more options available to address barriers. This is because policy already exists at an international to local level for climate change, and in many cases for DRR. Attached to these policies are funding arrangements and organisational mandates. Therefore if FbF is embedded in the climate change agenda it is more likely that funding will become more available than if a standalone concept. There is already evidence of this with GCF funding of FbF projects in the Philippines and Nepal. Within this climate continuum also sits food, water and energy security risks which continue to be identified and addressed around the world as part of human life livelihood and ecosystem threats. Such threats undermine national GDP and the targets, in addition to slowing or reversing the development agenda.

Therefore the institutionalisation of FbF can likely be accelerated if embedded within country NDCs, NAPs and DRM plans.

2. Regional FbF Focal Institute

RCCC may be well-positioned to become a FbF Focal Institute for the region While continuing to support countries with technical assistance, the role could be expanded to work with ASEAN and MS to:

- undertake mapping exercises to provide critical information on stakeholders, capacities and FbF finances;
- commit to a FbF roadmap and develop policy favouring an FbF approach over the current post-disaster approach;
- develop financial regulations that allocate pre-positioned finances at all levels of government based upon an agreed trigger;

- $\circ~$ engage the climate finance sector through a 'roundtable' event, to explore PPPs and allocation of climate funds to FbF;
- engage the NHMS and the DMOs on improved forecasting and products from a users' perspective;
- engage with other regional stakeholders e.g. meteorology information and data suppliers, risk facilities
- support FbF Champions and the FbF TWG chaired by FAO, to drive agenda items forward in alignment with AADMER and other needs;
- $\circ~$ collect and share practices, both regionally and internationally, that showcase FbF and present opportunities for Asia-Pacific.

3. Multi-hazard approach - Need versus ease

Despite many countries in the region focusing primarily on one hazard as part of their FbF implementation (excluding Philippines and Bangladesh), all countries encounter multiple hazards and some are experiencing new hazards and cascading effects. Reasons for going down the path of a single hazard focus have typically laid squarely at the feet of forecasting resources and stakeholder capacities, leading to prioritisation of a single hazard. Some joint initiatives have moved forward such as EU Echo and SEADRIF, which provide good models for country partnerships.

In order to meet Government needs and in order for FbF to be more welcomed by Governments, it is beneficial for a multi-hazard and multi-country approach to be adopted. A regional multi-hazard perspective on slow and fast onset hazards will likely improve efficiencies in terms of use of forecast technology and data at an aggregated level to address larger geographic target areas. Lead time may also be improved with regional focus and shared resources.

4. Twinning

Related somewhat to the multi-hazard approach is the idea of twinning. Pairing countries up to accelerate the institutionalisation of FbF. This could include:

- transboundary pairing for the same hazard (e.g. floods for India and Bangladesh), or a cascading hazard (e.g. storm in Nepal leading to floods in Bangladesh);
- shared land-based hazard pairing (e.g. typhoons in the Philippines going on to hit Vietnam sometime following);
- geographic pairing (e.g. isolated island terrain of Philippines and Indonesia requiring strong island Chapters; India and Bangladesh pairing due to size and density of populations);
- conflicts pairing (e.g. Myanmar, Philippines Mindanao);
- early FbF spectrum country (Stage 1) with progressed FbF spectrum country (Stage 4) (e.g. India and Bangladesh, Philippines and Myanmar).

Annex V: Disaggregated interview, analysis and literature results

Profiles of all countries and the region are provided in the following section and provide a breakdown on: summary results from the interviews, top-line analysis and literature results.

Interview results

Summaries are based on a standard template introducing the progress made on FBF institutionalisation. Countries are in order of FbF institutionalisation from Stage 1 to Stage 4. The structure provides for a:

- brief introductory summary based on the interviews and literature provided;
- table of enablers, barriers and pitfalls;
- common enablers and barriers:
 - black text: common enablers and barriers drawn from the 'Aggregated KII results enablers and barriers' table in the Final report.
 - \circ $\,$ blue text: country specific enablers and barriers;
- brief insight into interview takeaways (the submitted Transcript Report provides a full set of questions and answers for each KII);
- self-rating (if provided) to provide an insight into the Red Cross Society's perception of FbF institutionalisation versus the enablers and barriers faced.

Analysis

Top-line analysis from the interviews describing responses to country specific questions put forward by IFRC, including:

- what helped the country implement FbF successfully to date;
- what is needed to help the country move forward to scale up, or to address immediate barriers.

Literature results

Summaries are provided and outline key highlights.
1.1. Indonesia

Stage 1 Set the Scene - Floods

Interview results

The Indonesian Red Cross Society (PMI) acknowledges they are at an initial stage when it comes to FbF institutionalisation and refer to the process as Forecast-based Action (FbA). The PMI conducted a feasibility study in 2018 and committed to FbA mid-2019. Desktop literature shows progress through a number of initiatives including:

- 2017 formation of the National Agency for Disaster Management (Badan Nasional Penanggulangan Bencana, BNPB)
- World Banks' 2019, USD 160 million loan for the Indonesia Disaster Resilience Initiatives Project (IDRIP) with a focus on central and select local government areas and strengthening of geophysical early warning services.
- 'InaSAFE' Kartoza partnership with PMI, the IFRC, Australian Red Cross and British Red Cross to develop FbF Early Action Protocols for floods.

Enablers, Barriers and Pitfalls

Table 4: Indonesia's Enablers, Barriers and Pitfalls

Priority lens	Enabler	Barrier
Capacity	Decentralised volunteer networkDialogue platforms	 Delays due to COVID-19 Geographical reach and logistics Skilled volunteers in pre-disaster: inconsistent competencies island to island
Stakeholder engagement	 Established collaborations with government: BNPB Established collaborations with NHMS: BMKG Kartoza collaboration on InaSAFE Collaboration with others - Australian Red Cross, IFRC, Climate Centre 	 Institutional emphasis on post- disaster response High rates of turnover among government staff
Evidence and data	N/A	N/A
Financing and administrative systems	GFDRR funding support for trigger and mapping development	 Lack of access to finance; barriers to timely disbursement Turnover of staff within PMI and onboarding inefficiency
Forecasting and science	N/A	 Lack of available data sets Inaccuracy of forecasts and early warning systems
Pitfalls	BMKG is not taking initiative to develop forecast information and products, but is relying on PMI and partners of InaSAFE, to take the lead.	

Interview Takeaways

1. Building on the decentralised model is key. Sourcing items locally rather than from Jakarta. Leadership, capacity building and sharing best practice/skills between islands is needed for competency of first responders.

- 2. Key concern is around COVID related delays, in particular how they can progress the Draft EAP sitting with the BNPB. Informal communications have started (through Whatsapp) to keep the communication lines open. An MOU is pending.
- 3. The PMI cannot interpret the forecasts provided by the BMKG or adequately apply these to FbA. The BNPB also use these forecasts for disaster decision making and financial regulation, currently based on post-disaster release of funds.
- 4. BNPB wants to see how PMI applies FbA and if there is a good collaboration between the forecast and actions, BNPB would advocate to the Ministry of Finance to change the regulation for ex-ante financing.
- 5. The PMI wants to support the BNPB and advocate for the national regulation to focus on FbA financing (i.e. ex-ante).
- 6. Still determining whether the collaborations developed so far are successful or not because it is difficult to say at an early stage of the FbF process.
- 7. The PMI responds to single hazards such as floods and multi-hazards such as landslides. Ideally if an adequate FbA mechanism was established, this may transfer to non-climate hazards such as volcanoes and migration / conflict (e.g. Rohingya).
- 8. Self-rating: 3

Analysis

What helped Indonesia begin to institutionalise FbF?

The InaSAFE collaboration providing critical data required for FbA. This collaboration has enabled the PMI to progress exposure mapping and leverage this further to provide insights to the BMKG and the BNPB, which are supportive of a shift to FbA.

Does the integrated trigger development from InaSAFE FbA that integrates BMKG forecast with risk data, mean that the Government sees the value of FbF?

Yes, though applied evidence or advocacy (for alignment in policy) is likely required to see a fuller commitment. The BNPB is positive about InaSAFE and the collaboration leading to hazard and exposure information being used to generate risk thresholds, triggers and EAP for flood. BNPB are yet to see the full value of this collaboration and yet to shift central financial regulations towards FbA and ex-ante financing.

The barriers at hand are mentioned above: massive delays from COVID leading to an inability to progress discussions on the draft EAPs and MOU agreement with the BNPB and the BMKG; lack of leadership from BMKG in developing refined forecasts or supporting the PMI interpret these for use, and some back and forth between the PMI and the BNPB where the desire to see FbA applied is there, however the funding mechanism is not. In addition, these levels of support suffer with staff turnover.

What does Indonesia need to focus on to move forward?

Stakeholder engagement

- BNPB: The PMI need the Draft EAP approved and signed off. A meeting is required amidst the pandemic, this is challenging. External support was not requested by the PMI. However it may be useful to open a dialogue with the PMI and see what assistance can be offered. (Relevant support could come from whomever is best placed to progress the EAP with the Government: Australian Red Cross Society, IFRC APRO, Climate Centre, ASEAN).
- BMKG: A more balanced approach is needed to progress forecasting products. PMI and BMKG to agree expectations and opportunities for improving forecasts to implement FbA ,from a "users perspective". Solutions: a series of dialogues or an MOU to formally codify the collaboration. PMI need to be adequately versed with forecasts to add-value to the BMKG and share what is missing from current products from the user's perspective.

Capacity

- Take-up training support offered by the Climate Centre and Kartoza on the technical aspect of integrating new forecasts and new vulnerability data when available (from InaSAFE-FbA project).
- Forecast interpretation: PMI require training. Solutions: a secondment at the BMKG (similar to Nepal's approach); facilitated discussions with BMKG on user needs and finetuning hazards, exposure and development of risk products; participation in WMO trainings or provision of regional training on forecast interpretation.
- PMI decentralised model: leadership and EAP training is required for frontline responders. Solutions: low capacity PMI sites being paired with higher capacity PMI sites for island to island mentoring; learning from the Philippines model.

Forecasting and Science

- Securing the BNPB agreement will ensure the InaSAFE project continues. Collaboration with Indonesia-Kartoza staff to test build the FbA project and start transitioning to river based floods forecasts.
- Transition to using the Indonesian hydrometeorological "in-house" forecasts into the system, perhaps replacing GloFAS gradually or using both forecasts as other FbF projects in the world are doing (e.g. Bangladesh).

Advocacy/Policy

• Financing FbF: PMI require support in navigating discussions with the BNPB and Ministry of Finance to the shift financing from post disaster to pre-disaster. Solutions: PMI and BNPB agreeing to pilot - moving to Stage 2; ASEAN AHA Centre TWG spearheading this topic as it applied to all countries.

Literature results

The report titled "Towards impact-based forecasting: upgrading InaSAFE and GeoSAFE to enable forecast-based action", by Kartoza, IFRC and the Climate Centre, describes the tools and development of the InaSAFE-FbA project from July 2019 (kick-off meeting) up to May 2020. The use of a global forecast model offered an opportunity to develop a prototype.

The InaSAFE platform has been developed by the BNPB with technical guidance from Kartoza and funding from the Australian Government and GFDRR. Given there are now 30 countries implementing FbF, the InaSAFE (http://InaSAFE.org) project presents lessons learned, particularly for how risk information management platforms can drive IbF (especially for flood hazards) to be used a trigger for FbF.

The report describes how IbF combines a weather or climate forecast of a hydrometeorological hazard with information about people and places at risk, to anticipate sector-specific and context-specific impacts. This allows for a shift from the institutionalised response mindset of "what the weather is" to a new anticipation mindset of "what the weather will do".

Beyond Indonesia the tool InaSAFE is active in: Fiji, countries of the South Pacific, India, Mozambique, Tanzania and Philippines.

Three key questions:

1. Can an existing information management system, such as InaSAFE, that is already used for contingency planning be transformed into an IbF?

Yes. By applying the FbF trigger methodology and principles of Impact based Forecasting, a prototype has been developed, using a global flood forecast (GloFAS) and OpenStreetMap tool that integrates real-time weather forecasts as key datasets in the system.

2. How can an InaSAFE-like platform enable a trustworthy and effective decisionmaking process for early action?

The key for success is in co-production at all the stages of development. Kartoza, Climate Centre and Indonesia Red Cross developed a solid cooperation framework that is crucial for the sustainability of the system. There remain aspects to be addressed to move from a prototype to a fully developed system.

3. Can a GIS-based tool that is used by disaster managers and government planners foster interdisciplinary collaboration? Specifically, can it enable dialogue between the two groups and create an easy way to set triggers for early action?

IbF requires that hydromet services, scientists, risk information management experts and humanitarian actors be at the same table, agree on data,

objectives and processes to coproduce an IbF services. Centring discussions around the transformation of an existing Government-led GIS-based tool is an opportunity to engage a variety of people to provide feedback, ideas and recommendations on the key steps to develop a useful and impactful IbF tool.

A number of data sets at varying levels of refinement, are integrated to optimise the InaSAFE platform.

Data sets include:

- Population data
- OpenStreeMap- buildings, road networks, administrative boundaries
- Hazard models 1: 100 year flood, 1:50 year flood, 1:20 year flood
- GloFAS event data and measuring points
- PostGREST and PG-CRON.

Essentially there are **four components** to the system aligned to the FbF trigger methodology:

- 1. Location
- 2. Magnitude
- 3. Probability
- 4. Timing (when)

Spatial data is represented by diagrams showing the extent of flooding across villages, subdistricts and districts. A web-interface ties in vulnerability data from assigned scoring. Dashboards are produced to show the impacts as an administrative unit level with the trigger status colour coded. The interplay between hazard level and vulnerability level can be viewed and the report can be downloaded as a spreadsheet or offline file.

InaSAFE therefore supports EAs by allowing users such as the PMI to view scientifically evidenced information on hazards and vulnerability linked to triggers at the subadministrative level, to decide where to deploy teams in what timeframe to carry out EAs as part of the EAP. This fast-tracked approach allows for more reliability and quicker access to the FbA by the DRAF and possibly other financial mechanisms.

Lessons learned and barriers to overcome

- 1. The policy environment for data sharing across different departments is still not in place in Indonesia. A broader move towards , it is Open Source policies will enable a closer alignment to IbF and eventually FbF.
- 2. User buy-in was deemed effective due to having a research project (InaSAFE-FbA) aligned with a humanitarian project (FbF). While it is critical for Governments to receive seed funding and project support through humanitarian partnership initiatives to help establish systems for anticipatory action, it is equally critical from a sustainability perspective that such relationships are not

relied upon for the long term. I.e. Government's will need to invest in FbF EAs as part of central government budgeting.

- 3. Stakeholder selection for engagement should be phased according to the needs of the project, with some stakeholders being prioritised at the start of the project (BNPB, BMKG, Ministry of Public Work, one Provincial DM Agency and OpenStreetMap community), compared to others at later or future stages of the project (Ministries Social Affairs, Environment, and Home Affairs).
- 4. Obtaining institutional data is a time consuming process in many communities. There are no real short cuts to this beyond digitalisation of data and creative clustering where appropriate (e.g. "good, better. Best" approach used in the project).
- 5. Setting realistic expectations and backup use of open source data is crucial to delivering project outcomes.
- 6. Although flood forecasting is a critical hazard, there is still a lot of flood modelling that needs to be developed to include reliable forecasts into InaSAFE-FbA.
- 7. By using OpenstreetMap and GloFAS data, it is possible to apply the InaSAFE-FbA system to other countries that are faced with data scarcity.

Next steps

1.2. India

Stage 1 Set the Scene: Floods

Interview results

The Indian Red Cross Society (IRCS) acknowledges they are at an initial stage when it comes to FbF institutionalisation and confirms it has not developed a feasibility study. The IRCS finalised a FbF EAP for floods to support 5,000 households, for the Assam State in February 2020. The key driver of this was the need for a timely response, in particular for evacuation to safety. Prior to this the IRSC and the IFRC implemented DREFs in 2012, 2014, 2015, 2016, 2017 and 2019 (post-flood relief). It was recognised that people's continuous exposure to risk, had reduced coping capacities and increased their vulnerability over the years.

A forecasting system exists with basic capacities between the Indian Meteorological Department (IMD) and the Central Water Commission (CWC). Key roles and responsibilities have been assigned in the EAP for: IRCS Assam State Branch, IFRC, Assam Disaster Management Authority (ASDMA), Assam State Government, Red Cross Volunteers, IMD and the CWC. The EAP includes eight Early Actions.

Enablers, Barriers and Pitfalls

Table 5: India's Enablers, Barriers and Pitfalls

Priority lens	Enabler	Barrier
Capacity	• Sharing of FbF studies: Bangladesh's model to flood and cyclone management copied for EAP	 Lack of understanding of the FbF concept Geographical reach and logistics Skilled volunteers in pre-disaster: knowledge of DRR not FbF
Stakeholder engagement	 Established collaborations with government: <i>ASDMA</i> Established collaborations with MET agency: <i>IMD and CWC MOUs</i> <i>planned</i> Google collaboration - India Early Warning Early Alert Project Collaboration with others - Kuala Lumpur Technical Office, IFRC 	 Reputational risk of failed implementation Lack of collaboration with government: how to use auxiliary role Institutional emphasis on post- disaster response Literacy and mobile penetration rates, especially for last mile connectivity
Evidence and data	N/A	N/A
Financing and administrative systems	 Government financing of IMD for improved cyclone data led to positive changes in general forecasting 	 Lack of access to finance; barriers to timely disbursement: <i>clash with SRSP</i> Lack of human resources: <i>skilled experts especially for adaptation EAP</i> Knowledge of FbF financing
Forecasting and science	 IMD data is open source and available 	 Lack of technical capacity for developing triggers

Interview Takeaways

- The traditional approach to disasters for the previous eight years had been reactive leaving increasing numbers of people vulnerable. A new more timely approach was needed to evacuate early and build resilience. Neighbouring Bangladesh Red Cross Society (transboundary shared water resources) provided inspiration in their effective approach of floods and cyclones. This model was adopted for the establishment of the EAP.
- 2. Government had invest financially in the IMD's capacity for cyclone management, the CWC and integrated DRR through District level Disaster Risk Management Plans. Although this focused on relief, it provided some capacities, resources and understanding for the need for FbF.
- 3. Google partnership started in June 2020 for the India Early Warning Early Alert Project, a long-term partnership starting with-funding email alerts. Will prioritise last mile connectivity to use existing social media platforms to reach people and collect disaggregated data. Mobile penetration is low in rural areas combined with low literacy levels. There's a distrust of information sources separate from local leaders. IRCS conveys information to volunteers shared with community leaders.
- 4. Operationally and administratively, FbF is seen as another project to embed within each State's Disaster Management Unit.
- 5. IRSC is effective at mobilizing people. However timely response is an issue, information is provided too late. IRCS needs to understand the FbF approach, how this is different to the relief model of delivering NFIs, shelter etc.
- 6. FbF has not been applied before and there is a need to train on financial management, how to administer this while not compromising Government relationships and current SRSP systems.
- 7. Soon to have kick-off meeting with technical agencies IMD and CWC, and sign MOUs for improved hydro modelling and forecast products respectively. IMD provide open source data on floods, heatwaves, coldwaves, cyclones and agromet data. CWC talks involve data provision for forecasts and communications, e.g. IRCS volunteers are on CWC mailing list.
- 8. Hiring a hydrologist in Q3 2020 with IFRC APRO's support to develop triggers.
- 9. Need publicity and success stories from FbF for people to make their own decisions. Need skilled people to develop EAPs for adaptation. Need to simplify the EAP process. India can learn from Bangladesh on floods and cyclones here.

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10. Self rating: 5
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Analysis

What helped India begin to institutionalise FbF?

Fundamentally India learned from Bangladesh's success in FbF and the fact they are dealing with the same hazard (flood), has cemented IRCS's decision to start the FbF journey. Effective collaborations with ASDMA, IMD and the CWC have enabled thinking about a change to traditional relief efforts. Partnering with Google and receiving funding for flood alert emails has been beneficial, longer term this partnership is significant.

What was IRCS' motivation to establish the EAP independently? Did they see FbF as an advantage to a slow response system?

Yes. Years of post-disaster response has led to increased vulnerability - predominantly due to a slow response. Timely evacuation and conditional cash for basic needs will see less damage to people's homes, reduce the need for people to sell their belongings and result in less health hazards like malaria outbreaks. FbF will increase local resilience. IRSC wants to move from giving people 2,500 rupees or tarpaulin support to making them more resilient. If people know the program is successful, they will respond.

IRCS is also preparing an imminent DREF for the monsoon season - how does IRCS see the complementarity of FbA by the DREF, imminent DREF, and DREF?

Unsure of the complementarity as have always relied on the traditional relief model and been very successful at activating the DREF. Unsure how different the process is for FbA by the DREF. For the monsoon, a technical discussion was held with Kuala Lumpur team, nothing planned in detail. There are two imminent DREFs, one for cyclone, one for floods in Assam, Bihar and Andhra Pradesh.

What does Indonesia need to focus on to move forward?

The Government makes all decisions - IRCS's role is to develop the triggers and this is where support is needed. Pressure is felt by the IRCS to get these right from a reputational standpoint.

Capacity

• Hydrologist hired in Q3 2020 to assist with trigger development.

Stakeholder engagement

- MOUs signed with IMD and CWC.
- Technical working group meetings IRCS, IMD and CWC to identify the trigger thresholds
- Implementation meetings IRCS and IFRC APRO to evaluate triggers thresholds

Financing and administration

- IRCS has the capacity to advance funds for the short duration between trigger and funds from FbF window arriving.
- The State Branch will identify and train volunteers on EAP procedures and the scope of work. Transport and logistics will be pre-arranged and contracts agreed, a pre-monsoon meeting will be organized to sensitize state bank managing committee on the scope of the EAP and to discuss logistics, procurement, administration, finances, human resources, disaster management, etc.
- IRCS will modernize to become more responsive and accountable, and will govern and regulate responsibly; they will build up their own self-reliance and also demonstrate international humanitarian solidarity

Forecasting and science

- 15 day and one week forecast will be used as part of the EAP. IRCS, IMD and CWC jointly review the trigger thresholds and activation in terms of lead time, accuracy and feasibility. The threshold level will be pre-decided based on historical data and parameters of water discharge, water level, duration and flood depth. The methodology committee will be led by IRCS along with representation from IMD and CWC. This evaluation process will decide when the hazard can be declared as an extreme event. Accordingly, impact level will be different for Panchayats³.
- IRCS and IFRC will jointly evaluate the trigger's thresholds and accuracy from an implementation point of view.

Literature results

Limited amount of information provided - a short presentation and one document. Based on these the following, below points have been collected:

FbF has been implemented in the state of Assam in response to frequent flooding events. The Indian Red Cross Society and the IFRC have implemented DREFs in 2012, 2014, 2015, 2016, 2017 and 2019 (post-flood relief). Due to continuous exposure to risk, people's coping capacities have been reduced and their vulnerability has increased over the years. Thus, the IRCS aims to increase community resilience to floods by increasing awareness on impact based early warning, collaboration with local Panchayats and communities, prepositioning humanitarian assistance and mobilising locals.

Early Actions Proposed

- 1. Early Warning message dissemination (WhatsApp/Social media)
- 2. Evacuation/Transportation of Flood affected people and livestock to temporary Flood Shelters
- 3. Conditional Cash Distribution based on a threshold level
- 4. Distribution of tarpaulins

³ Panchayats are the legally recognised local self-government of villages in rural India.

- 5. First Aid Services
- 6. Water Sanitation and Hygiene support
- 7. Distribution of Mosquito nets
- 8. Collaboration with District Administration/ Line Department for preparatory action and early warning

Barriers

Not barriers as such, as this is looking at the early implementation of the project.

Currently a lack of timely information has been identified as a major issue - this would be addressed through the trigger mechanism and overall EAP which would allow timely evacuations to safer places.

Financing and Administrative Systems

Post-disaster response has been funded by DREF, although many events are managed by internal resources. Most of the operations have been managed successfully and timely with a transparent and accountable manner.

Forecasting Skills

A forecasting system already exists with basic capacities between the Indian Meteorological Department and the Central Water Commission. This would deliver a 15 day and one week forecast to communities and be used as part of the EAP. The activation will be decided based on available information from IMD and CWC forecasting. An evaluation will consider the type of forecasting, content and source of system and the lead time of the forecast. After evaluation of the forecasting system, the trigger evaluation will be selected.

The threshold level will be pre-decided based on historical data and parameters of water discharge, water level, duration and flood depth. This evaluation process will decide when the hazard can be declared as an extreme event. Impact level for the different.

This EAP will cover the entire state of Assam as the Brahmaputra river system affects more than 12 districts at any given point during a flood season. Above introduction highlights the need to FbF.

EAP will directly support 5,000 households, focusing on those who are most vulnerable - this will be decided by the State Branch in collaboration with State Disaster Management Authority linked to the impact level- flood levels, humanitarian impact, and potential early actions. The proposed early actions- evacuation by the trained Red Cross volunteers and conditional cash for basic needs will address timely evacuation and saving lives and livestock, basic needs will be covered from the conditional cash grants. Those evacuated will be provided with mosquito nets tarpaulins to protect their family from health hazards

Only link made to DREF was the following; the IRCS has the experience of managing DREF for floods and cyclones. The budget has been developed based on the experience from several field level operation and by humanitarian experts in the field. The amount of cash for each household has been decided based on the food basket cost in the local context considering supplementary sources, Tarpaulins and Mosquito nets are according to the Red Cross standard.

Defined tasks of key actors in the EAP

IRCS Assam State Branch: Assam state Red Cross Branch will be supported to preposition the stock which will immediately be made available to affected community. State branch carries out Training of Red Cross volunteers and shall coordinate with Assam State Disaster Management Authority and will support in evacuation.

IFRC- The IFRC will provide technical and financial support to ensure that there is an operational financial mechanism to enable the IRCS to access the funds within 6 to 12 hours of the activation of the EAP. IFRC will provide technical assistance and support in the areas of strategic relationships, early warning/early action, monitoring and evaluation, and financial accountability.

ASDMA - ASDMA is headed by state chief minister. ASDMA is a government agency which is the first responder to any kind of disaster in Assam and a legal coordinator of humanitarian assistance and intervention. IRCS, Assam State branch and ASDMA have been working closely in the fields of disaster risk reduction, response activities. ASDMA will update IRCS state branch with information from government-led assessment and also supports IRCS to distribute the items to affected population.

Assam State Government: Assam state government will provide the list of households living below the poverty line.

Red Cross Volunteers - Red Cross Volunteers are to implement the project on the ground according to the protocol under guidance from IRCS. The roles of Red Cross Volunteers include beneficiary data collection, validation, evacuation, distribution of cash, awareness education, WASH kit and relief distribution.

IMD- IMD will provide data of 15 days rainfall in advance for the area through regional Met department at Guwahati city.

CWC - CWC will provide deterministic flood forecast 72 hours in advance, including water level data

1.3. Myanmar Stage 1 Set the Scene: Floods and Cyclones

Interview results

The Myanmar Red Cross Society (MRCS) acknowledges they are at an early stage when it comes to FbF institutionalisation. A FbF Feasibility study and a joint Scoping study were undertaken to analyse if the minimum requirements for a potential FbF project would be met (October 2019) and to gain insights into the country context and the feasibility of implementing an FbF/EWEA project (February 2020). Riverine flooding was identified as the most feasible hazard to focus on given the widespread damage and existing monitoring system.

Floods were also raised as a local priority from Village Administrations (VA) who currently use informal EWS as Department of Meteorology and Hydrology (DMH) information arrives too late. Scaling-up to focus on cyclones and droughts has been recommended. MRCS is already now focused on cyclones and interacts with the IMD which provides cyclone tracking and forecasts. Heatwaves are acknowledged as challenging to manage due to misinformation and changing temperatures and being less of a priority for VAs.

MRCS has made good progress on stakeholder engagement with: the Finnish Red Cross Society, GRC, ECHO, World Bank's South-East Asia Disaster Risk Insurance Facility (SEADRIF), UNICEF's Social Management Information System (SMIC), FAO, WFP, the National Disaster Management Committee (NDMC), the DMH, Ministry of Agriculture, Ministry of Home Affairs (General Administration Department - GAD) and the Ministry of Relief and Resettlement. The later has recently produced the App "MUDRA" -Myanmar Unified Platform for Disaster Application.

An EAP (referred to as SOP by MRCS) is being developed with 4 Early Actions proposed for floods and cyclones. Cash transfers were considered but seen as too challenging to manage.

Enablers, Barriers and Pitfalls

Table 6: Myanmar's Enablers, Barriers and Pitfalls

Priority lens	Enabler	Barrier
Capacity	 Decentralised volunteer network: able to rapidly message community - 1-hour Indigenous knowledge supports informal EWS with river flooding downstream Radio, WhatsApp, Viber platforms used to reach people 	 Lack of understanding of the FbF concept: <i>relationship to DRR</i> Skilled volunteers in pre-disaster: <i>inconsistent competencies</i> Lack of technical capacity; for developing EAPs Community gaps at local, township, district levels
Stakeholder engagement	• Established collaborations with government: NDMC, Ministry of Agriculture, Ministry of Relief	 Lack of collaboration with government: <i>how to use auxiliary</i> <i>role</i> High rates of turnover among government staff

	 and Settlement, Ministry of Home Affairs Established collaborations with MET agency: DHM Collaboration with IFRC, Climate Centre, FAO, WFP, UNICEF 	• Shifting political environment: election cycles, conflict
Evidence and data	• Running FbF studies: Feasibility and Scoping	Too much information in the feasibility study to easily develop EAP
Financing and administrative systems	 The LIFT Fund is accessed for shelter renovations Pre-disaster agreements with the Danish and German Red Cross Societies Strategic Plan 2021-2025 with improved FbF 	 Lack of human resources Lack of available data sets: census data 2014, no urban development data
Forecasting and science	 Developed understanding and communication of forecasts Detailed data on vulnerable areas through MUDRA 	 Inaccuracy of forecasts and early warning systems: insufficient resolution; data not localised enough; cyclone track changes Lack of technical capacity for developing triggers: agricultural-related Lack of skill for interpreting forecasts: VA cannot understand DMH alerts Short lead times for hazards: (<48 hrs) floods downstream Limited monitoring systems for floods (1 national met agency issues alerts); drought (1); heatwaves (0)
Pitfalls	Cyclones and floods are focused on as key multi-hazards and multi-country events, especially due to existing resources (regional and national monitoring). Droughts and heatwaves are lesser known and invested in, so deprioritized, but need to be addressed.	

Interview takeaways

- 1. The NDMC has awareness of disaster policy at the national and regional levels, however this becomes weak at the district and township, and to some extent local levels, due to lack of human resources. The NDMC has district offices but no township offices (the literature shows that the GAD does). MRCS tries to fill this gap.
- 2. The Government has a National Emergency Operations Centre with levels 1 to 4 for floods and cyclones. The MRCS's Operations centre is linked to this.
- 3. MRCS has a Disaster Contingency Plan, an EWS and EAP (in development alert, notification and trigger). However MRCS is trying to improve the proposed EAP.

- 4. The Government in Myanmar has a particularly poor handover with staff turnovers. This results in inefficiencies and delays for the MRCS who need to start the same conversations. Elections every five years exacerbate this.
- 5. DMH release weather information directly to the agricultural ministry, disaster ministry and MRCS. In monsoon this may be six times each day with forecasts of 72, 48 and 24 hours. MRCS informs communities of increased water levels and by how much, to provide early warning. The Government is applying FbA and using historical data before the monsoon to renovate shelters. The Government supports five regions (up from two regions in 2018) exposed to annual strong winds.
- 6. MUDRA operates in Southern Myanmar and the hope is to cover the entire country including conflict and urban zones. Population data (current census 2014 is out of date) and urban development data is needed. This is a step towards SEADRIF.
- 7. Ministry of Agriculture relationship is important. However MRCS lack technical ability in agricultural knowledge, this is a challenge. Often communities are already affected and MRCS reports this to the Government, who then try and work with the community. There is a gap in timely and localised information and MRCS needs to more closely align with FAO and the agricultural sector. Short crops for early harvesting is one strategy to cope with the changes.
- 8. With good river monitoring stations it is easier to work with riverine flooding as a hazard. Heatwaves and droughts are also important, but problematic with a lack of monitoring equipment and expertise. This is a challenge as monsoon rains are reduced and droughts are increasing, especially in the south.
- 9. MRCS may be better placed to focus on floods and droughts and leave cyclones largely to the national government who have resources to manage cyclones. Urban areas need to be better equipped to manage heatwaves and droughts exacerbated by development. Funding and technical support is required for this focus as well as research into climate change links and urban development.
- 10. In terms of resources the AHA Centre provides good technical support, works with the NDMC and provides funding for disasters to national government.
- 11. Self-rating: 5-6, "up and down depending, most consistently a 6".

Analysis

What helped Myanmar to begin to institutionalise FbF?

It is challenging to explicitly state what MRCS's key determinant for success is from the data. It is likely a combination of the volunteer network and facilitation of alerts to VAs and feedback to the NDMC on the on-the-ground status during flood events; in addition to the feasibility studies.

Given the joint interest, what are MRCS' next steps internally (capacity building, trainings?) and externally (joint EA and triggers? TWG? Advocacy?)

Externally a TWG with an agricultural focus (MRCS, FAO, the Rural Development Centre and DHM) would be valuable next step. A consultative group could support development of more strategies given the knowledge gap on agriculture related risks and actions within the MRCS. Short growing crops and early harvesting are just two resilient strategies in the proposed EAP.

The alert (Levels 1 to 4 for floods and cyclones), notification and trigger have been developed. The National Emergency Operations Centre is one facility for FbF. Working with MUDRA is also valuable in terms of data collection for population and urban development.

Internally, any FbF system needs to invest into MRCS' human resource capacity, to help train volunteers and create ownership of FbA from the HQ to the branch level. Particularly at the branch level, MRCS is hampered by a lack of staff with the necessary technical capacities for disaster management. Without investing in additional staff to help organize, train, test, and manage FbF pilots, MRCS' current DM department will be overburdened managing FbF on top of their regular workload. Although the triggers exists, the communities are not aware of it.

Do the studies enable MRCS to take steps towards institutionalisation early on?

Yes. MRCS is trying to improve the EAP though recognises a human resource capacity gap as holding it back. MRCS recognises gaps at specific levels of government which need to be bridged to ensure institutionalisation (i.e. district and town levels in particular).

In the long term, is FbF a step towards SEADRIF?

MRCS appears hesitant to join SEADRIF immediately and has stressed the need to fully develop the EAP based on the feasibility studies and recommendations. More technical support is required, followed by additional human resources at the MRCS.

What does Myanmar need to move forward?

Capacity

- MRCS can take the EAP development forward with technical assistance, especially for anticipatory actions related to agricultural sector. A dialogue with the IFRC APRO could facilitate next steps and timelines.
- MRCS requires additional human resources to focus on FbF outside of its other duties in order to progress institutionalisation. This would be best suited in the form of additional personnel to HQ, as well as advancing EA competencies of volunteers in target areas for riverine floods in particular.

Stakeholder engagement

- Facilitated dialogue on how to fill gaps at the district and township levels (from the literature this could be with GAD given they plays a key role in EWS and DRR by chairing Township Disaster Management Committees).
- Establishment of a TWG, regular meetings and action based outcomes. This might include: MRCS, FAO, the Rural Development Centre, agricultural extensions, NDMC, DMH and UNICEF. The TWG will place priority on the development of trigger thresholds to activate the EAP.
- Keep communications open with SEADRIF and the Philippines to examine how the case study develops and learn lessons for joining the program in the future.

Financing and administration

• Continue working with MUDRA to fill data gaps to inform trigger thresholds and EAP - this will help with Stage 2 testing.

Evidence and data

- Run EAP pilots where appropriate with the help of Finnish and German Red Cross pre-disaster agreements.
- Document pre and post impact results for advocacy.

Forecasting and science:

• Determine with TWG when and how droughts and heatwaves can be integrated into a multi-hazard.

Advocacy

• Use successful FbF case studies to appeal to the NDMC to adopt exante funding and to alleviate VAs of post-disaster expenditure.

Literature results

The implementation of FbF in Myanmar is in the early stages; thus the two papers discuss which natural disasters are most feasible for implementing FbF EAP. The reports assessed riverine floods, flash floods, heat waves, cyclones, strong winds, earthquakes, tsunamis and droughts. Riverine flooding was identified as the most feasible however, it is recommended that this is eventually scaled up to cyclones and droughts.

Early Actions Proposed (flooding)

- 1. Help secure homes from thieves by distributing locks in order to encourage people to evacuate.
- 2. Fortify homes or evacuation centres to reduce the damage caused.
- 3. Early harvesting for rice in rural areas.

4. For heat waves and floods, a potential early action could be to provide factory employers and vulnerable street workers with information about protecting themselves / their employees.

The feasibility of implementing a Cash Transfer Programming was also considered however, at the moment numerous barriers exist limiting the implementation of this (see below).

Barriers

Major issues with attempting to implement FbF are identified;

- Work to change response-oriented mindsets - Currently, Myanmar Government officials (from local authorities to the national level) and MRCS branches have a strong focus on response or preparedness for response with little attention to early actions as an effective way to reduce disaster impacts - *This was also mentioned in the Bangladesh literature and India interview*.

- MRCS and Township Disaster Management Committees that were spoken to (for one of the studies) didn't know what to do with additional financial resources if they were to be available for early actions. This is due to a lack of understanding on FbF and PNS (Partner National Societies) should make a case that resources from external donors be made available for some trainings on early action, at both national and decentralised levels. Even within communities, there is a culture that acting in advance of a disaster may fate the disaster to arrive, which can be an impediment to immediate preparation for a hazard.

- Take a tailored approach for early action in conflict-related settings - In areas where Ethnic Armed Organisations (EAOs) operate, there are additional challenges around disseminating early warnings. According to an interviewee working on Disaster Risk Reduction (DRR) and early warning projects in conflict-affected areas, the line of communication between Township Administrators and conflict-affected villages is often broken. It can take a lot of advocacy with the Government and EAOs to create two-way communication between these villages and Township authorities. As a result, people living in conflict-affected areas may not receive early warnings at all. FbF would be particularly challenging in these areas. In some areas, such as Rakhine state, some people do not have freedom of movement and would be limited in their ability to evacuate or act early. Any FbF project in Myanmar that intends to reach people affected by conflict should have a separate pilot for conflict-affected areas, with a different approach and different modalities. The precise design should be based on what is appropriate and feasible in that context. Some UN partners in the ECHO project work in these conflict affected areas, and this may be an opportunity to work alongside them to deliver early action in these contexts.

- The capacity of branches differs widely, but there is **not an integrated volunteer management system for tracking where capabilities lie** so that well-equipped branches can be systematically deployed to support weaker branches in times of crisis and **strategic investments into branch capacity can be made in flood prone areas**. Any FbF system that would aim to reach wide areas should consider investing into this kind of volunteer management capabilities to ensure that the right volunteers can be deployed to affected areas rapidly if needed.

- Decentralise finance wherever possible - At the local level, there are no resources available for early action. Village authorities often support their constituents out of their own resources in spite of their low salaries. To enable rapid action, finance should be decentralised to the lowest level possible; at minimum, the state and region level, and if possible, to the district or township level. Myanmar's Emergency Management Fund is being decentralised to five states and regions, which will have access to about 20,000 USD each; these could be test regions for FbF.

- Within MRCS, existing hazard SOPs are not well-understood outside of DM department. Furthermore, roles and responsibilities are not disseminated at lower levels of MRCS operations (State/Region, District, or Branch.

Forecasting Skills

Early warnings for floods are the most well developed in Myanmar and were frequently mentioned in township to national-level interviews. Despite the widespread dissemination, warnings for the major hazards are **not always well understood and may not be fit for purpose for Village Administrators** who must use the information to evacuate constituents. The warnings are not place-based, do not overlay local vulnerability or exposure data, and do not suggest early actions. EOC officials felt that the information they were providing did not have sufficient resolution or location- specificity to be helpful for local Governments and wanted to improve this

- Any Forecast-based financing system should be focused on **investing into MRCS' human resource capacity**, to help train volunteers and create ownership of forecastbased action from the HQ to the branch level. Particularly at the branch level, MRCS is hampered by a lack of staff with the necessary technical capacities for disaster management. Without investing in additional staff to help organize, train, test, and manage FbF pilots, MRCS' current DM department will be overburdened managing FbF on top of their regular workload.

- Work closely with the General Administration Department - Based on interviews at the township and national level, it became clear that mobilizing actions rapidly enough based on a forecast will require support from the General Administration Department (GAD). GAD is under the Ministry of Home Affairs and serves as the bureaucratic "spine" of Myanmar's vertical sub-national government structure. It heads township administration, providing support down to the village level. GAD plays a key role in EWS and DRR, by chairing Township Disaster Management Committee. The authorities we spoke with at GAD at the township level were instrumental in disseminating warnings and to coordinating with Village Administrators. Including GAD authorities in workshops, advocacy, and training is important for the success of FbF in Myanmar.

- Build on informal early warning systems - The hazard information that filters down from Department of Meteorology and Hydrology (DMH) to townships is scientific. At the local level, this information is not easy to demystify and to predict potential impacts. In the townships we visited in Bago, Village Administrators (V.A.) have developed their own early warning systems for floods, with upstream V.A. calling downstream V.A.s and reporting the water level in their villages. This information is familiar to V.A.s, and they are able to interpret it to know when flood waters will arrive in their village and how high they are likely to reach. In townships where Village Administrators insist that early warnings from the national level arrive too late for action, consider using informal early warning systems to direct early actions.

- Forecasts are available for the major hazards but would need to be augmented for impact-based forecasting.

- Interest and willingness from UN partners to collaborate on FbF projects under new ECHO initiative.

1.4. Nepal

Stage 2 Test FbF: Floods

Interview results

Nepal RC has been testing Emergency Forecast-based Action (EFbA) since 2018, first conducting a pilot phase and then a feasibility study in six municipalities. They work closely with the Danish RC (DRC) to test FbF and related DRR and SRSP initiatives. Nepal RC has not yet triggered its FbF, but it is piloting anticipatory action for riverine flooding. Now they are working with ECHO on a new pilot project surrounding SRSP. They have not yet been able to access the DREF.

Nepal WFP has been working on FbF since 2016, also focused on flooding, which makes use of vulnerability assessment mapping. In 2020 they sent out anticipatory kits to households in two districts. They set up a technical working group (TWG) with other humanitarian partners.

Enablers, Barriers and Pitfalls

Table 7: Nepal's Enablers, Barriers and Pitfalls

Priority lens	Enabler	Barrier
Capacity	 RC providing secondments to government as Information Management Officers German Red Cross FbF Manual has been helpful Making use of the dialogue platforms to learn from other partners 	 A lack of capacity resulted in an inability to expand FbF testing, despite a keen interest The entrenched mindset amongst humanitarian stakeholders is to respond to, rather than anticipate hazards. Unable to access the DREF at present, delays due to COVID-19 Having enough people on the ground to collect data
Stakeholder engagement	 Collaboration with the Danish Red Cross WFP has an MOU with the Met agency and strong partnerships with the government 	 RC and WFP lack a common approach to FbF, despite both working on it separately Despite secondments by RCRC to the government, the government has not provided its own funding for these positions Lack of transfer of national-level advice to local areas
Evidence and data	 Feasibility study providing evidence for the before and after of the pilot Climate centre support for interpreting and simplifying forecasts 	N/A
Financing and administrative systems	 Funding support from Danish RC to implement Early Action: Innovation fund provided by Denmark GCF funding approved for climate resilience, partnership - the Government-FAO 	 No cash guidelines or release of funds guidelines at a Local level - this needs to be implemented

Forecasting and science	 Met agency provides forecasts for FbF Contributing data to the Met agency WFP has a dedicated vulnerability mapping team which undertakes risk assessment for flooding in 11 districts 	 Confusing and inaccurate forecasts from the Met agency Hazard assessments can be old and the river changes course, leading to a non-static baseline Have used GloFAS system but find it unpredictable with large fluctuations
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Interview Takeaways

- 1. Partnership and capacity support are vital to progressing on FbF testing. This includes having an FbF focal point and supporting the translation of forecasts for non-scientific audiences.
- 2. Capacity of the RC, the Met office, and the government are major barriers to the scale-up of FbF.
- 3. WFP's vulnerability mapping could be more widely adopted by RC and other humanitarian actors/government
- 4. The ECHO project for FbF and SRSP represents the next step in testing FbF in Nepal.
- 5. Self-rating: 3 for Nepal RC; 5 for WFP Nepal

Analysis

What helped Nepal to begin to institutionalise FbF?

Support from Danish Red Cross to undertake a Feasibility study, following completion a small-scale pilot on EA for floods, provided enough evidence to engage and mobilise the community on AA. This allowed funds to be reallocated strictly to floods.

Nepal RC:

Pilot and Feasibility study?

NPRC did a small-scale pilot first and after 6 months a feasibility study for floods. Support for flood trigger development is ongoing via 510.

What are the learnings from the evolution of the project setup? Different elements were tested at different times.

Various findings are listed in the above table of enablers and barriers.

The need for buy-in at the municipal level, and the need for an FbF focal person, to advocate and convince stakeholders that the early action approach is necessary and worthwhile.

Nepal WFP:

Can the risk mapping products developed by WFP be integrated into the FbF approach?

Does WFP link with the trigger developed by the RC?

Yes, from the interviews it appears WFP and NRC would benefit from sharing of resources, capacity, and approach. Particularly, NRC could benefit from access to the WFP vulnerability mapping.

What does Nepal need to move forward?

- Implement FbF for additional hazards, such as flash floods, landslides, and heatwaves.
- Sharing lessons learned and hearing from the successes and challenges of other countries.
- Strengthening the capacity of the NHMS through the EU ECHO project
- Development of a regional advocacy curriculum to help gain buy-in from the government and across the region
- Scaling up early action and developing EAPs for the DREF.

Literature results

The testing of FbF in Nepal has been performed on riverine floods although this could be expanded to flash flooding. A review of current mechanisms in place highlighted the need to build national, provincial and local response capacity in the areas of needs assessments, effective coordination and information management to support district authorities in the conducting of an IRA and coordination of response embedded in the Government of Nepal and NRCS systems.

Enablers and Barriers

- Future enabler: Although a number of stakeholders in Nepal have been implementing aspects of FbF for years a barrier has been coordination between these agents. This includes partners such as the World Food Programme (WFP) and Practical Action Consulting. A solution to this has been highlighted by The Danish and Nepal Red Cross organizations who could facilitate collaboration and communication.
- **Barrier:** Consistently mentioned as a barrier was the **shifting landscape of disaster management** governance in Nepal. A current transition to a federal system has led to a lack of specific guidance from the national government on how municipal, district, provincial and national level governments should respond to disasters and coordinate. This has led to a lack of understanding of responsibilities and thus, requires clarification for more effective implementation of Fbf.
- **Barrier: The coordination mechanisms** between all levels of government for disaster management, specifically for disaster preparedness and response, and the Emergency Operations Centre system. Some of the major challenges that need to be overcome are the development of a coordination mechanism that is able to

navigate the different levels of government having different reporting lines which, due to the above point, has become more complex.

- **Barrier: Poor Data Capacities** were listed in numerous studies as a barrier to a) responding more effectively to disasters but also b) developing a more accurate trigger system. In relation to a) barriers included; poor data literacy amongst those working within organisations, the enforcement of data protection across various agents, poor data sets that required for use in projects, data sets on infrastructure, demographics, topography etc. which impact on the effectiveness of response to disasters.
- **Barrier:** Inaccurate trigger system (related to poor data capacities and most other issues). Further resources are required to regularly monitor the weather and hydrological parameters of the country during the monsoon season and issue the public notice daily.
- **Barrier: Under capacity in some regions** where the amount of workers, technology available, resources, skills levels etc. is considerably low often in the more vulnerable regions. Thus, this has made it more complex to facilitate EA procedures.

Financing and Administrative Systems

Main enablers and barriers for NS to access funding from the FbA by DREF.

Barrier: Attaining sustainable FbF funding via the EAP DREF is the ultimate goal, but firmly remains in the future due to the current trigger system which requires improvement to develop an EAP which is approved by the DREF. The development of EAPs of a sufficiently high standard to pass the validation process of the FbA by DREF mechanism offers a goal post in the development of FbF systems.

Concerns about how quickly funds could move from headquarters to district chapter level through the DREF mechanism.

At the opposite end of the scale, project based financing cannot be rolled over year to year and is unsuitable for FbF activities. Covering the gap between now and when the NRCS will qualify for EAP DREF will require funding that can be rolled over from year to year.]

It is still necessary to create a mechanism to utilise funds for preparedness and risk reduction. Currently, the National Planning Commission has issued guidelines to all government agencies to prepare a budget allocating at least 5% in disaster risk reduction activities.

Forecasting and Science.

The forecasting system used in Nepal for floods is still in the nascent development state. Basin specific hydrological models are still in the development phase, so the EWSs installed in many regions are solely based on the real time monitoring of river and rainfall. A key constraint of these simple systems is the very limited lead time for preparedness and response - as little as 2-3 hours, especially for rivers originating from steep mountainous catchments.

There are also challenges with the forecasting, triggers and warnings in that the majority of these triggers, while documented, are not operational and face implementation challenges. Only two triggers are currently working with flood events; a three-day warning and a 4.5 hour evacuation notice. Of these, the three-day trigger is particularly unreliable however. Additionally, the warning and communication methodologies employed by the DHM are flawed due to numerous reasons including; a) the warnings apply to too large an area, diluting their accuracy, b) staff lack the capacity to properly interpret GLOFAS flood prediction systems and other information, and it is unclear if they are allowed to issue warnings without permission from DHM.

What are the learnings from the evolution of the project setup?

These are numerous...many of which can be seen in the literature review.

Does WFP link with the trigger developed by the RC? Can the risk mapping products development by WFP be integrated into the FbF approach?

The WFP, along with other partners such as Practical Action and the Nepal Government, had established an FbF SOP - meaning at District Level they had developed the trigger and warning mechanisms required to support the project and coordinated response based on this (**5d**). This was considered a **strength**; the base knowledge and experience with FbF is immature across the industry in Nepal. However, there is a core group of organizations with vested interest and expertise. The WFP and Practical Action lead on the early warning and flood modelling aspects respectively, and the Danish and Nepal Red Cross with the practical implementation experience.

Through FbF, the WFP has assisted local governments in improving flood forecasts and developing impact scenarios based on forecast information provided by ICIMOD. For the CRAFT project, ICIMOD provided remote sensing products to estimate crop area for the Terai region. The results were jointly published by WFP, the Ministry of Agricultural Development (MoAD), and CCAFS through the Nepal Food Security Monitoring System (NeKSAP).

1.5. Vietnam

Stage 2 Test FbF: Heatwave

Interview results

Vietnam is in the testing stage of FbF implementation. In its project 'FbF Ready,' the Vietnam RC has thus far focused on FbF geared toward heatwaves in urban Hanoi. VNRC worked with forecasters IMHEN to create GIS maps of vulnerability, exposure, and hazards. Its anticipatory action targets those who are particularly vulnerable to heatwave exposure: the elderly, the street population, slum dwellers, outdoor workers, and disabled people. VNRC conducted testing of Red Cross Cooling centres, where people exposed to extreme heat could get water and cool off. Other early actions include the retrofitting of slums with shading roofs, cash distribution for utility bills, and Red Cross cooling buses. At the time of interview, they were finalising their EAP to enable access to IFRC funds.

Enablers, Barriers and Pitfalls

Table 8: Vietnam's Enablers, Barriers and Pitfalls

Priority lens	Enabler	Barrier
Capacity	 VNRC tradition to respond and work quickly Capacity support from German RC, Climate Centre, and a US- based forecasting professor 	• Capacity of research community, which lacks human resources and facilities
Stakeholder engagement	 RC leadership was quick to get on board with FbF plans Strong collaboration between IMHEN, VNRC, GRC, RCCC 	 Difficulties explaining what FbF is and why it is important Capacity for speaking English makes it challenging to connect on a regional level
Evidence and data	 Availability of socioeconomic data related to vulnerability WMO's mandate for impact- based forecasting as a factor to get buy-in from the Met agency 	 Poor data quality on mortality and mobility due to heat stroke
Financing and administrative systems	N/A	N/A
Forecasting and science	 IMHEN partnership with RC to provide forecasting and heat index for heatwaves Heat mapping conducted for 12 further cities, which can help with future scale-up 	 Highly technical process which can be difficult to communicate Tension between what is seen as scientific perfection versus useful minimum viable product
Pitfalls	The need to be viewed as successful, and to carry out perfect forecasting and response can lead to paralysis in decision-making.	

Interview Takeaways

- 1. Vietnam RC has had success in carrying out its heatwave early action pilot, enabled by its overlaid hazard and vulnerability mapping.
- 2. Stakeholder collaboration has been key to VNRC's successful pilots they received capacity support from IMHEN, German RC, Climate Centre, and a professor at Columbia University.
- 3. The key informants see an experimental mindset as crucial to testing and scaling up FbF. Expecting a perfect outcome can get in the way of achieving a good outcome so it is important to set the realistic expectation that there will be some pitfalls.
- 4. Socialising and advocating for FbF is a slow and constant process. Overnight success is not possible, and persistence is key.
- 5. It is vital to strengthen the capacity of forecasters and humanitarians to understand FbF, from the conceptual overview to the technical details.
- 6. Self-rating: 7 from IMHEN and 5 from German Red Cross.

Analysis

What helped Vietnam to begin to institutionalise FbF?

Pre-existing relationship with MONRE and IMHEN on floods, enabled quick buy-in and time commitment to experiment on building triggers and early actions for heatwaves

VNRC and IMHEN developed jointly a heatwave trigger. How can this collaboration be replicated in other contexts?

VNRC and IMHEN's joint work on the heatwave trigger was enabled by VNRC's existing work with vulnerable communities and IMHEN's understanding of hazard data from satellite imagery. This combination enabled them to overlay the socioeconomic vulnerability data with the hazard data to create a heat map. Their collaboration was facilitated by the support of the German Red Cross to strengthen the capacity of VNRC. The stakeholders spent several years focusing on building a useful heat index, which is something Vietnam never used to do.

To replicate this collaboration in other contexts, it would be important to have an FbF champion within the collaboration guiding stakeholders on what to do next. It would require consistent advocacy and creative thinking to come up with the right indicators, triggers, and early actions, given the problem of poor data quality that is commonly encountered in the region.

A link to the heat index forecast is here: http://222.254.32.12/~rcm/FbF/HeatIndex.html

Is this a catalyst for the science, government, and humanitarian community to collaborate more broadly?

Absolutely. With the potential for scale up to other regions and hazards, the FbF pilot has brought together stakeholders in a productive working relationship. The key

interview did not indicate, however, the level of buy-in by the government for FbF, so there may still need to be advocacy from the side of the humanitarian partners to get the high-level leadership required to embed FbF into policy and law.

What does Vietnam need to move forward?

- In terms of moving forward, the immediate next steps for VNRC were to present the EAP for approval by the government in August
- IMHEN produced the heat index map for 12 other cities, which allows them to scale up the heatwave early action.
- Vietnam could initiate FbF for other hazards such as cyclones and flooding.
- VNRC would like to learn lessons from countries such as Mozambique, Bangladesh, and the Philippines, who are more advanced in their application of FbF.
- A key priority is strengthening the capacity of VNRC, IMHEN, and the government to continue institutionalising FbF.
- There is a second Met agency in addition to IMHEN called the Vietnam National Centre for Hydro-Meteorological Forecasting (NCHMF), with which IMHEN and VNRC can work to improve overall forecast capacity.

Literature results

Financing forecast-based early action in Viet Nam (UN Women, FAO, Save the Children, German RC)

Study conducted on two FbF projects in Viet Nam:

- 1. UN Women project with FAO and Save the Children
- 2. German Red Cross with Viet Nam Red Cross

Aim to identify sources of financing at the local, national, and international level to fund early action FbF. Sources of finance are assessed for FbF based on key characteristics such as access, eligibility, release time, and volume.

Global funding schemes of interest to Viet Nam include:

- IFRC DREF
- Start Fund anticipation window
- FAO SFERA
- UN CERF

Viet Nam RC with German RC is developing an Early Action Protocol for the DREF, for heat waves in Hanoi. It has not yet accessed the Start Fund, but it can. It is also eligible for SFERA funds provided hazards are related to agriculture and livelihoods.

National financing mechanisms include:

- The regular state budget
- Contingency funds for any unplanned expenditure

- Provincial Natural Disaster Prevention and control fund (NDPC)
 - "58 out of 63 provinces have set up an NDPC Fund, and 45 out of these provinces have actually started collecting contributions. Together they collected VND1,352 billion (about USD58 million)."
 - Government is currently revising the NDPC Fund to make it more more effective. Proposed changes include widening activities eligible for disaster response and prevention. It also allows the commune and district level authorities to keep 20% of funds under their own management

"Viet Nam's social protection system under the management of the Ministry of Labour, Invalids and Social Affairs has an integrated component on disaster management: emergency assistance to people or households that suffer from death, injury, hunger or the damage of their house due the impact of disasters." But it is not yet up to an adequate standard due to limitations with the administration system and the comprehensiveness with the social protection system.

"...the World Bank's Global Facility for Disaster Risk Reduction (GFDRR) supports the 'Managing Natural Hazards Project for Viet Nam', which aims to strengthen weather forecasting, early warning systems, and government capacity for risk planning and mitigation, thus contributing to an increased availability of reliable forecasts for triggering early action."

An interesting national programme for mainstreaming forecast-based early action is the Community- based Disaster Risk Management (CBDRM) programme of the Government of Viet Nam.

Recommendations:

- Setting up mechanisms for technical and operational coordination of FbF
- Revising the NDPC fund to ensure FbF is included
- Raise awareness of FbF within the government
- Early action included in the state budget and NDPC Fund
- FbF administrative policies should be light and clear
- Early action plans to identify specific finance mechanisms in the design phase
- Exploring FbF in the CBDRM programme
- Considering the mainstreaming of FbF in social protection
- Seek more opportunities for mainstreaming
- VNRC and Viet Nam Women's Union should be supported in fundraising for FbF
- Targeting mechanisms should be integrated into early action plans
- Risk levels and gender responsiveness could align with CBDRM

FRAMEWORK: Forecast-based Financing 2020 - 2025 (VIETNAM RED CROSS SOCIETY)

"Between 2018-2020, The Vietnam Red Cross with assistance from German Red Cross have been implementing a pioneering project focusing identifying early actions in response to extreme events in urban areas. In specific, the VNRC and the GRC have been working with experts in Vietnam Institute of meteorology, hydrology and climate change to conduct relevant research and assessments in response to extreme weather events, i.e. responses to heat waves in Hanoi. The project aims to identify triggers and agreed early actions to mitigate impact of heatwaves on the target vulnerable groups, thus leading to development of Early Action Protocol (EAP). In 2019, identified early actions including setting up cooling centres, buses and household visits have been tested in three wards in Ha Noi. VNRC plans to roll out in another 12 wards across the city. In cognizant of the benefits of anticipatory humanitarian assistance through FbF, VNRC aims to introduce the FbF approach in other hazards including storm/flood, drought and coldwaves."

Strategic outcomes for 2020-2025:

- VNRC Leadership commitment to FbF
- EAPs developed and implemented
- Training of staff and volunteers
- Early warning information system established and implemented
- Kits for early response standardized and pre-positioned
- Financial mechanism established and applied for early actions
- FbF is advocated by VNRC at local and international levels
- Communications on FbF tailored to target groups
- Partners engaged to seek cooperation opportunities

Vietnam Red Cross Society Hosts Workshop Introducing Cutting-edge Forecastbased Financing Project

"The pilot project, "FbF Ready," uses high resolution weather forecasts to predict the onset of heat waves and carry out appropriate corresponding early actions to reduce the suffering of vulnerable populations in Hanoi, including street workers and the elderly. The project, which is supported by the German Red Cross (GRC) and conducted in collaboration with the Vietnam Institute of Meteorology, Hydrology and Climate Change (IMHEN), will build the capacity of the VNRC to apply the FbF mechanism to respond to other disasters in Vietnam such as flooding and cyclones."

Introducing FbF to an Urban Setting

- 'FbF Ready' focuses on Hanoi, high risk of heatwaves. Urban Heat Island Effect
- Elderly, street population, slum dwellers, outdoor workers, disabled people at high risk.
- Urban FbF has a much smaller geographical scale than rural areas. Dense populations mean high risk people live close to one another
- High resolution local forecasts predict extreme weather events with high accuracy

- GIS mapping of vulnerability, exposure, and hazards.
- Knowledge, attitudes, and practices survey to collect data about the capacities of vulnerable groups to cope with heatwaves
- FBF Ready conducted a stakeholder network analysis and AGIRI stakeholder analysis to identify relevant stakeholders

Heatwave Early Actions Test in Hanoi

- VNRC conducted a test of Red Cross Cooling centres, where people exposed to extreme heat could come to get water and cool off. The centres were found helpful by the people who used the test centres
- Other early actions include the retrofitting of slums with shading roofs, cash distribution for utility bills, and red cross cooling buses.

1.6. Mongolia

Stage 3 Make the case: Dzud

Interview results

The Mongolia Red Cross Society (MRCS) developed its EAP in August 2019 and implemented it the following January. MRCS recognizes it is in a phase where FbF is still new and needs to be refined to support institutionalisation. In January 2020, Mongolia became the first country in the world to successfully implement FbA by the DREF and its EAP for a "duzd"⁴ (a severe winter). MRCS supported 1,000 herder households with CHF 88 each (approx. USD 100) and implemented the EAP from the trigger date of 8 January to 8 March 2020. FAO partnered with MRCS to implement the same EAs based on the same trigger.

Successful implementation of Mongolia's early actions to support herders and livestock, in the face of scientifically evidenced climate risk is well-documented in a number of publications, from the IFRC, MRCS, FAO to The Economist. Since 2017 initial ground work was undertaken to collect data, assess risk, strengthen the collective humanitarian approach, make decisions on agreed early action prior to the winter and assess the results post-event.

A number of increasingly coordinated actors have provided critical skills and resources: FAO, WFP, British Red Cross Society (BRCS), The National Emergency Management Agency (NEMA), National Agency for Meteorology and Environmental Monitoring (NAMEM), MRCS, University of Life Sciences, Mongolia (ULS), RCCC, Information and Research Institute of Meteorology, Hydrology and Environment (IRIMHE), Nagoya University of Japan, Humanitarian Country Team Members (HCT), Khan bank and animal experts (nutrition and medical advisors; pastoralists and herders).

Case studies including pre and post impact assessments with beneficiaries and nonbeneficiaries have evidenced up to a 7:1 ROI. Herder's stories further outline the type of EAs undertaken and the immediate and longer-term impacts. A list of best practices such as mobile data collection and alignment with the Sendai Framework Disaster Risk Reduction (SFDRR) principles is also documented.

With MRCS and FAO working jointly on EAP, other actors such as Save the Children and World Vision are exploring the same Disaster Risk Framework.

Enablers, Barriers and Pitfalls

Table 9: Mongolia's Enablers, Barriers and Pitfalls

Priority lens	Enabler	Barrier
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⁴ Dzud: A term used in Mongolia to describe a phenomenon where an extreme summer (hot and dry) is followed by a severe winter leading to large amounts of livestock dying.

Capacity	 Understanding of FbF Training and support on developing EAPs Sharing of FbF studies: FAO, <i>IFRC</i>, <i>MRCS</i> (2017 experience) 	 FbA capacity needs strengthening for dzud scenarios and multi- hazards Delays due to COVID-19: FAO impact assessment delayed
Stakeholder engagement	 Established collaborations with government: NEMA Established collaborations with MET agency: NAMEN Coordination through: HCT, UN annual meeting, UN clusters, NAMEN pre-winter meeting, TWG Collaboration with: ULS, RCCC, FAO, WFP (PRISM), IRIMHE, University of Nagoya Strong advocacy of FbF: BRCS, HCT High-level political commitment translated into policy: FAO's mandate is clear 	 Lack of suitable policy and regulatory environment: <i>FAO</i> - <i>standard for cash-based</i> <i>intervention</i> Lack of leadership from government: MRCS and FAO have not seen Government use ROI results for wider application - <i>scale-up</i> Institutional emphasis on post- disaster response: <i>scale-up</i> is <i>needed to overcome this</i> Lack of advocacy - required for improved trigger data, funding and targeting of beneficiaries
Evidence and data	 Experimentation/innovation mindset Running FbF studies: ROI, M andE Effective Monitoring and Evaluation 	 Lack of Monitoring and Evaluation: NAMEM lacks capacity in monitoring fast onset hazards e.g. wildfires, flash floods, animal infections Need to continue testing and improving: weather forecasts, response, animal care kits, impact analysis
Financing and administrative systems	• Skilled human resources	 Lack of access to finance; barriers to timely disbursement: FbA by the DREF access restriction to every 5-years and capped at 250,000 CHF⁵ Lack of access to finance; barriers to timely disbursement: FAO sees inconsistent funding from Government state reserves
Forecasting and science	 Functioning forecasts and early warning systems: <i>Dzud risk map</i> - <i>IbF</i> Developed understanding and communication of forecasts Training and support on trigger development: <i>RCCC</i> Detailed data on vulnerable areas: <i>mobile devices used</i> 	 Inaccuracy of forecasts: weather forecasts need refinement Lack of available data sets: socio- economic household data gaps Short lead times for hazards: not for dzud but for other hazards e.g. flash floods (<10 hours)

Interview takeaways: MRCS

1. Work very closely with NEMA who endorsed MRCS to provide humanitarian support during dzuds. Implementing the imminent DREF in 2017 provided valuable learning from the impact analysis. Learning from mistakes. ULS study showed ROI from 223

 $^{^5}$ FbA by the DREF has recently increased its financial mechanism cap to 350,000 CHF

FBF beneficiaries and non-beneficiaries. Would like to see the Government scaleup the actions based on the results.

- 2. FbA by the DREF is only accessible once every five years and MRCS finds this restricting as we have annual high-risk events. A level of risk could be reduced each year which is currently not being addressed.
- 3. The risk map is more of a hazard map and needs refinement by adding socioeconomic layers (household income, preparedness levels, government preparedness levels). This is being done by NAMEN and will be ready in November.
- 4. Further evidence to help institutionalise FbF might come from WFP's PRISM⁶ which will be ready in two-years. Sri Lanka has applied this successfully.
- 5. MRCS does not consider itself a role model as FBF is new to Mongolia. MRCS has an effective presence but capacity is needed and multi-hazard. Advocacy is needed to provide more support for improved trigger capacity and targeting. Weather forecasts need improving these could predict a bad December, but the opposite occurs.
- 6. Outside of the dzud there are fast onset hazards that are challenging to manage e.g. steppe wildfires, flash floods and animal infections. The NAMEN does not have the capacity to monitor these risks. Flash floods impacted 1,000 households this year.
- 7. Australia Red Cross Society is supporting with FbA capacity for dzud in different scenarios, through a new framework.
- 8. Self-rating: 6

Interview takeaways: WFP

- FAO's mandate is clear and it follows Livestock Emergency Guidelines and Standards (LEGS). Limitations include lack of crosscutting focus such as gender and social protection sue to data availability. In response the NDMA set up a DRR Department and a TWG on socioeconomic trigger development.
- Ministry of Social Welfare data on households is only updated every three-years. FAO has been working with local authorities and social protection officers to gap fill. Real-time data is vital, FAO is interested in working with its internal program: Resilience Index Measurement and Analysis (RIMA) as a possibility to fill this gap.

⁶ PRISM: The Platform for Real-time Impact and Situation Monitoring assesses the potential risk and forecasts the impact of climate hazards on the most vulnerable communities, in order to design risk reduction activities and target disaster responses.

- 3. The joint response with MRCS, NEMA, NAMEN and the HCT was successful due to a consistent approach and information sharing before the dzud. The TWG is however not very active.
- 4. Require policy support to develop a scaled-up and consistent approach with prepositioned funds (state and other actors), especially for cash-based interventions such as conditional cash transfers. The FAO 2017 ROI study proved a 7:1 ROI and Government feedback was very good. However no policy adjustments have been made. MRCS provided funds, so did FAO and so have other agencies, especially with COVID. Equity to beneficiaries in similar situations is important.
- 5. More quantitative and qualitative analysis will follow jointly with MRCS, a study on the January 2020 EAEW and FbA by the DREF.
- 6. FAO has not invested in NAMEN as a user of the product, but provides feedback. NAMEN hosts an annual conference in support of the national university with two annual workshops. FAO presents results and shares what is planned for the forthcoming season. The conference focuses on drought, dzud and pests.
- 7. The importance of resilient livelihoods for food security needs to be taken up at a regional level. Separating livelihoods from unemployment and food security is not an effective approach. COVID-19 reference materials have been beneficial in acknowledging this.
- 8. FAO is now implementing a pilot on climate-smart livestock transaction system this will improve the herders' understanding of how climate change will impact them and what adaptation needs to be taken-up. This may contribute to the institutionalisation of FbF.

Analysis

What helped Mongolia to begin to institutionalise FbF?

Provision of a risk map by the NAMEN and development of early actions in 2017 by BRCS. Impact analysis pre and post response evidencing an effective approach through adoption of FbF for the dzud.

How does the successful FbF activation help with advocacy with government and NAMEN? Does it support the dzud risk map to become more user friendly?

NEMA was a key stakeholder of MRCS during the January 2020 EAP implementation. The result of FbF activation and of earlier 2017 response work MECS delivered has lead the Government to endorse MRCS as the key responder to the dzuds hazards. In terms of advocacy, there is a close working relationship, however MRCS would like to see social-economic data overlaid onto the risk map (NAMEN is apparently providing this in November), in addition to scaling-up support for FbF. This includes refining triggers, providing funding and understanding target beneficiaries across the country. (No comments were made on the risk map becoming more friendly). The risk map is perceived by MRCS as more of a hazard map due to a lack of social-economic detail from households and government on preparedness and resources.

What are FAO's internal processes to make ex-ante funds available In Mongolia? (Activation was one-week behind MRCS)

Once the triggers are made clear, FAO has stationed funds for emergency rehabilitation activities, which include the EWEA window. If a disaster is already anticipated, FAO has availability to mobilize resource from this exante EWEA anticipatory window. Like MRCS, FAO use the dzud risk map, and the other related risk triggers. FAO can use the CERF Fund also; for the early action window there is a maximum USD 500,000. (No comment on the reasons behind the week delay).

What does Mongolia need to move forward?

Capacity

- FbA training by Australia Red Cross Society
- Focus on multi-hazards and fast onset: wildfires, flash floods and pests

Advocacy

• FAO-MRCS Impact assessment results to support NDMA/NAMEN to scale-up prepositioned funds, further refinement of triggers and accounting for socio economic data

Policy

- Codify through regulation, state funds for prepositioned funding
- Develop policy for HCT to improve consistency in beneficiary targeting and amounts of cash transfer for increased equity

Evidence

- Promotion of FAO-MRCS impact assessment report on January 2020 EAP implementation
- Further testing for 2021 and impact analysis
- Dialogue on support for NAMEN to develop resources to monitor other hazards

Forecasting and science

• Use of NAMEN's socio-economic enhanced risk map for 2021

MRCS-FAO identification of trigger improvements and intervention areas.

Literature results

DRM applied early November, requests expire Dec 31st.
FAO and MRCS use of DRM is now being used by Save the Children and World Vision. As more actors become interested in early action, it will be important to coordinate activities (including organizing working group on forecast based actors, avoid from duplicated effort etc.) to reach those in need timely and more efficiently.

Challenge - an accurate count of the number of animals owned by a herding household and understanding which households continue to rely primarily on herding and as such are considered 'active herders', and which now have mixed livelihoods or are primarily caring for the animals of others who are no longer engaged in the dayto-day activities of herding.

Ranking households with particular characteristics as more vulnerable than other households includes some normative decision making i.e. large herders vs smaller herders (pp 27)

The vulnerability of the household is greatly influenced by socio-economic indicators such as disability, single-parenting, and having multiple children of school age.

They were advised by the livestock experts what to include the animal care kit.

Field research on availability of hay and fodder to herders was conducted through RC branches and starting from November to March, the hay suppliers provide hay bales and fodders from eastern provinces of Mongolia, northern villages of Russia to the other provinces. On the other hand, if there's a sign of extreme winter conditions or the situation comes close to emergency level, the state fund of hay and fodder will be allocated to the provinces to be sold at half-price. It's confident to state that the hay and fodder will be available, if the herders have cash.

In the framework of the FbF project which was implemented by MRCS in 2017 with support from British Red Cross, MRCS distributed animal care kits and unconditional cash grants to 2'000 herder households in 40 soums across 12 provinces in a timely manner.

The impact analysis survey was conducted by National University of Life Sciences and Agriculture among 223 FbF beneficiary and 223 non-beneficiaries after FbF project implemented in 2017. From the results of the survey, the herder households who received cash assistance had spent most of the cash to buy hay and fodder for their livestock and also considerable amount had been spent for food. The cash assistance was distributed in December and the animal care kits in January, considering the peak of livestock death is February to April, with cash assistance and care kits made the herders available to feed their exhausted or weak livestock.

PP 38 M andE questions: (1) Did we learn something new about the elements that form the basis of the trigger? (Is one of the elements different from what it was when triggers were initially defined? Has anything changed about the datasets we use that requires a review of triggers?); (2) Do we know more about the accuracy of the models used? (How did the forecast for risk of dzud impact compare to the actual impact from risk? Are the forecast models used still the best available?); (3) Were the probabilities and impact levels of the original trigger appropriate? This evaluation process will guarantee a continuous learning and improvement of the system.

Mongolian Red Cross Society (MRCS) has 33 mid-level branches, existent in all provinces and districts as well as is a sole National Humanitarian Organization in Mongolia. Under the newly adopted Law on the Legal Status of the MRCS passed by the Mongolian Parliament in late 2015 and approved by the President of the country in January 2016, the MRCS is an auxiliary to the government in humanitarian matters with a distinct recognized role in disasters and emergencies as stated in the Disaster Protection Law of Mongolia.

The MRCS is a member of the National Emergency Commission and the Humanitarian Country Team who actively involves in the planning and designing of the national response to the emerging crisis. The MRCS's response conduct in close cooperation with NEMA and other HCT members. MRCS has previous experience from response to Dzud with capacity strengthened through development and adopting response mechanisms such as cash-based interventions and building stronger partnerships and establishing strong ties with relevant service providers.

MRCS conducted OCAC (Organization Capacity Assessment and Certification) in 2014, 2016, 2018 and there have been significant improvements in the various organizational sectors of MRCS.

1.7. Philippines

Stage 3 Make the case: Floods and Droughts Stage 4 Scale-up: Typhoons

Interview results

The Philippines Red Cross Society (PRC) has recently completed an initial piloting phase focused on typhoons and is collecting learnings before implementing any further new projects. FbF Phase I was supported by German Red Cross and Finnish Red Cross. The 36 month project ran from August 2017 to July 2020. Initially covering 10 high-risk target areas, this increased to 22 following trigger testing and simulations proving the need to extend the high-risk zone for EAP implementation.

A small-scale early action drought test was completed and following participation in the 5th National Dialogue Platforms, a small-scale test activation of the EAP, through the imminent DREF for Typhoon Tisoy, took place with 72 hours lead time. Lessons learned were collected. The EAP was finalised December 2019 with three early actions adopted. Guidelines for Declaring a State of Calamity were approved in June 2019, allowing Local Government Units (LGUs) decentralised decision making on preposition financing under the existing Local Disaster Risk Reduction and Management Fund (LDRRMF), for early action on disasters impacting 15% of the population as evidenced by forecasts.

In 2020, the COVID outbreak and response delayed planned trainings, which were then converted to 12 online workshops. Progress was made on the shelter strengthening kit (SSK) in addition to the development of a draft flood EAP and commencement of Phase II of the FbF pilot (ending December 2022).

A high level of coordination and stakeholder engagement has been an integral and critical part of the Philippine's FbF journey to institutionalisation. Most significantly with the National Disaster Risk Reduction and Management Council (NDRRMC) under the Office of Civil Défense (OCD), in addition to Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA). Other critical stakeholders include: Department of the Interior and Local Government (DILG), Commission on Audit (COA), Department of Finance (DoF), Department of Social Welfare and Development (DSWD), Provincial DRRM Offices, GRC, 510 initiative of the Netherlands Red Cross, FAO, WFP, Start Network, CARE, Oxfam, other TWG members and other stakeholders.

Enablers, Barriers and Pitfalls

Table 10: Philippines's Enablers, Barriers and Pitfalls

Priority lens	Enabler	Barrier	
Capacity	 Understanding of FbF: program implemented since 2017 Dialogue platforms Training and support on developing EAPs 	 Understanding of FbF concept: a new concept that requires more training to apply (WFP) Lack of access to dialogue platforms: Chapter level visa delays 	

	 Decentralised volunteer network: 103 Chapters Shelter strengthening kits 	 Geographical reach and logistics: isolated islands, long distances for early harvesting Skilled volunteers in pre-disaster: different Chapters have different capacities Delays due to COVID-19: Chapter trainings for EAP
Stakeholder engagement	 Established collaborations with government: NDRRMC, DRRMO, LGUs and other Departments Established collaborations with MET agency: PAGASA national and subnational levels Coordination: national TWG biweekly meetings; local TWG Collaboration with 510, GRC, FAO, Start Network, RCCC, IFRC Strong advocacy of FbF: RCCC, WFP, NGOs GCF approved project 2020 continuing WFP two-year programme 	 National and Provincial levels understand FbF concept but other LGUs require training on early actions and financing Lack of collaboration with the MET agency: challenges with PAGASA at national level, MOU on hold since June 2019 Lack of coordination between humanitarian actors: WFP and Government not using lbF and historical data like FAO, RCRC, Start Network who also deliver direct implementation (WFP) Lack of suitable policy and regulatory environment: FbF not written into policy, not integrated with DRR Institutional emphasis on post- disaster response: financing and policy changes required
Evidence and data	 Experimental/innovation mindset: tested and refined typhoon and flood EAPs, tested drought EAs, 510 manual calculations, imminent DREF implemented etc. Effective Monitoring and Evaluation: simulation results of EA for typhoon, drought and floods 	N/A
Financing and administrative systems	 Skilled human resources: transfer of DRR skills Functioning forecasts and early warning systems LDRRMF policy 	 Lack of human resources: : DRR is useful but different to FbF and EA Chapters under-capacity to support FbF, with six services in remit, including DRR Banking services are not open during weekends but hazards occur weekdays and weekends Lack of access to finance; barriers to timely disbursement: LGUs have to

		 pre-plan annual disaster budgets which is challenging LDRRMF yet to be applied (WFP) 	
Forecasting and science	 Training and support on trigger development: 510 Context specific EAs based on geography and vulnerability of community 	 Inaccuracy of forecasts and early warning systems: typhoon track changes Short lead times for hazards: challenging to undertake EAs Lack of skill for interpreting forecasts: programmatic staff are not forecasters and lack technical abilities to read forecasts and provide feedback (WFP) 	
Pitfalls	 Initial limited geographic scale of flexible, act anywhere and apply scaled up to 22. Bureaucratic impact on impleme agreement approval between PR the 72 hour trigger time. 	Initial limited geographic scale of target areas compromising ability to be flexible, act anywhere and apply the EAP i.e. 10 high-risk target areas scaled up to 22. Bureaucratic impact on implementing the EAP in 2019 due to awaiting agreement approval between PRC, IFRC and GRC. This resulted in missing the 72 hour trigger time.	

Interview takeaways

Self-rating: PRCS - 5; WFP - 6.

[Add 3 interview highlights]

Analysis

What helped Philippines to begin to institutionalise FbF?

Highly active support in the form of programming and resources GRC, FinnRC and 510 during Phase I: development of typhoon trigger for homes and EAs for four simulations.

Philippines RC:

Evidence from testing leads to LGU uptake

Early actions were identified, designed and tested specifically for FbF, showing that they work?

Yes. Four simulation exercises have been conducted for different EAs; for cash distribution, early harvesting, shelter strengthening and livestock evacuation - and they are working. PRC has made these more practical and adapted the methodology in response. For example, changing the design of the strengthening kit and the prestoring of this stock. Small-scale adjustments have been made. How to show these are working the PRC must prepare more publications. There are a couple of videos but not a proper analysis of the EA impacts at the ground level due to the limited amount of beneficiaries.

LGUs showed interest, have they allocated own funds for EA implementation?

Not yet. Generally for EA there has been limited pre-emptive evacuations at different locations. The state of calamity and access to the Quick Response Fund (QRF) is postdisaster allowing access to 30% of the Fund. This cannot be used at the moment for EA. The June 2019 memorandum stated that, in the future the LGU will be able to access the QRF if they can predict that an impending disaster will effect more than 15% of the population. This has not been implemented at the moment. The only possibility for EA would be to plan it early enough to access the preparedness fund which is 70% of the DRRM fund at the local level. This is more challenging and requires budgeting this in advance into the annual implementation plan at the end of the fiscal year. However, some LGUs have done this and PRC provide assistance for this. This is something they can use to identify livestock evacuation areas in advance (San *Isidro*), or to buy equipment. This is how it is being done in certain areas. The PRC will need to enhance the implementation of these programmes.

Can the learnings be transferred across hazards?

Yes. For example, replication of the livestock EA could be transferred to slow onset hazards like drought or volcanos. One problem is that variations are coming from different LGUs in implementing due to capacities, geography and understanding of EA.

What technical tools (repository of EA?) can help with scaling up?

Yes. Some of the EA has demonstrated that it is feasible within the Philippine context and can be duplicated anywhere. Livestock evacuation will be relevant to all countries exposed to floods etc. The metrological method with 510 for IbF could be of interest to other countries. The tool has been developed with statistical modelling -PRC has not had the opportunity to present this to other countries wanting to implement FbF. PRC have discussed this once and there is an opportunity to collaborate in the future with other agencies.

The shelter strengthening kit was developed with Build Change, an NGO which other countries could learn from (e.g. Vietnam could do something similar) depending on the type of house they have on the coastline. There are some technical elements that could be shared between countries that don't necessarily have to be country specific.

Philippines WFP:

Advocacy using PRC evidence

WFP helps OCD to operationalise memorandum 60?

Yes. One major barrier in the implementation of FbF was the existing institutionalised system - that you make expenses in response to an event. If any level of government spent the emergency budget in anticipation, it could be considered against the law. When WFP started the project, disaster financing was only for emergency situations, the devastation had to have already happened. WFP had to really work with the

government to make them understand the concept and what was barriers existed for spending in anticipation. WFP are still working on this following Memorandum 60 to provide financing following forecasts.

The issue is that the government is quite decentralised. So at every level of governance, from the village up to the national level, you can release funds. If you are able to predict that a certain percentage of your population is at risk, you can access funds. So it's not that there is more budget, but that the existing funds can be used differently. The challenge is that because the power for controlling funds is still at the local level, it's about raising awareness and capacity at that level. So getting LGUs to be willing to devote that money to early action.

Push to integrate FbF into Listo⁷ protocols?

(Not a listed question during interview).

Does WFP rely on evidence from PRC for advocacy with Government counterparts?

In the FbF community there are a lot of tools in place, and a lot of actors make use of cost/benefit analysis and evidence to show that acting early did save a lot of dollars so it makes sense on an economic basis. But what is compelling to WFP is whether it helps to improve on our mission and mandate, which is to improve food security. When we had a test last year, we really focused on whether food security indicators had improved for those who had received food in advance.

One challenge WFP faces is that the high-level buy-in from the government is still challenging to obtain. WFP would like to see different champions for FbA within the government, at the high level, because then it would be prioritized. WFP often work with technical government employees, but they are not the key decision-makers that can accelerate things.

What does Philippines need to move forward?

- Integrate Chapter Project Officers position into the regional hub for two-way flow information and sharing of FbF practice
- Develop stronger M andE and FbF/EWEA documentation linking in food security indicators to build a stronger case for WFP to advocate to the Government for the institutionalisation of FbF

Literature results

The implementation of Fbf EAPs in the Philippines was initially introduced to provide assistance with typhoon events. During the period 2017-2019 phase 1 of the project

⁷ Operation Listo Protocols: Operation Listo program launched in 2014 institutionalized local protocols for disaster preparedness, response, and monitoring. In response to the pandemic, the protocols have been updated to include the management of infectious diseases.

was implemented with the introduction of EAPs in 10 high risk areas nationwide, this later being expanded in response to events targeting a large number of areas.

Early Actions Adopted

- 1. *Early harvesting of matured crops*: this Early Action must be contextualised to the different regions where it is considered.
- 2. *Evacuation of livestock or assets* is considered only in Bicol and in Mindanao, where there is a higher concentration of livestock.
- 3. *Installation of Shelter Strengthening Kit (SSK)* will be possible in the four regions of intervention.

Stakeholder Engagement

There appears to be a high level of engagement with various agents facilitating the effective implementation of FbF and EAP mechanisms (*see Working Technical Groups below pg.3*).

Key national agencies, such as OCD, PAGASA, DILG, DoF, COA, DSWD, and others, are involved in discussions on FbF through bilateral meetings and participation in national events. Numerous events take place co-organised with WFP, FAO and START Network - these include: 9 Technical Working Group Meetings, 3 National Dialogue Platform, 1 Regional (Asia Pacific) Dialogue Platform in Manila.

Agents Include: Philippine Red Cross (PRC), German Red Cross (GRC), Finnish Red Cross (FinnRC), Red Cross Climate Center (RCCC), International Federation of the Red Cross and Red Crescent (IFRC), WFP.

Consistently referred to is the **510 initiative of the Netherlands Red Cross** - the data initiative of the NRC became involved in the FbF project because of the Community Risk Assessment (CRA) tool they set up few years ago for the Philippines. This tool - which collects and integrates many risk-indicators at provincial and municipal level and visualizes all results easily through on online dashboard (<u>https://dashboard.510.global</u>) - will support the selection of target areas for Typhoon Early Actions (EA). Additionally, the 510 team has substantial **experience and expertise in typhoon Impact Modelling, and their Typhoon statistical model will be the basis for triggering the typhoon Early Actions proposed in this EAP.**

Scaling Up: Identified Barriers and Recommendations

Reports highlighted potential barriers to scaling-up (primarily 1a):

Barrier: How to manage the project efficiently when the regional scope of the project expands? It is recommended that an efficient coordination system, with the chapters that are implementing the early actions, is created. To achieve a more successful implementation there would be a need for more de- centralized way of managing and coordinating with the chapters otherwise it could become a "little bit burdensome". Currently, Chapter Project Officers exist in each of the target region

but there is still a need to work on how to improve their mandate for them to effectively facilitate the progress of the chapters they are supposed to coordinate. One **possible solution** is to integrate their position as part of the regional hub in the future.

Barrier: How to institutionalize the FbF more strongly into the work of the Chapters and the NHQ?

Chapters have been an important part on the design of the EAP through simulation and consultation throughout the years. Make sure that DMS CSR can incorporate and integrate FbF as a part of the work of their service. FbF should not be seen as a separate project with a limited life span but rather seen as a permanent toolbox for DMS.

Barrier: How to mainstream the FbF into the DMS in general? Included small modules on FbF as a part of the SDRRMT package for DMS volunteers.

Barrier: Effectively targeting beneficiaries - when the trigger is reached, it is important that the chapters will pre-select the beneficiaries in peace time and make sure that Metadata base is prepared so that when the trigger is reached, chapters can go in the community to quickly validate the existing lists with the Barangay Committee. In any large-scale activation, the number of beneficiaries shall reach at least thousand people and that large number cannot be selected in a small timeframe.

Barrier: Effective coordination of volunteers - Large scale activation will require Chapters to mobilize a large number of volunteers, which could mean that there is a lack of volunteers available (especially if operating in short timeframe). May also require additional training to ensure that volunteers are aware of EA implementation, to facilitate the connection in the barangay level to raise awareness, and to help in continuing to update the Metadata base. **Recommendation**: display online training materials and produce training videos for the chapters.

Barrier: Communication with some national agencies: Working with partners is an important strategy of the project, especially with the nationwide scaling up planned, and institutionalization of FbF into the National DRRM system. National government agencies play a big and essential role in the implementation of FbF (there is existing strong partnerships already with the OCD and DILG). Unfortunately, PAGASA, DoF, and COA, are challenging to work with; PAGASA is indeed very much essential when we talk about triggers. Our partners from LGU would want and is required to use PAGASA's forecast to make decision for their actions. While DoF and COA play vital role in terms of financing, and approval of the use of the LDRRMF. Thus, bringing actively onboard these agencies, can clarify these matters.

Barrier: Financing Mechanism: the **financial flow** in the EAP should be re-considered for addressing both situations (EA activated during week days, or during the weekend), and more importantly for a large-scale intervention. Barriers were

identified; although the PRC has internal financial controls that are followed, there is a need for a 'fast-lane' to expedite procedures during emergencies. Signing authorities are also very low and centralized; typically all approvals go to the SG which prevents timely operational response. A bureaucratic and paperwork-intense approval process also exists. It is proposed that the FbF project makes a mapping of the chapters' capacities to advance the EAP activation budget, in case the transfer is not possible on time. .The possibility of using mobile fund transfer or remittance companies could also be considered.

Evidence and Data

In case of an activation of the Typhoon EAP, key information will be collected on how effective implementation of the Early Actions has been, as per the planned process informed in this document. Key information that shall be monitored on the following:

- Trigger level,
- List of beneficiaries submitted to the barangay validation committee (and approved)
- List of beneficiaries having received the support
- Feedback of beneficiaries on the intervention (through a close out meeting, tentatively a month after the activation, depending on the situation on the ground)
- Consistency of the support with the plan (amount received, material provided, timeliness of the intervention)

To assess these elements, the following documents will be compiled by the FbF project: impact forecasts (510 maps), a copy of the alert and trigger messages sent by OpCen, beneficiaries lists and cards, service contract for workers.

In order to measure the impact of the typhoon early actions to a predicted threat, it is important to estimate how the intervention has changed the status of the beneficiaries of the early intervention in affected areas, compared to affected people who didn't receive the support. The FbF team will do this assessment with staff and volunteers from the concerned chapters few weeks after the intervention.

Forecasting and Science

Currently the forecasting system in place has enabled effective implementation of FbF EAPs and is considered "very strong" in PRC as related to hydrometeorological emergencies (e.g. typhoons, flooding) as PRC is linked to the national weather forecasting organizations (e.g. PAGASA). PAGASA who send an alert' messages to the chapters at-risk, on day -4, and a 'trigger' message the day after (72h before landfall), when the impact on housing forecasted with the statistical model of the 510 initiative (Netherlands RC) is of more than 10% of houses to be totally damaged in at least 3 municipalities.

However, some improvements with the forecasting system have been outlined:

- The selection of the target provinces 72h before landfall must take into account the possible track change in the following days and could be widened, through the inclusion of provinces where the predicted impact is not yet significant, 72h prior to landfall.
- The trigger methodology should keep some flexibility if for example the threshold is not reached exactly 72h before landfall, while it may have been reached in earlier impact forecasts or could be reached by the next one. For typhoon Tisoy, the estimation of the landfall time was not perfect as often the landfall point was predicted inland, far from the coastline. The 510 team will make necessary improvements.
- Automatic impact forecasting system didn't perform well as the Philippines FbF team had to request the 510 team to manually initiate the calculation 120h before landfall; this point has been discussed with 510 and corrections are going to be made.

Can the learnings be transferred across hazards?

It is expected that FbF will be adapted to respond to **droughts.** During phase I of the FbF EAP implementation, some works pertaining to drought were already started, and early action was tested with the distribution of cash grants to farmers prior to the drought taking place.

Epidemics have also been suggested, as well as **heatwave** which are totally new hazards which are expected to be explored.

What technical tools can help with scaling up?

- **Technical Working Groups:** TWG were initially created by WFP during their pilot implementation of FbF however, together with the PRC the TWG has now been expanded and is meeting regularly, on a quarterly basis. The TWG provides the FbF projects with technical guidance in terms of using scientific data for anticipatory response, adhering to national policies and guidelines (i.e., the disaster risk reduction management Act, the climate change adaptation Act, the Guidelines on the use of the LDRRM Fund), and establishing national standards for FbF that will ultimately support the replication of forecast-based early actions protocols at all government levels.
- **Core group discussions** on a more regional and local scale also take place these provide an opportunity to discussing concrete matters related to FbF. So, if there are concerns, or new memo orders, policy, etc., that will affect the implementation of FbF these are discussed with these groups. With agents informed and engaged then it also easier to gain support from them.

- Series of **trainings** on the EAP to assist with implementation on multiple levels of the EAP. These have currently been restricted due to the Covid-19 pandemic.

Key members of the TWG:

Office of Civil Défense (OCD), Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), Department of Social Welfare and Development (DSWD, Department of Agriculture (DA), Commission on Audit (COA), Food and Agriculture Organization (FAO), CARE International, Oxfam

1.8. Bangladesh

Stage 4 Scale-up: Cyclones and Floods

Interview results

Bangladesh has been piloting FbF since 2015 and is in the process of scaling it up. Its Standing Order on Disaster (SOD) includes a definition of FbF and a list of taskforce members, coordination mechanisms, and roles and responsibilities. The SOD reflects buy-in from the government at the policy level.

Bangladesh Red Crescent Society (BCRCS) has developed its Early Action Protocols (EAP) for cyclones and floods. Bangladesh WFP has been working on FbF since 2016, first running simulations and then deploying anticipatory action for flooding in 2019.

In 2020, the UN CERF provided \$5.34 million for anticipatory action in Bangladesh during a period of intense flooding. The CERF funding was earmarked for WFP, BDRCS, FAO, and UNFPA to provide early action in the form of cash assistance, livestock protection, storage of goods, and kits for women and girls.

Enablers, Barriers and Pitfalls

Table 11: Bangladesh's Enablers, Barriers and Pitfalls

Priority lens	Enabler	Barrier
Capacity	 RC Has a strong volunteer capacity, include around 35,000 volunteers RC and WFP have run multiple successful FbF activations Focus on two hazards has helped to strengthen capacity Standing Order on Disaster (SOD) an indication of strong prioritisation of FbF 	 Need to convince people to buy into the anticipatory approach (at all stakeholder levels) Sometimes government has the tools they need but not the skills to use them properly, or vice versa
Stakeholder engagement	 Strong relationships with government, various MOUs in place, and very active working groups WFP collaboration with the flood forecast warning centre and the Bangladesh Met Department, GRC, BDRCS, and RCCC Generally a high level of awareness surrounding FbF after many years of advocacy Technical Working Group on FbF hosted by RC National-level dialogue platform on FbF in 2019 	 A lack of engagement from SSARC - the regional organization and its disaster risk department (ASEAN's counterpart) Dominant narrative skewed toward response in South Asia Need for a culture shift in terms of buy-in and prioritising anticipation

Evidence and data	 Experimental/innovation mindset Conducting post-impact studies for lessons learned (RC) Outcome assessment to build evidence on effectiveness of cash-based interventions (WFP) 		
Financing and administrative systems	 Successful activation of the CERF for flooding in 2020, allowing collaboration between agencies to reach people at a larger scale Accessing funding from multiple donors, including DREF, governments, and CERF MOU with bKash to serve as financial intermediaries BDRCS was not able to access funds directly from the UN CERF so subcontracted under WFP. This caused delays. The early action window and lead time was lost as the floods were already happening once the agreement was approved 		
Forecasting and science	 Improvement around forecasts after investment made in the capacity of forecasters Improvement around forecasts after investment made in the capacity of forecasters Issues with quality and timeliness of forecast data Cyclone activation time is 30 hours, which can be a challenge as it is a very short response time window 		
Pitfalls	 An initial highly prescribed approach and limited geographic scale of target areas (two villages) was not fit for purpose. Initial plans abandoned and geographic target areas expanded to coastal and inland. Bureaucratic impacts on delayed implementation of the CERF for Cyclone Amphan as traditionally only UN agencies apply, so BDRCS accessed this CERF fund through the WFP as a sub-guarantee. The agreement was in place but not finalised which took 2 extra days, by which time the flood had hit Bangladesh. 		

Interview Takeaways

- 1. Bangladesh is at a fairly advanced stage of implementing FbF, having rolled out anticipatory actions for cyclones and floods, and built strong relationships between the government, humanitarian actors, and forecasters.
- 2. Bangladesh's access to the CERF for flooding in 2020 makes it a frontrunner in implementing FbF at scale. However, logistical challenges meant that BDRCS was not able to access CERF funding in time to implement its anticipatory actions, though WFP was able to. It has since created the logistical partnership needed so that it can access CERF funds via WFP.
- 3. BDRCS and WFP are engaged in a continuous process of working with and building the capacity of government agencies. The government is not at the stage where it takes full ownership of FbF, but its inclusion of FbF in its Standing Order on Disaster represents an important step towards institutionalisation.

- 4. Additional collaboration between the scientific and humanitarian sectors is necessary to build capacity and improve the potential for FbF. Interviewees expressed interest in sharing lessons learned and moving toward a model of Impact-based Forecasting.
- 5. Self rating: 4 (Bangladesh WFP) and 5 (Bangladesh RC).

Analysis

What helped Bangladesh to begin to institutionalise FbF?

Strong internal capacity built year on year through practice, combined with strong engagement of multi-stakeholders (Government, NHMS/scientists, humanitarian actors, financial intermediaries). Host of the national TWG for FbF.

Bangladesh RC:

Agreements in place, capacity to implement?

With EAPs and MoUs in place, what are the strategies for scaling up further? How much capacity can be built for implementation?

Continued advocacy and gradual scale-up of implementation. RC and WFP have gradually increased the scale of their operations year on year. Part of it is a matter of time. But advocacy is necessary to get the government on board to take more ownership of FbF. The SOD is a step in that direction, further policy and collaboration would help.

Does FbF help BDRCS for earlier response?

Yes, but there is still room to go in terms of capacity building and dealing with challenges such as short lead times

Do the successful activations, including CERF, help with government advocacy, including with BMD?

Yes, absolutely - the Key Informants listed previous activations as the strongest factors in convincing the government to support FbF.

Bangladesh WFP:

Go beyond WFP's modus operandi - CERF as catalyst?

Does WFP have the ex-ante financing in place for reliable funding of early actions?

They have received funding from the South Korean, German, and Australian governments. Add to that their access to the CERF window. However, there is still work to do to ensure the funding is consistent.

Does WFP have the logistics to go beyond their pre-defined communities?

This is unclear, though they are in the process of scaling up.

Are sector/WFP specific early actions planned in the future?

Unclear if they are sector-specific, but they are working on rolling out assistance in South East Bangladesh.

Will the CERF pilot encourage FbF for other hazards?

Unsure, but they are in the preparatory stage of preparing to scale up to cyclones and landslides, and other stakeholders are working on flash floods. So it looks promising.

What does Bangladesh need to move forward?

- Increased collaboration between the science and humanitarian sectors;
- FbF champions to work in the country and region on advocacy to increase government buy-in
- Seeking additional and consistent sources of funding. Bangladesh is potentially well-placed to seek GCF funding for FbF
- Potential for a regional basket of funding to be created for FbF in South Asia
- Scaling up/replicating cyclone preparedness programme to apply to other hazards
- Moving toward a multi-hazard model, adding in landslides, flash flooding, etc, as the existing FbF pilots gradually scale up
- Moving toward an Impact-based Forecasting model
- Capturing the views and experiences of beneficiaries as evidence; not just quantitative impact data

Literature results

It would appear that there is a solid institutional basis for FbA in Bangladesh. Government policy and guidelines incorporate anticipation through DRR, and the SOD define some responsibilities and actions based on warning periods. However, barriers relate specifically to these as thresholds are generally not defined relative to forecast data. Despite progress with DRR, incentive structures at national and local level are still skewed towards relief activities, often tied up with the relationships of political patronage that dominate the governance landscape in Bangladesh. These structures present a challenge to new approaches to managing disaster risks.

Numerous other documents also highlighted the barriers to scaling up implementation further in Bangladesh. More specific barriers have been highlighted in the Literature review however, in summary those mentioned include:

- Enabler: "Second, a significant FbA mechanism has long been in operation under the Bangladesh Cyclone Preparedness Programme, which defines triggers for preparedness and evacuation based on levels of cyclone alert issued by the Bangladesh Meteorological Department".
- The institutions currently set up are seen as both an enabler (in having allowed Bangladesh to implement FbF to the extent that it has, successfully) but are

also seen as a barrier: "Greater engagement by state institutions and stakeholders responsible for formulating and implementing disaster risk management in Bangladesh. Formal government mandates can present challenges to scaling up early action, as their rules of procedure and legal regulations may influence their ability to finance and take different actions.

- Acting in vain when early actions are taken but the hazard predicted in a forecast does not materialise, and assistance is delivered in advance to people who are then not directly affected by the hazard. Although seen as a problem *"FbA can be useful for building resilience, even if targeting is inaccurate, and can tackle the indirect impacts felt by those close to the disaster"*.
- One of the most significant barriers to scaling up is identified as the resources available (primarily the amount of pre-arranged finance). Engagement of key donors continues but is slow also acting as a barrier.
- This point was quite interesting: "In scaling up FbA, a critical question lies in whether the cost of the forecast itself provides value for money, or whether the same effect can be obtained by providing a regular and predictable early action without the forecast, especially in areas prone to repeated cyclical disaster events. Even more importantly, would the benefits be greater because the response is being undertaken with a greater lead time before a crisis?"

With EAPs and MOUs in place, what are the strategies for scaling up further? How much capacity can be built for implementation?

A movement towards **impact-based forecasting** for FbA although it would appear (from reading some other documents) that this is already coming into place -"Current forecast and warning systems are limited in geographical reach, while data on exposure and vulnerability is not comprehensive. As a result, flood warning thresholds can be imprecise as to the specific areas likely to be affected" (1d). Developing impact-based forecasts for FbA at scale would require much closer collaboration between the national meteorological and hydrological services and other government agencies and actors involved in understanding risk and vulnerability. This will require 'a rethink of the structure of the organization and the way it operates, an expansion of training to strengthen capacity both within the National Meteorological Hydrological Services and with partner organizations and users, and new operational partnerships.

Does FbF help BDRCS for earlier response?

Numerous reports provided highlighted the benefits of having adopted FbF in Bangladesh including a peer-reviewed paper that compares households in Bangladesh that received FbF humanitarian aid (in the form of cash intervention) against those that did not. These included:

- increased the regularity and quality of beneficiary households' food intake.
- reduced the need to take out high-interest loans.
- reduced psychosocial stress in the aftermath of the flood.
- the intervention may have also prevented households from having to make destitution sales of valuable assets when compared to similarly affected households.

Financing Mechanisms - Do successful activations, including CERF, help with government advocacy, including with BMD?

One of the institutional barriers mentioned in 1D was that Fbf had less of an appeal, from a political perspective, than post-event response as post-disaster response "looked better" and could be better used as an opportunity to attract support.

CERF general: There have been two recent **CERF** allocations for rapid response to monsoon flooding in Bangladesh. For this pilot, CERF set aside \$5,339,084 for anticipatory action for monsoon floods in Bangladesh **CERF** will rely on a streamlined application process to ensure that funds are disbursed to UN agencies quickly. This will involve pre-filling and pre-approving project proposals in advance - a barrier to this, "Humanitarian needs due to out-of-the ordinary monsoon flooding in Bangladesh surpass by far the resources available from CERF to meet these anticipated needs. Additional resources are thus needed to scale-up anticipatory action further, including by providing pre-arranged financing".

Does WFP have the ex-ante financing in place for reliable funding of early actions? Does WFP have the logistic to go beyond their pre-defined communities?

The World Food Programme is implementing the FbF approach for floods and has been part of a technical working group together with BDRCS and GRC to jointly advance the research on beneficiary selection and impact analysis as well as to align the FbF strategy with government counterparts.

For the 2020 monsoon flood season, WFP will target 61,500 families in the Jamuna flood plains who are socio-economically poor and vulnerable to flood impacts. With CERF support, 55,500 households will be reached through WFP programming, and an additional 6,000 through sub-granting to RCRC. Through this anticipatory early action cash assistance, WFP is reaching around 6,000 households to enhance preparedness capacity of the flood vulnerable households and to reduce the loss and damages of their lives and assets.

Are sector/WFP specific early actions planned in the future?

Couldn't find this information.

Will the CERF pilot encourage FbF for other hazards?

FbF is already being used for cyclones and has more recently spread to the forecasting of floods - one of the more recent 2020 reports (1a) looks at a pilot project applying Fbf to monsoon flooding on a larger scale.

Stakeholders: Bangladesh appeared to have numerous, well established stakeholders involved in the Fbf projects. Collaboration and communication between these stakeholders has facilitated response - primarily between government agents and the red cross, WFO etc. See literature review for more details.

Forecast System: Has also aided implementation of FbF - this was already implemented through the Cyclone Preparedness Centre which provided a starting ground for "triggers".

1.9. Regional

Stage 5 Scale-up

Interview results

The ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme 2021 - 2025, serves as a common platform and regional policy enabler for disaster management in the ASEAN region. The ASEAN Coordinating Centre for Humanitarian Assistance (AHA Centre) on disaster management is the operational coordination body of AADMER.

"Scaling up Forecast based Financing/Early Warning Early Action (FbF/EWEA) and SRSP with innovative use of climate risk information for disaster resilience in ASEAN", 2019-2021, is a joint ECHO project between FAO, WFP, GRC, and UNICEF. Synergies of FbF/EWEA and SRSP are being explored to increase the reach of the anticipatory approach. The TWG on FbF/EWEA and SRSP is tasked to develop best practices of SRSP, a repository of early actions and a joint roadmap for SRSP and FbF/EWEA. Pilot countries include: Myanmar, Philippines and Vietnam.

The RCCC provides technical assistance, tools and guidance to the region based on a 'demand-driven' model. This has included sourcing funding, developing triggers and developing EAPs for case study countries.

Enablers, Barriers and Pitfalls

Table 12: Region's Enablers, Barriers and Pitfalls

Priority lens	Enabler	Barrier
Capacity	 Knowledge sharing with other regional agencies e.g. African Union, EU, Pacific Islands (AHA) Team of expert scientists support NS and development partners (RCCC) 	 Understanding of FbF concept is limited, in addition to EWEA and SRSP (AHA) Language barrier - less information exchange with non-English speaking countries (AHA) FbF concept is challenging for Government (RCCC)
Stakeholder engagement	 Collaboration with IFRC, Joint Action Plan (AHA) Collaboration with UN OCHRA, WFP, UNICEF (AHA) Mandate from the MS (AHA) 	 Leadership from ASEAN Secretariat to take action on FbF (AHA) Multiple coordination issues for TWG (UNICEF) Reduced Government ownership /accountability, when humanitarians provide (RCCC) Post-disaster institutionalised mindset: failing to change policy and financial regulations (RCCC) Lack of leadership - struggle to get Government and MET agency onboard (RCCC) No 'go-to' specific focal institute for regional FbF advocacy (RCCC)

		 Lack of complementarity between humanitarian agencies e.g. WFP and RCRC Nepal (RCCC) Single hazard approach unhelpful when the Government is facing multiple hazards (RCCC) 	
Evidence and data	 ASEAN Declaration on Drought (AHA) Vietnam risk and vulnerability assessment: National Disaster Preparedness Baseline Assessment (AHA) 	• Field-based evidence not converted to advocacy messages effectively (RCCC)	
Financing and administrative systems	 FbF in AADMER Work Plan 2012-2025 (AHA) Stockpiles in regional warehouses (AHA) Climate financing traction e.g. FAO Nepal and GCF, ARC programme (RCCC) 	 Siloed style work practice limits opportunities between disaster management and finance (AHA) Integration with SRSP (RCCC) Collaboration at national and regional level with climate finance actors linking AA and risk transfer (RCCC) 	
Forecasting and science	N/A	 Data accessibility, quality and availability - rely on MS to provide Targeting larger geographic areas for scale and aggregated, reliable forecast information (RCCC) 	
Pitfalls	The TWG has ambitious deliverables irregular meetings and agendas. This of COVID and has seen some frustrat	within a limited two-year frame with s is additionally challenging in the event ions manifest.	

Self-rating: 1.5 AHA Centre

Analysis

ASEAN: integration into AADMER Work Programme 2021 - 2025

Note: These questions were answered in part. KIIs had limited knowledge of the financing aspects of disasters, the link between forecasting and finance for the next cycle AADMER work program and the early action mindset)

Shared understanding of risk among ASEAN Member States(MS) and humanitarian actors will allow for coordinated response

FbF advocacy and integration into AADMER, ASEAN's policy backbone, encourages a more anticipatory mindset in other areas too

How does ASEAN / AHA Centre see its mandate or coordination function for FbF across MS?

The AHA Centre's mandate is derived from the AADMER - the primary agreement on disaster management, signed back in 2005. AHA centre was established in 2011 to coordinate collaboration between MS on all disaster cycles including DRR. In the first five years of the AHA centre, focus was on response operations, rather than DRR. In

the current trajectory, the AHA Centre is wanting to contribute to other parts of the disaster cycle, including the recovery space, and parts of disaster mitigation, such as FbF. Our work in the region in terms of DRR and emergency response is wide-ranging and our core functions include: 1) Coordination 2) Disaster information management 3) Knowledge management 4) Resource management. Our understanding is that FBF fits with disaster information management and the concept of how it works is part of knowledge management. The financing element is the one the AHA Centre is interested in as regionally, financing for emergency operations is a big challenge for us. So FbF could help in responding to slow onset disasters. Also the AHA Centre is interested in looking at response to climate change. That is something else we are wanting to learn from other partners, whether that's something we can utilise.

What DRF mechanisms can ASEAN offer and does it promote a shift towards exante financing?

AHA Centre is in the process of developing the next cycle of the AADMER work program. There is some focus on risk management around improving forecasting for response. There is nothing yet around the connections between forecasts and financing, this is not part of the work program. However we consult with our partners such as IFRC who will advocate for this.

For DRF mechanisms: the AADMER fund, which is a voluntary pool of funds managed by the ASEAN secretariat used to fund our response cooperation; the ASEAN Emergency Response and Assessment Team which can be deployed to any ASEAN country upon request for free (funds are not being replenished by MS so there is little funding left); there is a specific working group in ASEAN on recovery (AHA Centre is not engaged in this); the Joint Task Force on Humanitarian Assistance and Disaster Relief - the JTFHADR which meets twice per year and lead by ASEAN Committee on Disaster Management (not very productive meetings; risk and vulnerability assessments and profiles on national and subnational levels e.g. Vietnam is complete; ARMOR publication 'bridging science and decision-making'; stockpiles in warehouses (Malaysia, Thailand, Philippines); a unified information monitoring system.

The AHA Centre is still in the early stages support related to recovery. The first stage has been the ASEAN village in Indonesia after the Sulawesi earthquake, 2018.

On ex=ante financing, this is difficult because disaster risk finance is mostly covered under a different sector under ASEAN. We have three pillars in ASEAN: 1) sociocultural, 2) political security, and 3) economic. The disaster management sector comes under the sociocultural pillar, and finance is under the economic pillar. It is difficult for these sectors to talk to one another because they are under different pillars. We do have the ASEAN DRFI, Disaster Risk Financing Insurance programme, which is led by the ASEAN secretariat.

The biggest challenge in ASEAN is a siloed approach to disaster management - every sector has its approach regarding disaster response, science and finance. It can be difficult to communicate between sectors because they sit in different ministries. The

FbF approach needs a more comprehensive approach to go beyond siloes, connecting the finance, science, disaster risk management sectors. This is still a work in progress in ASEAN

TWG: regional tools for country contexts

Note: These questions were not responded to. KIIs expressed frustration with the FbF approach on a number of levels, though saw engagement and alignment with FbF and AA once EAP policy is passed within country governments. Frustrations included:

- 1. The TWG is limited as a two-year program and is viewed as inactive and unproductive beyond the TORs, there have been no meetings as a TWG working group under the joint ECHO Proposal, it felt imposed.
- 2. KIIs supported ASEAN to develop regional guidelines on risk-informed social protection they have not yet seen the guidelines which would need to be approved at the ministerial level, so it may be some time before these tools are ready.
- 3. So far we are aware of FbF small-scale triggers and cash transfer, otherwise it seems to be all based on housing and evacuations in Bangladesh how can FbF trigger cash at a large-scale?
- 4. The FbF pilots from WFP and others, the degree of government engagement and use of government DRM systems, varies dramatically.
- 5. There is a missing link between climate and adaptation as the financing system as all humanitarian and FAO funding, there is no public money invested.
- 6. The focus needs to be more on shock responsive systems strengthening for government and building accountability, rather than direct implementation this creates tension e.g. Philippines.
- 7. What should happen is a move toward institutionalisation by all actors e.g. Bangladesh and the CERF is a good example of this.
- 8. EAP is needed for an agreement to have social protection as a response. The KIIs are working with the WB and IFIs on public finance management (PFM) and how to best manage the budget for the poorest.

An outcome from this interview is likely of interest to IFRC to follow-up: The KIIs are running a landscape study on disaster risk finance and social protection.

What regional technical tools should the TWG develop for adaptation by countries?

What elements of FbF are transferable across hazard and country contexts?

How can related approaches such as SRSP be used to scale-up FbF?

How does regional coordination help with country-level implementation?

What does the region need to focus on to move forward?

Literature review

Two presentations related to "Scaling up Forecast based Financing/Early Warning Early Action (FbF/EWEA) and Shock Responsive Social Protection (SRSP) with innovative use of climate risk information for disaster resilience in ASEAN."

Timelines are outlined in the two-phased project from 2017-2019 (pilot) and from 2019-2021. The driver here is that FbF/EWEA actions are being viewed as part of transformative national preparedness/response system or shock responsiveness elements. rather than developing the social protection system itself.

Myanmar, Philippines and Vietnam are listed as the case study countries. Results and activities pages provide information for each of the countries, in addition to a regional result. Stakeholder engagement is outlined (e.g. FAO, ASEAN Secretary), in addition to synergies with AADMER 2021-2025. A timeline is provided at the end showing an Interim Report due at the end of November 2020.

Annex VI: General observations and disclosures

General observations and disclosures from the study are presented below and provide insights into the factors that shape the results.

Literature review

Literature items were provided by the RCRC. This was complemented by additional secondary sources to fill gaps.

Table 13: Literature provided by the RCRC

Stage	Literature category	# of items
	Indonesia	1
1	India	2
	Myanmar	3
2	Nepal	6
2	Vietnam	12
3	Mongolia	8
	Philippines	7
4	Bangladesh	11
5	Regional	3
	General FbF	11

- 1. **Bias:** May manifest when more information is available in English for one country versus another.
 - However much depends on the quality and content of the literature and given some additional desktop analysis was undertaken, combined with the interviews, it is unlikely that this impacted the study overall.
- 2. **Documentation:** It is a reasonable assumption that literature items would become more prevalent from Stage to Stage. I.e. accumulation of: feasibility studies, ROIs, impact studies, lessons learnt, published articles, coordinated efforts / regional plans and templates etc.
 - $_{\odot}~$ This was generally the case with the exception of the Philippines and the Region which both exhibited gaps in FbF documentation.
- 3. **Review versus level of effort:** The density and length of literature provided meant that scanning was adopted to meet the study timeframe. Key takeaways

that matched the two research questions, and additional questions posed at the kick-off meeting, were recorded.

 \circ $\,$ The scanning process was adequate to meet the agreed scope of work.

Interview series

- 4. Interview fatigue: Interviews were held towards the end of the Key Informant's working day, with 13-15 question posed during 1-1.25 hours. It is not unusual to see a decreased rate of return after 45 minutes when fatigue sets in.
 - One interview was split into a two-part event, which worked effectively for the key informant.
 - $_{\odot}~$ In the future, interviews could be capped at 10-12 questions to ensure best use of all participant's time and ROI.
 - Despite the assumption of fatigue, Key informants were generally enthusiastic and happy to contribute to the study.
- 5. **100% Active participation:** No delineation in stakeholder engagement was evident. Key informants were candid and generally open to learning, to learning from other country's mistakes, and to sharing with the region to support FbF progress.
 - This community demonstrated a strong desire to learn, share and constructively criticise FbF institutionalisation.
- 6. Interview records: Typed transcripts backed up by recordings was a very useful approach.
 - \circ Interview recordings served a value-add purpose in revisiting material to populate the transcripts.
 - Reception was lost in part, though on the whole good quality recordings were captured with the full consent of Key Informants.
- 7. One Key Informant per question: 16 interviews were completed with 36 key informants..
 - The opportunity to capture so many potentially diverse viewpoints is valueadd, especially given the different roles and insights Key Informants have i.e. Head quarter RCRC compared to Chapters; or National RCRC partnering, such as Danish and Nepal RCRC, or German and Bangladesh RCRC; or Programme Advisors and Technical Coordinator roles as in India RCRC.
 - It was challenging to speak with additional stakeholders per call and per question. The value is clear in having multiple roles participate - however, agreeing one role answer a specific question is likely to provide a gain in efficiencies and avoid interview fatigue.
 - 8. Information deficit: Interviews transcripts ranged from 5 to 8 pages in. Clearly a rich databank of information from the series. Despite this, it is evident that some gaps remain.

- \circ $\,$ Some information gaps in terms of clear, definitive responses to each and every question asked.
- Explicit emerging patterns from country context to country context, or 'stage' to 'stage' are not necessarily conclusive.
- More direct contact with the countries either through dialogues or surveys, is necessary to build and draw these conclusive links. I hour interviews with multiple stakeholders is insufficient given the variability across political, geographical, social, financial, legislative and technological landscapes.

Stages and Priority Analytical Lens Framework

The RCRC adopted a five-staged approach combined with five priority analytical lenses to examine FbF institutionalisation. This study adopted this framework to investigate FbF institutionalisation, with the following observations.

Stages

- 9. Chronological transition: Numerically we expect to see transition from stage to stage resulting in a strengthening of FbF through all systems and processes. Generally this pattern has emerged. No country from our analysis had an FbF system that was fully scaled-up for multiple hazards and institutionalised within government. Rather RCRCs are working in partnership with governments to pilot and scale up FbF initiatives. In terms of RCRC proposed stages, we made the following observations:
 - Stage 2 Testing to Stage 3 Making the case: there is a level of overlap in practice whereby while undergoing testing, evidence is being collected to validate what works and does not work and what are the cost and impact implications. If testing is robust and knowledge products justifying the pilot are built concurrently to support the approach, then it may be plausible to combine Stages 2 and 3. A scale-up would be the logical next step. It may be that some pilots during the Testing Stage are at a more advanced level than others as a point of differentiation (i.e. early and late stage pilots with successful late stage pilots having the correct levels of support in place for scaling up).
 - Stage 3 Making the case: is understood to mean building a compelling case to national government and implementing partners for an FbF mechanism. However advocacy must be taking place at all stages. This is especially true in terms of the sustainability of FbF mechanisms which should ideally move from a humanitarian funded operation to a government owned and funded operation. Currently seed financing of national disaster management comes from the humanitarian sector, therefore building and making a case to

Government for buy-in is highly relevant. However, as Government start to take greater accountability and invest in FbF, this step becomes less about building a case, and more about good information management knowledge product development and information sharing.

 Stage 5 Changing the system: conveys a current focus on regional bodies to take the last step and support institutionalisation through common frameworks and systems. This role is valid, however regional exchange between national and subnational levels should be facilitated from Stage 1 in order to leverage experiences and to accelerate FbF progress.

Priority analytical lenses

The five priority lenses are useful, however reconfiguring these or extending the lenses to incorporate key findings on advocacy and policy/Government relations, would be beneficial to furthering FbF work.

- 1. Capacity
- 2. Stakeholder engagement
- 3. Evidence and data
- 4. Financing and administrative systems
- 5. Forecasting and science.
 - 10. Extend lenses: We faced limitations when looking to categorise several enablers and barriers within the five lenses, as a poor fit and lack of representation emerged. Further delineation is necessary for advocacy and policy/government priorities.
 - Advocacy: requires a different set of strategies, plans, activities and commitments and is not currently represented in the existing five priority lenses. Advocacy deserves its own lens as the issues for advocacy are different and nuanced to capacity and stakeholder engagement see examples below.
 - Enablers and advocacy: ill-fitting enablers have been categorised into the Stakeholder engagement and Capacity lenses for the purpose of our study. For example, 'advocacy of FbF support from Government'; 'advocacy of FbF from RCRC to Government'; as well as general 'advocacy of FbF', are not properly represented by the existing five lenses so have been classed under stakeholder engagement. Similarly, the enabler 'advocacy for understanding of FbF' has been categorised under Capacity.
 - Barriers and advocacy: an ill-fitting barrier has been categorised into the Stakeholder engagement lens for the purpose of our study. For example, *'Institutionalised Emphasis on Post-disaster Response'* is not properly represented by the existing five lenses so has been classed under Stakeholder engagement.

- Policy or Government Relations: requires a different set of strategies, plans, activities and commitments and is not currently represented in the existing five priority lenses.
- **Barriers and Policy / Government Relations:** ill-fitting barriers have been categorised into the Stakeholder engagement and Capacity lenses for the purpose of our study. For example, *'Lack of Government Leadership'*; and *'Shifting Political Environment'*, are not properly represented by the existing five lenses so have been classed under Stakeholder engagement.. Similarly, the barriers *'Post-disaster Response Mindset Adopted'*; *'Reputational Risk of Failed Implementation'*; and *'Restrictions related to Covid-19'*, have been categorised under Capacity.

Self-rating of FbF progress

A self-rating was provided by the KIIs in terms of their sense of achievement towards FbF institutionalisation. The rating was requested post-interviews by email. With the exception of Mongolia FAO, all KIIs responded. The ratings collected are shown in the Figure below. This was an informal exercise with no scientific validity, however, selfratings provide an insight into national perceptions and a type of crude benchmarking.



Figure 2 Diagram of institutionalisation self-ratings

11. National perceptions of institutionalising FBF: A range of results have been provided from 1.5 to 7 on the FbF institutionalisation scale.

- Self-rating does not necessarily correspond to the five stages with cases. E.g. the ASEAN AHA Centre is rated as a beginner when we might perceive it to be more progressed on a spectrum of FbF institutionalisation.
- Multiple KIIs within the same country rate the country's FBF progression slightly differently. This is to be expected given the exercise is based on perception. In this case we see Red Crescent in Bangladesh and Red Crescent in Vietnam rating higher than the WFP and GRC respectively. On the other hand we see Philippines WFP rating slightly higher than the Red Crescent in the Philippines. There are no conclusive results as the sample is too small.
- As FbF institutionalist is progressed, we would see the RCRC and implementing partners more aligned.
- Those RCRCs that are furthest along the FbF institutionalisation scale in reality e.g. Philippines and Bangladesh, have a greater sense of awareness as to how far they have come, and how much additional work they must achieve to reach a point of institutionalisation. This perception was supported in the interviews.

Annex VII: NVivo data analysis and coding

Table 14 Data codes from NVivo analysis

Name	Description	# of interviews	# of references
Enablers	Refers to all of the capacities, resources and other components that facilitated the initial implementation of FbF AND the further progress towards institutionalisation. Refers directly to RQ1	16	226
Favourable Access to Capacities	References made to the availability of resources, finance, human skills or technical capacities as contributing to the implementation of the FbF concept.	16	68
Functioning EWS	Specific references made to the high quality and accuracy of Early Warning Systems as contributing to FbF implementation. Relates to all the technical components involved in the system (e.g. triggers, data sets, digitalisation).	13	27
Accurate Forecasting	References made to the EWS Forecast accuracy, reliability and communication as contributing to the implementation of FbF.	12	16
Detailed Data on Vulnerable Areas	References made to the availability of data or high-quality data as contributing to the accuracy of the EWS and thus, the implementation of FbF.	5	8
Developed Understanding and Communication of Forecasts	References made to the effective delivery of forecast systems to various regions, along with the level of skill required to interpret these, as contributing to the successful implementation of FbF.	3	3
Access to Finance Resources	Any mention to large amounts or access to funding as contributing to the implementation of FbF.	12	18

Name	Description	# of interviews	# of references
Other Technical Resources	Technical capacities identified as an Enabler that fits outside of the EWS technical capacity node. Can relate to language or computer resource issues etc.	7	12
Skilled Human Resources	Refers to the availability of volunteers or human skill levels as contributing to the implementation of the FbF concept.	5	11
Established Multi-stakeholder collaborations	References made to collaborations or working together of different agents or stakeholders as contributing to the successful implementation of the FbF concept.	15	96
Other Stakeholders	Reference to stakeholder collaborations, categorised outside of the MET Agency, Government or Red Cross, as contributing to the successful implementation of the FbF concept.	10	21
With the Government	Specific reference made to collaborations with the Government as contributing to the successful implementation of the FbF concept.	14	27
With the National Disaster Agency	Specific reference to the collaboration of the National Disaster Agency and other agents as contributing to the successful implementation of the FbF concept.	10	16
With the MET Agency	Specific reference to the collaboration of the MET agency with other agents as contributing to the successful implementation of the FbF concept.	13	27
With the Red Cross	Specific reference made to the Red Cross and collaborations with other agents as contributing to the successful implementation of the FbF concept.	10	21
Sharing of FbF Studies	References made to the sharing of information on FbF as an enabler for implementing, advocating for or facilitating FbF within a country.	14	27
Effective Monitoring and Evaluation	Specific reference made to the amount of studies that monitor, analyse and evaluate the implementation of FbF enabling evidence to be provided to aid in the further implementation of FbF.	10	16

Name	Description	# of interviews	# of references
Established Dialogue Platforms	Specific reference made to the set-up and availability of sharing platforms (where agents can view or access information - both physically and virtually) as contributing to the implementation of FbF.	7	11
Strong Advocacy of FbF	Any mention to a high level of support, engagement or accountability from stakeholders or agents, for the FbF concept.	9	29
From RC to Government	Specific reference to a high level of support, engagement or accountability from the Red Cross to the Government as contributing to the implementation of FbF.	6	10
Support from Government	Specific reference made to a high level of support, engagement or accountability from the government for the FbF concept as an enabler to implementation.	6	15
Understanding of FbF	A good level of understanding of the processes, the mechanisms and the desired outcomes of FbF that allow the effective implementation of the concept.	3	4
Feasibility Studies to Identify Gaps	References made to the act of performing studies prior to the implementation of FbF to identify potential gaps.	4	6
Barriers	Refers to all the constraints, complexities and problems relevant to the initial implementation of FbF AND further progress towards institutionalisation. Refers directly to RQ1	16	216
Lack of Capacity	References made to a lack of resources, finance, human skill or technical capacities as a barrier to FbF implementation.	15	93
Inaccuracy of EWS	Specific references made to the poor quality and inaccuracy of Early Warning Systems as a barrier to FbF implementation. Relates to all the technical components involved in the system (e.g. triggers, data sets, digitalisation).	14	40
Delays with Forecasts	References made to the EWS Forecast accuracy, reliability and communication as a barrier to FbF implementation.	9	12

Name	Description	# of interviews	# of references
Difficulty in setting up Trigger	References made to the current set up, or lack of "Triggers" in place as a barrier to FbF implementation. Could refer to problems with communication, accuracy or the methodologies adopted.	6	7
Lack of Available Data Sets	References made to a lack of available data or high-quality data as a barrier to a more accurate EWS.	10	18
Lack of Skill Interpreting Forecasts	Refers to a lack of ability in being able to interpret and communicate the forecasts as a barrier to a more accurate EWS.	2	3
Lack of Finance Resources	Any mention to a lack of funding or access to funding as a barrier to FbF implementation. Can refer to any agent.	8	21
Lack of Human Resources	Refers to a lack of available volunteers or human skill levels as a barrier to the implementation of FbF.	6	8
Other Technical	Technical capacities identified as a barrier that fit outside of the EWS technical capacity node. Can relate to language or computer resource issues etc.	10	19
Transport and Logistics	Specific mention to logistical issues associated with the countries geography or transport infrastructure as a barrier to FbF implementation.	3	5
Institutionalised Emphasis on Post-disaster Response	Any reference made to a current focus on post-disaster response within countries, agents, systems set up as a barrier for implementing FbF.	11	20
Mindset Adopted	References to country or agent mindset, attitude or focus towards post-disaster response.	6	8
Set Up of Finance Mechanism	References directly counting the current set up of financial mechanisms as a barrier to FbF implementation - as a result of a focus on post-disaster response.	8	12
Lack of Government Leadership	Any mention to a lack of support, engagement or accountability from the government for the FbF concept as a barrier to implementation.	9	15

Name	Description	# of interviews	# of references
Lack of Understanding of the FbF Concept	A failure to understand the processes, the mechanisms and the desired outcomes of FbF as a barrier to its implementation.	9	12
Early Stage of Implementation	References made to the early stage of implementation of FbF as a barrier e.g. restricting the amount of monitoring and evaluation that can be performed.	8	14
Lack of Co-ordination	Any mention to a lack of co-ordination - that is, a lack of communication between different agents to implement effectively - as a barrier to FbF implementation.	8	17
Between Humanitarian Agencies	A specific mention to a lack of co-ordination between humanitarian stakeholders (red cross, FWO etc.) as a barrier to the implementation of FbF.	2	3
Between Other Stakeholders	Specific reference made to a lack of co-ordination between stakeholders that fit outside of the Government, MET or Humanitarian sector. May also refer broadly to co-ordination between all stakeholders.	4	10
With Government	A specific mention to a lack of co-ordination between Governments of a National Society (regional, local levels and with other stakeholders) as a barrier to the implementation of FbF.	2	3
With MET Agency	A specific mention to a lack of co-ordination between the MET agency as a barrier to the implementation of FbF.	1	1
Lack of Available of Information on FbF Practice	References made to the lack of information available on FbF as a barrier for implementing, advocating for or facilitating FbF within a country.	7	55
Lack of Dialogue Platforms	Specific reference made to a lack of sharing platforms (where agents can view or access information - both physically and virtually) as a barrier to FbF implementation.	5	9
Lack of Monitoring and Evaluation	Specific reference made to a current lack of studies that monitor, analyse and evaluate the implementation of FbF as a barrier. Refers to a lack of available evidence to support FbF implementation.	5	9

Name	Description	# of interviews	# of references
Restrictions related to COVID-19	References made to the recent Covid-19 Pandemic as a barrier for the implementation or scale-up of FbF.	6	12
Delayed Collaborations	Specific reference made to delayed collaborations (between different stakeholders) as a result of Covid-19.	4	8
Delayed Pilot Studies	Specific reference made to the delayed implementation of pilot studies or feasibility studies as a result of Covid-19.	4	4
Reputational Risk of Failed Implementation	References made to a reluctance to implement FbF due to the risk of a failed implementation e.g. the event does not hit in the location or at the intensity initially predicted by the forecast system.	4	6
Government Restrictions on Stakeholder Involvement	Any mention to restricted stakeholder involvement in implementing FbF, as a result of the government.	3	17
Shifting Political Environment	References to changes in government structure, positions or parties as a a barrier to FbF implementation.	3	3
Lack of Collaboration	References made to a lack of collaboration - that is, the working together of two or more agents to achieve a desired outcome - as a barrier to FbF implementation.	2	3
With the MET Agency	A specific mention to a lack of collaboration with the NS MET agency as a barrier to the implementation of FbF.	2	2
Future	Refers to the future factors (e.g. capacities, policies, methods) required for the implementation or further scale up of FbF. Relates to RQ2.	16	191
Capacity Building	References made to the need for the availability of resources, finance, human skills or technical capacities as being required for the further implementation of the FbF concept.	15	58
Forecast-based Financing Case Study: Asia Pacific - Annex

Name	Description	# of interviews	# of references
Building Government Capacity	Specific reference made to capacity building (increasing skills, resources available etc.) within the government.	8	15
Development of EWS	Specific references made to the need to build high quality and accurate Early Warning Systems. Relates to all the technical components involved in the system (e.g. triggers, data sets, digitalisation).	11	28
Development of the Trigger	Specific reference made to the need for improving the trigger currently in place to improve the implementation of FbF.	5	7
Impact-based Forecasting	Specific reference to moving towards and adopting Impact-based Forecasting to further scale up and facilitate FbF implementation.	4	5
Improvement of Data Sets Used	Specific reference made to the improvement of the data used in EWS as further facilitating the implementation of FbF.	9	16
Human Resources	Refers to the building of volunteer capacities or human skill levels to further facilitate the implementation of FbF.	3	5
To Access Funding	References made to the further need of large amounts or access to funding as contributing further to the implementation of FbF.	9	10
Collaborations with Stakeholders	References made to further collaborations or working together of different agents or stakeholders as contributing to the successful implementation of the FbF concept.	13	39
Other Stakeholders	Reference to stakeholder collaborations, categorised outside of the MET Agency, Government or Regional, as contributing to the further implementation of the FbF concept.	7	13
Regional Collaboration	Specific reference made to the need for collaborations between different countries or regions to contribute to the further implementation of the FbF concept.	3	5

Forecast-based Financing Case Study: Asia Pacific - Annex

Name	Description	# of interviews	# of references
With Government	Specific reference made to collaborations with the Government and other stakeholders as contributing to the further implementation of the FbF concept.	10	11
With the National MET Office	Specific reference to collaborations between the MET agency and other agents as contributing to the further implementation of the FbF concept.	5	7
Additional Evidence, Resources and Platforms	References made to the need for additional monitoring, analysis and evaluation of FbF projects in countries where the concept has been implemented AND the establishment of platforms where this material can be shared between stakeholders.	12	44
Best Practice Documentation	References made to the need for additional documentation that highlights the benefits of the FbF concept and how this has been effectively implemented in various countries.	6	10
Dialogue Platforms	References made to the need for more platforms where information on FBF can be shared (both physical spaces and virtual).	7	17
Gaps and Needs Testing	References made to the need for additional testing to identify barriers relevant to the implementation or scale-up of FbF, and the necessary factors needed to be able to overcome these.	8	17
Advocacy of Anticipatory Actions	Any mention to a required high level of support, engagement or accountability from stakeholders or agents, to further implement the FbF concept.	11	22
Multi-Hazard Adoption	Any mention to integrating the design of FbF with multi-hazards (that is, applied to more than just one hazard; typhoons, droughts, flooding etc.) as facilitating the further scaling up of FbF.	10	18
Integration of FbF with other concepts	Any mention to the combining of FbF with other concepts or approaches, to further facilitate the implementation of the concept.	4	4
Standardised Approach to FbF Implementation	References made to the need a single approach of FbF that is applicable and relevant to all contexts.	3	4

Forecast-based Financing Case Study: Asia Pacific - Annex

Name	Description	# of interviews	# of references
Simplification of EAP Process	References made to complications involved with the EAP process (e.g. administrative) and the need for this to be simplified to enable the further scale-up of FbF.	2	2

Annex VIII: Results symposium

A virtual Results Symposium took place on 30 September 2020, with the following agenda:

- 1. Research scope and objectives;
- 2. Methodology;
- 3. Key results;
- 4. Future direction of FbF;
- 5. Discussion and conclusion;
- 6. Next steps.

A virtual Results Symposium took place on September 30, 2020, with 32 stakeholders registered, of which 15 stakeholders participated representing seven of the eight countries interviewed.

Stakeholder feedback

The Symposium shared initial aggregated results from the analysis and sought the feedback of stakeholders.

Overall, stakeholders indicated in their comments that the results reflected their experiences, and requested a copy of the presentation. There was not an extensive number of questions asked by stakeholders. However comments were made about the difference between EAPs and SOPs, in addition to how to support scaling of Non-food Items (NFI) during anticipatory action.

PfR provided feedback that the results were aligned with what they viewed as some of the main barriers and enablers, Furthermore the RCRC asked questions about how this work would fit in the larger FbF conversations taking place and the usefulness of disaggregated results combined with a clear analytical framework to delineate the logical next steps to take at each stage of institutionalisation.

Poll results

The Symposium included three polls, asking participants to select the most important barriers and enablers of institutionalising FbF, as well as how to improve access to finance for early action. The figures below indicate the number of votes received for each answer in the polls.

In the Poll 1, the three *most important actions to improve access to finance for early action*, selected by respondents included:

- "enshrining pre-positioned disaster financing in law";
- "mobilising new multilateral funds";

• "receiving technical assistance to develop EAPs".



Figure 3 Results Symposium Poll: Access to Finance

In Poll 2 the four *most important factor to enable institutionalisation of FbF*, selected by respondents included:

- "selected high-level political championing";
- "equally: capacity-building; coordination and knowledge-sharing; and generating evidence".



Figure 4 Results Symposium Poll: Enablers

In Poll 3, the two *main barriers to overcome in institutionalising FbF*, selected by respondents included:

- "buy-in from the government";
- "capacity of government stakeholders".



Figure 5 Results Symposium Poll: Barriers