



Scoping Study on Forecast-based Financing (FbF) in Myanmar

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Executive Summary

There is significant potential for forecast-based action in Myanmar. Among available forecast data, riverine floods, cyclones, and heatwaves may be of interest for a pilot. Most interviewees were focused on flood events, as these are particularly common and much of the DRR programming or technical support to the government has been focused on enhancing flood forecasting and preparedness. Drought did not emerge as a major priority amongst interviewees, so it may be worth visiting the DMH Drought Monitoring office in Mandalay in the upcoming FbF Feasibility Study to learn more.

Government stakeholders at national and township levels admitted that early warning information is often difficult to interpret, as it is presented in a scientific format and lacks the granularity of detail necessary to understand specific impacts. For riverine floods, informal early warning systems exist, which Village Authorities admitted to being more reliable than official forecasts disseminated through the Department of Meteorology and Hydrology. At the Township level, the General Administration Department (GAD) emerged as a key stakeholder for mobilizing response and potential early actions, including the identification of beneficiaries. However, early action projects will need to focus on improving the linkages between township-level authorities and village-level authorities, as this is where information is not communicated in a timely or digestible format, preventing effective early action.

Even when useful forecast information is received, the knowledge of effective early action is very low amongst government stakeholders, who did not yet consider other early actions besides evacuation. The response mindset of humanitarian actors in country would need to shift to allow for anticipatory actions. As UN partners begin Early Warning / Early Action and Shock Responsive Social Protection projects under the ECHO-funded FbF/EWEA and SRSP project, there is opportunity for a concerted effort for national-level advocacy on early action.

The ECHO-funded FbF/EWEA project is an opportunity to develop partnerships that could enable a much stronger FbF approach. The UN partners in the project – UNICEF, WFP, and FAO – are keen to collaborate with MRCS. For instance, a forecast-based financing initiative could consider a two-pronged approach: a RC/RC managed approach in an urban context or along a specific river basin aimed at addressing flooding or heatwaves. The second approach could be focused on a conflict-affected setting using the same modality as a UN partner working in the area, such as UNICEF's Shock Responsive Social Protection programme. For the latter, this would generate RC/RC-wide learning about how early action can be done in conflict-affected contexts, and help UNICEF's SRSP to be more anticipatory. It would also benefit from economies of scale from partnering with UN organisations that already have collected data about vulnerability and exposure and tested delivering cash in difficult-to-reach contexts. The former would enable MRCS to test a conventional FbF approach, learning from other projects in the region like Vietnam's heatwave FbF project or build on national-level initiatives to map out flood risks and improve flood response.

Critically, however, MRCS and PNS must invest into staff capacity and advocacy to build ownership of the FbF concept and ensure that MRCS staff are not overburdened with the addition of FbF. Ideally, in

the medium to long-term, FbF should be mainstreamed into programmes rather than being perceived as a distinct activity. Developing Early Action Protocols and linking these with MRCS' existing SOPs is a first step in this direction.

<p>Strengths</p> <ul style="list-style-type: none"> • MRCS' close relationship with critical government ministries such as DDM and DMH allows easier access to relevant data • Government ministries work on tools to assess vulnerability and exposure, such as MUDRA • MRCS has financing tools available (EMF, CDEF) that could easily be adapted to an anticipatory approach • MRCS is the default cash training agency in Myanmar • MRCS has good expertise for response actions for the main hazards which can be adapted to early actions 	<p>Weaknesses</p> <ul style="list-style-type: none"> • MRCS staff with the necessary technical capacities • Current mindset of most actors, including at the community level, is response focused • More advocacy with government ministries for anticipatory action is needed
<p>Opportunities</p> <ul style="list-style-type: none"> • Risk analysis tools such as MUDRA, PRISM will become available in a useful timeframe (this & next year) • GAD acts as a central ministry for EWS and DRM and could provide the necessary access to beneficiary lists • Build on informal early warning systems at the community level • A generally favourable operating environment for anticipatory action, including coordinated efforts by UN partners • 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 	<p>Threats</p> <ul style="list-style-type: none"> • Lack of decentralization of finance inhibits rapid action for FbF

Abbreviations

ADB	Asian Development Bank
ARC	American Red Cross
CVA	Cash and Voucher Assistance
CWG	Cash Working Group
DAN	Disaster Alert Notification
DRC	Danish Red Cross
DMH	Department of Meteorology and Hydrology
DREF	Disaster Relief Emergency Fund
EAP	Early Action Protocol
ECHO	European Civil Protection and Humanitarian Aid Operations
EMF	Emergency Management Fund
EWEA	Early Warning Early Action (related to ECHO project)
EOA	Ethnic Armed Organizations
EOC	Emergency Operations Centre
EOM	Emergency Operations Manager
EWEA	Early Warning Early Action / Forecast
FAO	UN Food and Agriculture Organisation
FbF	Forecast-based Finance
FRC	Finnish Red Cross
GAD	General Administration Department
GoM	Government of Myanmar
GRC	German Red Cross
IFRC	International Federation of the Red Cross
MEB	Minimum Expenditure Basket
MRCS	Myanmar Red Cross Society
NOAA	National Oceanic and Atmospheric Administration
OCHA	UN Office for Coordination of Humanitarian Affairs
PNS	Partner National Society
RC/RC	Red Cross Red Crescent
RSMC New Delhi	Regional Specialized Meteorological Centre, branch of the Indian Meteorological Department that focuses on cyclones
SMIS	Social Management Information System
SOP	Standard Operating Procedure
USAID	United States Agency for International Development
WFP	UN World Food Programme
WMO	World Meteorological Organization

Methods

This report outlines the findings of an FbF scoping study, which aimed to identify stakeholders working in forecast-based actions, high potential areas for a future feasibility study, and provide initial recommendations.

The scoping study was conducted jointly by Raymond Zingg (IFRC Regional FbF Advisor), Florence Pichon (independent consultant), and Lisa Williams (AmCross Cash Advisor) in the frame of the MRCS-GRC project “Enhancing emergency response capacities and disaster preparedness of urban communities in Yangon, Myanmar”, with funding from the German Government – Federal Foreign Office (FFO GP I).

In-country interviews and field visits were conducted over 4 October 2019 - 11 October 2019, consulting township level administrators, village authorities, RC volunteers, and Government stakeholders in Dagon Seikkan in Yangon Region, Bago in Central Myanmar, Naypyidaw (DMH, EOC, DDM) and partners (MRCS, IFRC, GRC, UN FAO, WFP, UNICEF, Christian Aid, etc.) (as per Annex No 5). This study could not have been completed without the engagement of MRCS and the presence and support of MRCS Disaster Management Deputy Director Daw Moe Thida Win and the Disaster Management Department.

The scoping study was conducted after the Exchange Workshop on FbF from 1 to 3 October 2019 in Yangon with participation from MRCS, IFRC and RCRC in-country partners as well as FbF practitioners and representatives from the Philippines and Vietnam. The scoping study was also planned as a precursor to a more extensive feasibility study, and will help guide considerations for the EWEA/FbF Feasibility Study planned jointly by RCRC / UN Agencies under the ECHO-funded FbF/EWEA and SRSP Project in 2020.

Background on FbF

Forecast-based Financing (FbF) (also called Forecast-based Action/FbA) is a mechanism that uses climate and weather forecasts to trigger timely humanitarian action, before a hazard hits the exposed population. These actions are automatically funded when the triggering forecast is released.

Forecast-based action has been progressively developed since 2008. It began with several bilaterally funded pilot projects, which established an evidence base for how to design and implement FbF systems. The lessons, best practices and recommendations from these projects led to the establishment of a central pool of funding as part of the DREF, whereby national societies can develop FbF Early Action Protocols (EAPs) to receive funding to implement activities in advance of an anticipated disaster.

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. The Myanmar feasibility study planned for early 2020 will offer possibility for the Myanmar Red Cross to access FbA by the DREF if FbF is deemed feasible in Myanmar and an EAP is developed and validated.

Overview: Early warning information and early actions

Connecting early warnings to early actions is key for effective forecast-based anticipatory action. Early warnings for floods are the most well developed in Myanmar and were frequently mentioned in township to national-level interviews. Despite the wide-spread 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.

In Myanmar, early warnings are disseminated down to the township level through multiple channels in parallel, in a relatively top-down manner. We focused on the information that is filtered down to the level of the Village Administrator and Township Authorities, who will be relevant focal points for FbF as they are currently mandated to evacuate villagers and report disaster impact data to the central Government.

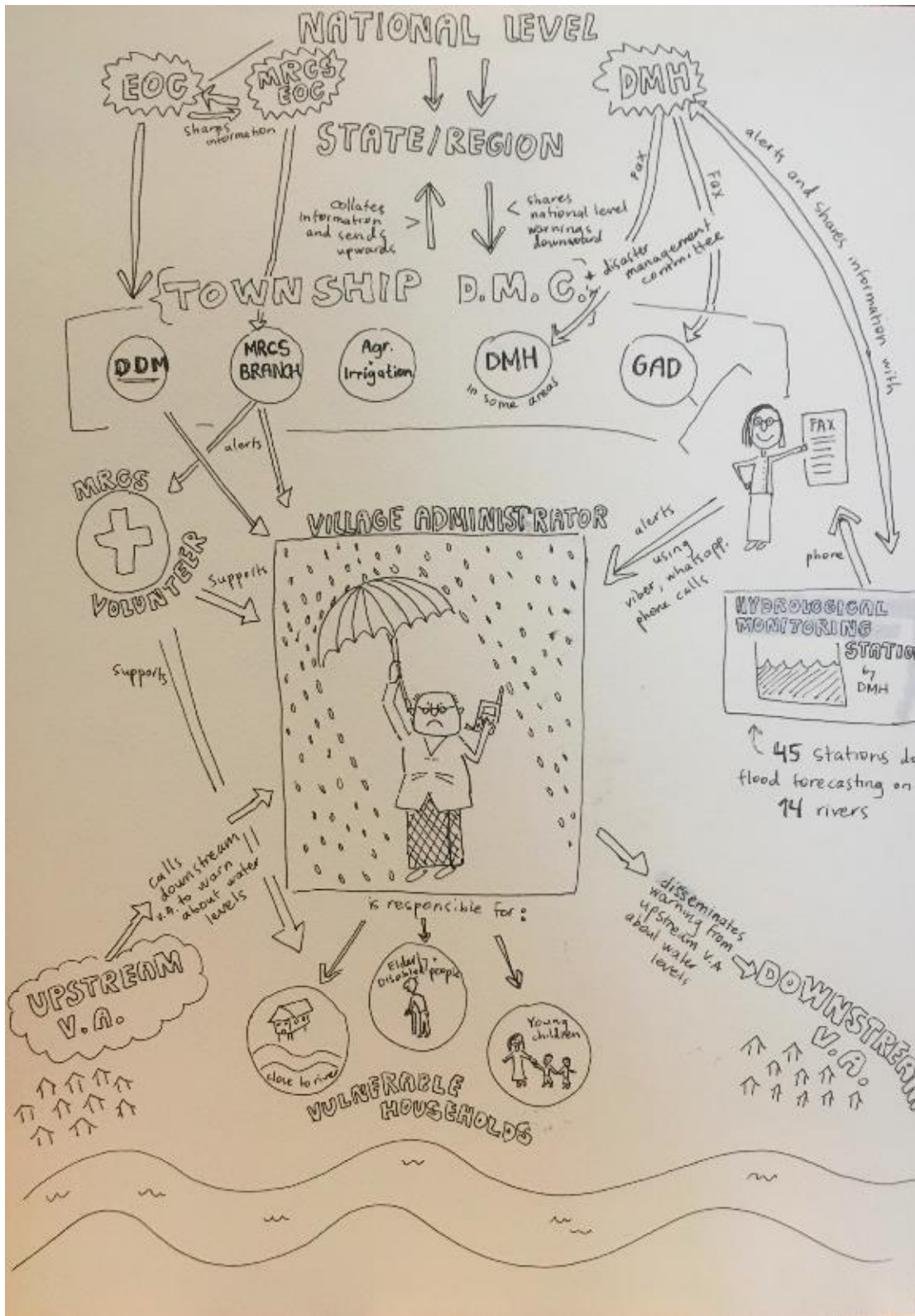
Village-level

- *Responsibilities:* Disseminating warnings to household level and evacuating vulnerable households
- *Challenges:* Translating and understanding DMH forecast; DMH forecast is said to be too slow for early action; very small budget for action. In Myanmar culture, many households believe that preparing for a hazard will bring bad fortune, which can discourage early action.¹ Nevertheless, MRCS has successfully encouraged community preparedness.
- *Opportunities:* Capacity for fast identification of vulnerable households through the Village Administrator; possibility of harnessing informal early warning networks for FbF.
- *Existing early actions:* Evacuation of vulnerable households, preparation of evacuation centres
- *Suggested early actions:* strengthening houses, securing houses to encourage people to evacuate, and house-to-house visits to disseminate early warnings

For floods, instead of relying on the official early warnings, the Village Administrators have an informal network of warnings; upstream administrators call downstream administrators to tell them of the current height of flood waters in their village. Using this information, Village Administrators know roughly how long they have until flood waters will reach their village and how high the waters will reach. In Bago township, the Village Administrators said they had a window of about 12 hours to act between when they receive a call from upstream.

¹ Still, in places where there are DRR projects, MRCS has seen successes in encouraging community preparedness. It is worth investigating how behavior / norm change was built into these programmes and incorporate these lessons into FbF initiatives.

Picture 1: Schema of early warning dissemination; source: author's depiction



Village Administrators are able to rapidly identify vulnerable households. They provide this information to GAD after hazard events and have weekly meetings with GAD authority. In spite of their knowledge of the community, Village Administrators are constrained in their ability to act early due to very small budgets. The Village Administrators that were interviewed for this study explained that they often use their own out-of-pocket expenses to support evacuation in their community and to travel between the village and the township.

Township-level

- *Responsibilities:* GAD has responsibility to liaise with Village Authorities, DMH, DDM, Head of the Disaster Management Committee and work with MRCS branch. The GAD receives information via fax from DMH at national and state level, as well as from the National and State EOCs. This information is then disseminated to Village Authorities.
- *Challenges:* Early warning fax is not tailored to each specific township, making it difficult to interpret at the local level. The fax provided is primarily technical meteorological/hydrological information (see annex) and does not include vulnerability or exposure data. Requires that fax machine, network, and electricity is working before and during hazard event.
- *Opportunities:* The GAD is very active in supporting evacuation and dissemination of warnings using loudspeakers and phone communication with Village Authorities, particularly in urban areas. GAD is instrumental in identifying beneficiaries.
- *Existing early actions:* Using loudspeaker to disseminate warnings, contacting Village Authorities.
- *Suggested early actions:* strengthening houses and securing houses to encourage people to evacuate (Saikkan Dagon Township). Some reticence around using cash (see cash section).

At the township level, interpretation of forecasts is challenging. Township authorities, from the General Administration Department (GAD), the DM department, the DMH department², and the Township Disaster Management Committee (TDMC) all receive a fax with the forecast (see annex for example). The information is presented in text format, in paragraphs, and may include jargon that is difficult for township administrators to understand. For floods, the DMH forecast information and warnings are tied to 'danger levels' of villages which do not appear to be linked to the impact on the local communities.

A mobile app called the Disaster Alert Notification (DAN) has been developed to disseminate early warning information directly to Village Administrators and the general public. The free app is available publicly on the Google Play Store or iOS store under the name DAN Myanmar. It is difficult to charge mobile devices during a hazard event and this channel of communication may get cut off. Any FbF initiative should focus on improving existing channels of communication.

In places where MRCS has implemented DRR projects in the past, the Township Authorities and MRCS support community-level preparedness actions at the beginning of the monsoon period to ensure

² Where they exist - not all townships have a decentralised DMH department.

households are prepared. This includes preparing dry food and ensuring important documents (identification cards, etc) are stored in plastic bags.

The Township-level requires authority from the Ministry level to support affected people in villages. At the ministry level, information is collated from all affected townships. It takes between 7 to 10 days *after* the hazard event for information to be collected and relief from central Government to be supplied. Information is supplied in a paper-based system.

District / State / Region-level

This level of Government did not feature in our discussions about dissemination of early warnings or planning early actions. The main actors generating early warning information were at national level, and the main actors acting on early warning information were at the township and village level. However, this study has a bias, as we were not able to interview District level authorities. This is worth triangulating in the feasibility study.

National-level

- *Responsibilities:* DMH generates and disseminates early warning information. EOC helps Township-level authorities and Hydrological Monitoring Stations to determine danger levels.
- *Challenges:* Information flow is very top-down and still paper-based. The National-level authorities rely on township level to understand impacts and disseminate warnings but have limited ability to support them to understand forecasts.
- *Opportunities:* New donor-led initiatives on hazard risk mapping could be used for creating impact-based forecasts.
- *Existing early actions:* EOC helping to translate the DMH's early warning messages for affected states/regions and townships. Early action for high temperatures includes to ensure fresh water is available to mitigate drinking water scarcity.
- *Suggested early actions:* N/A

National-level authorities were focused on a wider-breadth of hazards than Township and Village-level, who were largely focused on flood risks in the areas visited as part of this scoping study. At the national-level, the conversations were focused on operational procedures and monitoring mechanisms, as the national structures like DDM and DMH do not reach to the community-level.

The National EOC is translating the advisory from DMH into an operational report, to analyse what streams may reach 'danger levels' and notify supporting offices in those areas. This is done primarily through phone, though short-wave radio communication is sometimes used in emergency situations. The EOC monitors for precipitation, temperature, and strong winds. EOC would work towards increasing resolution or location-specificity of forecasts in order to be helpful for local Governments. The EOC relies on the Myanmar EOC for information about the situation on the ground, as they do not have networks in the village or township level.

Box 1: What kinds of early actions did stakeholders want to undertake under FbF?

Although most stakeholders' conception of early action was confined to evacuation of vulnerable people, a few ideas for early actions were suggested at the Township Administrator and Village Administrator level. These include the following:

- Help secure homes from thieves by distributing locks in order to encourage people to evacuate. Some people do not want to evacuate because they are concerned that their houses would not be safe while they are away.
- Fortify homes or evacuation centres (though unclear how this could be done within short lead times).
- Early harvesting for rice in rural areas, if the hazard falls within a window when this makes sense in the crop cycle. New machinery has enabled farmers to harvest within a day, but when early harvesting still produces a viable crop requires further study.
- There was reticence around using cash; Village Administrators were concerned that people would use money for food (though it was not clear why this might be problematic).
- Provide factory employers and vulnerable street workers with information about protecting themselves / their employees from floods / heatwaves.

Ideas about early action were relatively narrow. With more trainings and consultations, the breadth of potential early actions is likely to expand.

Forecasts and hazards: potential for FbF

Central to the feasibility assessment of an FbF system is the establishment of which hazard events, if any, can be anticipated with sufficient forecast reliability in order to trigger pre-disaster action. This study does not independently assess the skill of forecasts but presents options with potential for forecast-based action.

Table 1: Hazards, forecasts, and potential for an FbF intervention

Hazard	Forecasting Information	Lead time	FbF Potential
Riverine flood	Water-level forecasts from Hydrological Monitoring Stations under DMH	3 days	High
Flash flood	Guidance being developed by USAID project	>1 day	Low
Heat waves / High temperatures	Disseminated by DMH	A few days prior (~2/3)	Of interest but requires further study
Cyclone	Disseminated by Indian Meterological Agency	2 – 3 days	Medium
Strong winds	Disseminated by DMH	Not clear	Low
Earthquakes	Warnings disseminated by Seismology Department of DMH	Cannot be forecast	None
Tsunami	Warnings disseminated by Seismology Department of DMH	>3 hours	None
Drought	DMH has a dedicated drought monitoring centre in Mandalay	Not clear	Requires further study

Riverine flood

Background information

Riverine flood was a priority for early action in Bago, South Daikkan, and in national-level interviews because they occur regularly, cause significant damage, and can be predicted in advance. Among hazard warning systems in Myanmar, riverine floods have the most established early warning systems and protocols for actions. In downstream communities, riverine flood warnings allow sufficient lead time for action (between 3 to 1 day). The Myanmar Department of Meteorology and Hydrology (DMH) disseminates forecasts via fax to Townships.

The DMH plays a major role in forecast dissemination and maintains close communication with the MRCS. The DMH maintains hydrological observation stations, and issues daily, tri-monthly, monthly, and seasonal water level forecasts for the 12 major rivers. During the monsoon period, they issue flood warnings (3-1 days before) and flood bulletins (after flooding has occurred).

Table 2. Relevant flood forecasts issued by DMH

Type of forecast	Time of issuance	Lead time
General long-range water level forecast	April 28	Monsoon season
Seasonal water-level forecast	April 28, June 28, August 28, October 28	Early, Mid, Late Monsoon, Winter Monsoon
Monthly water-level forecast	April 28, May 28, June 28, July 28, August 28, September 28, October 28	1 month
10 days water-level forecast	8th, 18th, 28th of every month	10 days
Daily forecast	Daily	1 day
Flood warning	When water levels at hydrological observation stations reach within one meter of danger level	3-1 day

See Annex 2 for list of Hydrological Observation Network stations.

Danger levels

For riverine floods, DMH issues flood warnings with a three-day lead time. To communicate risk, the forecasts state that the water level is one meter below a 'danger level'. The danger level is defined by the GoM based on a levelling survey, which indicates the topography of the area which is vulnerable to

flooding. The survey is then triangulated with the General Administration Department, who confirm whether the defined danger level is suitable.

The danger level is not intended to indicate danger to agriculture or livelihoods. It was not clear precisely how the General Administration Department confirms the relevance of the local 'danger level'. From interviews with DMH, Township Authorities, and the National EOC, it did not appear that socio-economic or population data is formally integrated into the danger level, and interviewees from EOC and DMH were unable to clarify how the level was determined. This is a subject worth reviewing in the FbF Feasibility Study.

It is worth noting that the term 'danger level' is also used by the Water Utilization Management Department to define safe levels for dams. This is not related to the danger levels referred to in early warnings disseminated by the DMH.

Feasibility for FbF: High

Flash flood

Background information

There is an ongoing project with DMH supported by WMO, NOAA, USAID to improve flash flood early warning systems, called "Development and Implementation of International and Regional Flash Flood Guidance and Early Warning Systems". The system is designed to use an estimation of rainfall from satellite imagery and available gauges in small flash-flood prone basins, which can be validated with local knowledge.

The DMH Deputy Director mentioned this project in our discussion, though mentioned it was still in development. There are warnings for heavy rainfall during the monsoon period, for 'untimely rainfall' outside of monsoon season, and for 'isolated' rainfall in a single area. The threshold for heavy rainfall is three inches or more, and the flash flood guidance can give warning six to three hours in advance. This is not sufficient time for an early action project but is an important method of encouraging evacuation in hilly areas where landslide risk is present.

Feasibility for FbF: Low

Heat waves / high temperatures

Background information

The DMH declares a heatwave if high temperatures are sustained for three consecutive days. Because of uncertainty about whether the temperature will sustain over that period, the DMH prefers to use the terminology "high temperature" as it can be applied to a single day of unusually warm temperatures.

In March, April, and May, the DMH sends warnings of maximum temperature. The DMH official was not able to clarify exactly how these warnings are disseminated, but on the DMH website it appears that news of unusually high temperatures (5 to 8C above average) are forecast up to three days in advance.

At the township level, authorities mentioned that about 8-10 people die every year from heatstroke. However, the authorities were not disseminating the correct advice to protect against heatwaves, cautioning people against drinking cold water or taking showers. This makes heatwaves an interesting area for FbF as there is a knowledge gap and potential to save lives.

Feasibility for FbF: Of interest but requires further study.

Cyclone

Background information

Interviewees at DMH, DDM, and at township and regional levels did not explicitly mention cyclones as a priority for FbF. Rather than developing their own models, the Indian Meteorological Department (RSMC New Delhi) is responsible for tracking cyclones in the North Indian basin. Though local authorities could furnish plenty of evidence for how warnings for floods arrive, they had not received early warnings for cyclones in recent memory or considered possible early actions.

The action window between cyclone formation and landfall depends on the precise region of genesis of each cyclone; according to the SEADRIF feasibility study conducted in mid-2019, the window in Myanmar is smaller than in other countries due to the smaller ocean basin size. Generally, North Indian Ocean cyclones landfall no more than three days after formation. This means the cyclones tend to be less intense, as the cyclones spend (on average) less time strengthening over the ocean before making landfall.³ Furthermore, cyclones in the North Indian Ocean basin tend to be less intense due to high wind shear. However, the high wind shear also makes the cyclones less predictable, which makes it harder to if or when the cyclones will rapidly intensify.^{4 5}

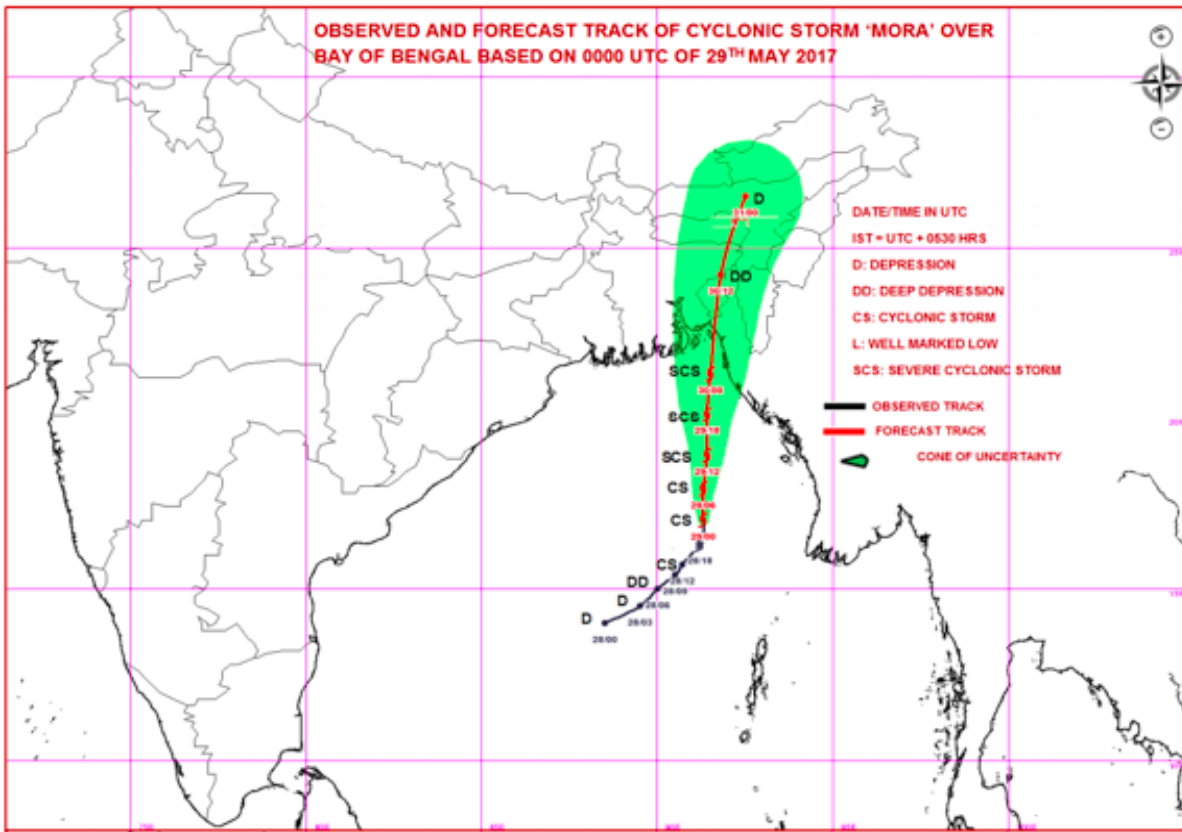
The Indian Meteorological Department (RSMC New Delhi) is responsible for tracking tropical cyclones within the North Indian Ocean basin. Each RSMC uses forecast information provided by multiple National Meteorological Centres and internal analysis in order to provide advisories. An example of the advisory issued by the RSMC New Delhi for Cyclone Mora is shown below. Note that RSMC advisories include a 'cone of uncertainty' rather than explicit probabilities, which allow calibration of forecast-based action triggers.

³ MacLeod, D. (2019) Verification of forecasts for extreme rainfall, tropical cyclones, flood and storm surge over Myanmar and the Philippines. SEADRIF Study. Red Cross Red Crescent Climate Centre. Unpublished.

⁴ Zhang, F. and Tao, D., 2013. Effects of vertical wind shear on the predictability of tropical cyclones. *Journal of the Atmospheric Sciences*, 70(3), pp.975-983.

⁵ Judt, F. and Chen, S.S., 2016. Predictability and dynamics of tropical cyclone rapid intensification deduced from high-resolution stochastic ensembles. *Monthly Weather Review*, 144(11), pp.4395-4420.

Picture 2: Forecast advisory for Cyclone Mora issued by the RSMC, New Delhi on 29 May 2017
 (Figure from RSMC New Delhi, 2017)



Although fewer than four TCs form per year in the North Indian Ocean and though they tend to be less intense than those formed in other basins, those that do can be devastating when they intersect the low-lying, long and heavily populated coastal regions of Myanmar

Feasibility for FbF: Medium

Strong winds

Background information

According to DMH, during pre-monsoon season, from April - June, 'strong winds' are a problem in Myanmar. These winds can cause the roofs of houses to fly off; in 2018 these winds reportedly destroyed 400 homes in the NW Myanmar.⁶ This was not mentioned by other stakeholders interviewed, and DMH did not know precise lead times or the skill of the forecasts for strong wind. To better understand these hazards, more investigation is required.

Feasibility for FbF: Low

⁶ See English-language article: <http://mizzima.com/article/strong-winds-destroy-over-400-houses-sagaing-region>

Earthquakes

Background information

Myanmar is an earthquake-prone country, but earthquake risk is best dealt with through DRR programmes rather than FbF. Within DMH, the Seismology department can send earthquake warning messages five minutes *after* a quake occurs but there is no forecasting capability (in general, not only in Myanmar). The seismology department works with different international geological surveys and academics to conduct studies concerning the return period of different earthquakes, to estimate when an earthquake is 'due' in a particular location. These studies cannot forecast the exact magnitude or location but the information is shared to the public via the media.

Feasibility for FbF: None

Tsunami

Background information

The DMH's seismology department receives warning for tsunamis and can disseminate the warnings within five minutes of an event. The source of the earthquake is major determinant of the leadtime; if the source is in Indonesia, the leadtime is about three to five hours. If the source is within the Indian Ocean, there is very little leadtime.

Feasibility for FbF: None

Drought

Background information

Drought is rising on the agenda of hazard threats in Myanmar. During the El Nino period of 2014 and 2015, the dry zone of Central Myanmar (which represents about 10% of Myanmar's landmass) experienced the driest years on record.⁷

The DMH has a special centre dedicated to drought monitoring which is based in Mandalay, which we were not able to speak with during this scoping study. According to KIIs based in Naypyidaw, the drought center issues seasonal forecasts but does not issue warnings for drought management. The Ministry of Agriculture and Irrigation also takes a role in monitoring drought, though we were not able to establish how responsibilities are divided between DMH and the Ministry of Agriculture and Irrigation because our KIIs were restricted to Yangon and Naypyidaw. In the DMH in Naypyidaw, the water level monitoring system used for floods is also applied for droughts: the DMH issues Minimum Alert Water Levels and Bulletins for seven stations in the dry zone area during low flow periods.

FbF potential: Requires further study

⁷ ESCAP (2019) Ready for the Dry Years: Building Resilience to drought in South-East Asia. Bangkok: United Nations ESCAP.

MRCS Operational capacity for FbF

Any Forecast-based Financing system should be focused on investing into MRCS' human resource capacity, to help train volunteers and create ownership of forecast-based action from the HQ to the branch level.

The capacity of branches differs widely and any FbF system that would aim to reach wide areas should consider investing into volunteer management capabilities to ensure that the right volunteers can be deployed to affected areas rapidly if needed.

Within MRCS, existing hazard SOPs need to be disseminated further outside of DM department and roles and responsibilities clarified at lower levels of MRCS operations (State/Region, District, or Branch). Any Early Action Protocol development must be accompanied by related trainings and capacity building. Currently, planning for hazards is relatively minimal. MRCS needs to strengthen capacity for emergency response and ownership of response planning outside of the DM department.

Because early action is a relatively new concept in the MRCS, technical capacity at the branch, regional, and national level needs to be augmented to develop and implement early actions. As it stands, MRCS has an 'Early Warning Early Action' mechanism which consists of the mobilisation of volunteers and providing assistance with evacuation where appropriate. The capabilities for this are concentrated in townships where there is an on-going DRR project and volunteers have been trained on the evacuation of vulnerable people (elderly, young families, people with disabilities). In these areas, the Emergency Operations Manager (EOM) through the MRCS EOC, disseminates early warning messages to the branches at the township and State/Region level upon receiving a warning from the Department of Meteorology and Hydrology (DMH). If evacuations are needed, the EOM initiates the mobilization of volunteers to assist local authorities.

Potential for use of cash

Overview of Cash Programming in Myanmar Context

Since the response to Cyclone Nargis in 2008, cash and voucher assistance (CVA) has been increasingly utilized for humanitarian interventions in Myanmar. According to an overview of cash transfer programming activities released yearly by OCHA, in 2018 over 612,000 individuals were reached with cash transfers totaling more than \$13.8 million in expenditures. These aggregate figures are comprised of over 200 CVA programs in 66 townships across 13 states, with 29 organizations participating. Over half of the \$13.8 million was expended on food objectives, \$2.2 million on multipurpose cash, \$1.5 million on both 'Livelihoods/Infrastructure' and Agriculture, with the remaining amounts distributed amongst Education, Nutrition and WASH sectoral objectives. In 2019 it is projected that a minimum of 600,000 individuals will receive over \$20 million in cash grants.

There is an active Cash Working Group (CWG) in Myanmar. The CWG does not coordinate response but does work to set standards such as a common Minimum Expenditure Basket (MEB) as well as facilitating shared learnings. Prominent humanitarian cash actors in-country include the Myanmar Red Cross Society (MRCS), World Food Programme, and UNICEF. These actors and others are continually expanding cash preparedness initiatives aimed at improving readiness to deliver cash efficiently and at scale.

Efforts to improve the reach and quality of CVA have also been aided by the fast-changing economic and financial environment in Myanmar. Mobile money has shown particularly promising developments. Mobile Network Operators (MNOs) enabled bulk transfers in 2016, and penetration continues to increase country-wide with leading service providers Telenor and Ooredoo planning to scale their coverage nationally in 2019. Due to unreliable, inaccessible ATMs, the Myanmar population is increasingly relying on MNOs for information, connectivity and banking services. All factors contributing to a conducive environment for electronic cash transfers.

The Myanmar government is supportive of CVA and undertakes its own cash programming through the Ministry of Social Welfare's social protection schemes and select disasters responses via DDM and GAD. The government currently provides this assistance through Cash in Hand. UNICEF is actively collaborating with the government to assist with contracting an MNO for future assistance. They intend to pilot in urban centers to demonstrate to the government that mobile money is achievable, and have a goal of electronic government cash transfers by July 2020. UNICEF is also working with the government to institute shock responsive protection schemes, which includes the development of a Social Management Information System (SMIS) to enable a comprehensive database of recipients. They aim to complete this work in 8-10 months but acknowledge they may face roadblocks in roll-out and implementation.

MRCS Background, Capacity & Positioning

Like other humanitarian actors, Cyclone Nargis prompted MRCS to undertake cash programming in 2008. In 2011, MRCS' interest in CVA resurfaced when the IFRC began holding regional cash trainings. This prompted MRCS training participants to lobby MRCS leadership for standardized cash programming in response operations. By 2012 the MRCS had explicitly authorized its Emergency Management Fund (EMF) to be employed for CVA in emergencies. The ICRC began implementing cash in conflict-zones through MRCS in 2014, and after an official CTP feasibility assessment, the MRCS accepted American Red Cross support for robust cash preparedness and technical advisement beginning in 2015.

Through AmCross support the MRCS has steadily increased its capacity to employ CVA over the past four years. MRCS has now fully executed Cash SOPs that have been mainstreamed into its Disaster Management Handbook. They have also contextualized and translated key tools for assessment, registration, monitoring and feedback mechanisms. MRCS has also adapted and translated cash training modules, and has trained over 120 staff and volunteers in cash level 1 (CVA orientation) and level 2 (CVA theory and practice). Additionally, MRCS has 20 staff on-hand that have completed a training of trainers

at branch levels, and routinely provide training materials and conduct trainings for numerous other members of the CWG, of which they are an active member. Most recently they have issued a request for proposals (RFP) for electronic payment mechanisms, and are currently reviewing two quotations from AYA bank & Wave Money.

As a result of preparedness efforts, MRCS cash utilization in disasters increased from 20% to 100% from 2011 to 2018, and the average time of delivery was reduced from 4 months to 1-3 months. For additional detail on MRCS cash operations see Annex 3.

Although MRCS cannot claim the highest cash expenditure rate in Myanmar, the organization does possess a number of competitive advantages and leads in other aspects of CVA. As referenced above, **MRCS is the default cash training agency in Myanmar, with their staff often contracted to train UN, NGO and government agencies in CVA (as recently as August 2019, MRCS trained WFP staff in Yangon)**. Further, most cash actors in Myanmar utilize cash for peacebuilding and longer-term development goals, rendering MRCS the most experienced and active actor for cash in disaster response. MRCS localization and reach is unparalleled, with 330 branches and over 1,000 staff and 16,000 volunteers. Finally, MRCS has developed the reputation and technical experience to advocate for CVA to local government authorities, and in addition to training government actors in cash, has also supported on their needs assessment and targeting design approach.

Cash as an Anticipatory Action in Myanmar FbF Context

Employing cash as a modality for anticipatory action is a growing but still relatively new concept in the Forecast-based financing space. The model has been proven in Bangladesh and Mongolia, with several other Red Cross NS and humanitarian actors moving ahead with this approach as well. Upon reflection of MRCS' capacity, reach and several key factors for rapid cash disbursement, cash as an early action does present itself as a possibility in this context. Major considerations and further requirements outlined below:

Organizational Buy-In

MRCS is committed to CVA and hopes to integrate cash programming across the disaster cycle. The organization's interest in both forecast-based financing broadly and the application of CVA to all elements of the disaster cycle indicate a positive reception for cash as an early action from MRCS.

Localized Implementation Capacity

Due to the narrow implementation window, local capacity at MRCS branch offices is of particular importance when considering the feasibility of cash as an early action. Currently, MRCS deploys headquarters-based staff to branches to carry out CVA for response. In order to establish predictable early action, cash preparedness and training will need to be increased regionally. MRCS does intend to decentralize response decision making and enable states, districts and branches to initiate small-scale routine cash assistance. These activities should be carried out in alignment with early action considerations so as to best position MRCS to employ cash as a modality for FbF.

Advocacy & Sensitization

Conversations with local Red Cross chapters regarding CVA as an anticipatory action exposed initial resistance to providing unrestricted cash grants. Concerns centered around use of funds, and fear that residents would use the assistance for food instead of relevant activities such as paying to fortify home structures. They did express acceptance of vouchers, but a thorough assessment of objectives and modalities will need to be conducted to determine the best mechanism and necessary restrictions. If an unrestricted mechanism is used in the early action context, advocacy and sensitization of this decision will be required for local MRCS branches and most likely local government authorities as well. Further, not all local authorities have been exposed to CVA more broadly, and this advocacy also needs to be accounted for when implementing cash as an early action on a national scale.

Rapid Beneficiary Targeting

Prior FbF programs that have employed cash as an early action modality have relied on pre-registration in predetermined geographic locations to enable rapid beneficiary identification and disbursement. This solution is neither sustainable nor scalable, as pre-registration is arduous, requires regular maintenance and updating, and is extremely difficult on a national scale.

Through conversations with MRCS branches and local government authorities, there does appear to be an indication that beneficiary lists could be generated in as quickly as thirty minutes. However this claim will need to be further validated, both from a timing and reliability perspective. Further, the lack of digitization of lists may also present a problem in terms of timeliness and verifiability but will need to be explored further.

Another potential source of quick and reliable data is the Social Management Information System (SMIS) that UNICEF is developing alongside the Department of Social Welfare. SMIS is aimed at expanding the government's social protection scheme and ensuring it is shock responsive, with the ability to register individuals beyond the narrower protection schemes currently in place. Based on discussions with UNICEF and the expectations of the joint ECHO proposal, this system would potentially be available to the MRCS to assist with beneficiary identification and targeting. The current timeline on developing SMIS is 8-10 months, although realistically a functioning system populated with necessary data may be several years away.

An additional possibility for addressing the difficulty with rapid beneficiary targeting is capitalizing and expanding upon the Village Disaster Management Committees (VDMCs) and associated **Village Emergency Management Funds** that the American Red Cross has supported the MRCS to stand up. In theory, VDMC's could be given proper training and tools to act upon forecasts and to issue cash grants as an early action from their funds to community households. Robust mechanisms and monitoring would need to be put in place, but this is an innovative area worth exploration as it both capitalizes on a localization approach and reduces the amount of transactions that MRCS needs to manage for a cash program.

Localized Funding

As has been highlighted through FbF learnings, localized funding is an extremely important element of anticipatory action. Likewise, CVA learnings in the Red Cross Red Crescent (RCRC) Movement have emphasized this point. The IFRC financial pipeline has the ability to significantly extend the timeline to disburse funds. Cash as an early action will be contingent on localized funds, ideally held at the district level or lower.

Electronic Payment Mechanisms

Currently MRCS carries out all CVA programming with cash in hand. Cash in hand requires physical distribution, more time-consuming physical management of envelopes and a less reliable and secure paper trail. Ideally cash as an early action would employ an electronic mechanism to enable remote, rapid issuance of funds and a secure, straightforward method of reconciliation. As referenced above, the MRCS is in the process of identifying one or more standing contracts for electronic mechanisms, and this can ideally feed into future operational design for cash as an early action.

Gaps and opportunities

This section details the opportunities and gaps that arose in our discussions that may be of interest for FbF programming in Myanmar.

Opportunities

Leverage Myanmar social structure and culture - Within Myanmar, a strong social solidarity within communities enables local disaster response. Much of this support is channelled through religious institutions like monasteries, where people shelter during disaster events and provide food and clothing to vulnerable people who need additional support. Local private sector actors often donate in-kind or provide transportation to authorities or community members in the wake of disasters. These networks could be leveraged for FbF initiatives, if accompanied with advocacy to encourage people to act in anticipation and prepare for disaster events.

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.⁸ 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.

⁸ Malteser International (2013) Mapping of stakeholders and Initiatives on Early Warning Systems in Myanmar. Malteser International: Yangon.

Use risk and vulnerability data from other projects - A large amount of risk and vulnerability data is being generated by projects funded by international institutions and donors (see initiatives section). Rather than reinvent the wheel, borrow data and hazard maps from these initiatives to develop impact-based forecasts and learn about risks in Myanmar. In fact, investing into new maps may risk duplication of efforts, given the range of ongoing initiatives. DMH receives a different form of technical support that can act as an entry point for collaborating with DMH on defining a trigger for impact-based forecasting. MRCS would benefit more from convincing DMH and other actors to share data rather than investing into a parallel system. One avenue would be to link to the Myanmar Information Management Unit, a UN Country team service which is designed to improve the capacity for analysis and decision-making by humanitarian stakeholders. MRCS can furnish data to the MIMU platform, as well as use existing data to inform MRCS FbF initiatives.

Build on informal early warning systems - The hazard information that filters down from 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.

Pay attention to urban livelihoods - There is potential to develop forecast-based finance that focuses on urban livelihoods, such as factory employees who work in the riverbank-based warehouses or street workers who sell wares outside. According to township authorities, factory employers are open to disseminating warnings or taking some early actions for hazards. However, employers may not have the right information about what to do. For a targeted FbF pilot project, focusing on urban heatwaves or flooding for factory workers and street vendors could be a promising avenue.

Gaps:

Consider focusing on heatwaves - Actors working on DRR and early action in Myanmar are largely focused on flood events, as these are common and cause significant destruction. However, in both townships, authorities mentioned that people die from heat stroke every year during high temperatures. More worryingly, the authorities mentioned they alert community members but give them incorrect advice for how to deal with the impacts of heatwaves. Even if this is not to be a focus of FbF, there is a need for an education and advocacy campaign for factory employers to ensure the right advice is reaching vulnerable people. Furthermore, this is a promising opportunity for FbF in urban areas, as factory workers may prove to be an interesting target group for urban FbF.

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. MRCS and Township Disaster Management Committees that we spoke to for this study didn't know what to do with additional financial resources if they were to be available for early actions. MRCS and PNS 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 frighten 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. 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.

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 trying to decentralise finance for early action. Partner national societies may be open to topping up the EMF if they see that it is being used strategically for early action.

Relevant initiatives

In the past three years, there have been a number of initiatives with objectives to improve forecasting, hazard risk mapping, and early warning systems, with a focus on flooding. These have tended to focus more on developing risk information, guidance, or tools to be used to Government stakeholders. The data generated in these initiatives could be integrated into a Forecast-based Finance pilot. An initiative that is likely to be particularly helpful for FbF is MUDRA, a database of vulnerability / exposure maps that should be available online in the next few months. The Myanmar EOC is working with the ADB to refine the information, and was keen that the Red Cross have access to the database / website when it is available.

Importantly, the joint project on "Scaling up FbF/EWEA and SRSP with innovative use of climate risk information for disaster resilience in ASEAN with ECHO" is an opportunity to learn from other early

action approaches, perhaps trialling parallel early action initiatives. In the project plans the RCRC Partners (MRCS, German Red Cross, Finnish Red Cross, IFRC) main activity in the project plan is the FbF feasibility study, but project partners from WFP, FAO and UNICEF were keen to have MRCS involved and share data and learning. The project officially started in May 2019, but there is scope to shape the trajectory of the project and the collaboration, as the partners were keen for input from MRCS and PNS. A meeting in Yangon at the end of October hosted by FAO will be an entry point for collaboration with UN partners.

Of these partners, FAO and WFP may have more natural overlap with the RC's conception of FbF, with their respective Early Warning Early Action programmes. However, UNICEF is currently looking to expand their social protection programming to make it more 'shock responsive'. In essence, the social protection programme can expand to meet more people's needs, provide more money to existing beneficiaries, and overcome access or other constraints brought about disaster events. The information they use for targeting and for cash disbursements could be relevant for MRCS and partners if cash-based FbF activities are considered. There may be an opportunity for MRCS to explore FbF cash-based programming in parallel with UNICEF in these conflict-affected areas, to learn and trial different approaches.

See Annex 4 for a full list of relevant initiatives.

Recommendations: For MRCS, FbF approach, and Feasibility Study

Recommendations for MRCS

- Consider revising the guidelines for the MRCS Emergency Management Fund, and its decentralised funds at the state/region level, so it can be used to deliver early action. Partners would potentially be more willing to support and replenish EMF if they knew funds would be disbursed rapidly, and it offers a solution to the need for more decentralised finance to enable early action.
- Invest in more staff to take ownership of FbF approach.
- When FbF is in place, Early Action Protocol dissemination is as important as elaborating and submitting the document to IFRC. Dedicate time and resources to ensure roles and responsibilities are understood across departments and at decentralised levels.

Recommendations for setting up a potential FbF intervention

- In Myanmar, where some conflict-affected areas are administered by Ethnic Armed Groups, a different modality or approach for FbF is needed to communicate risk information and to act early. If FbF is to be trialled in Myanmar, consider trying two different tactics and learning from

them - one conventional FbF project (perhaps in an urban environment or where MRCS has experience with DRR programming) and one FbF project in a conflict affected area, partnering or aligning with UNICEF's Shock Responsive Social Protection programming.

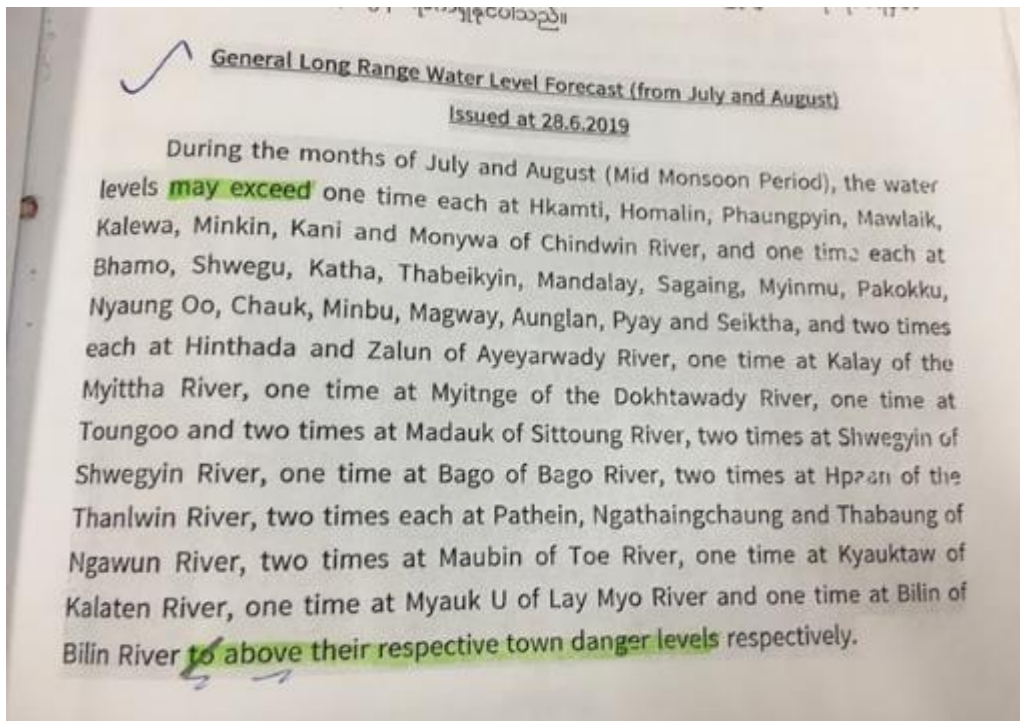
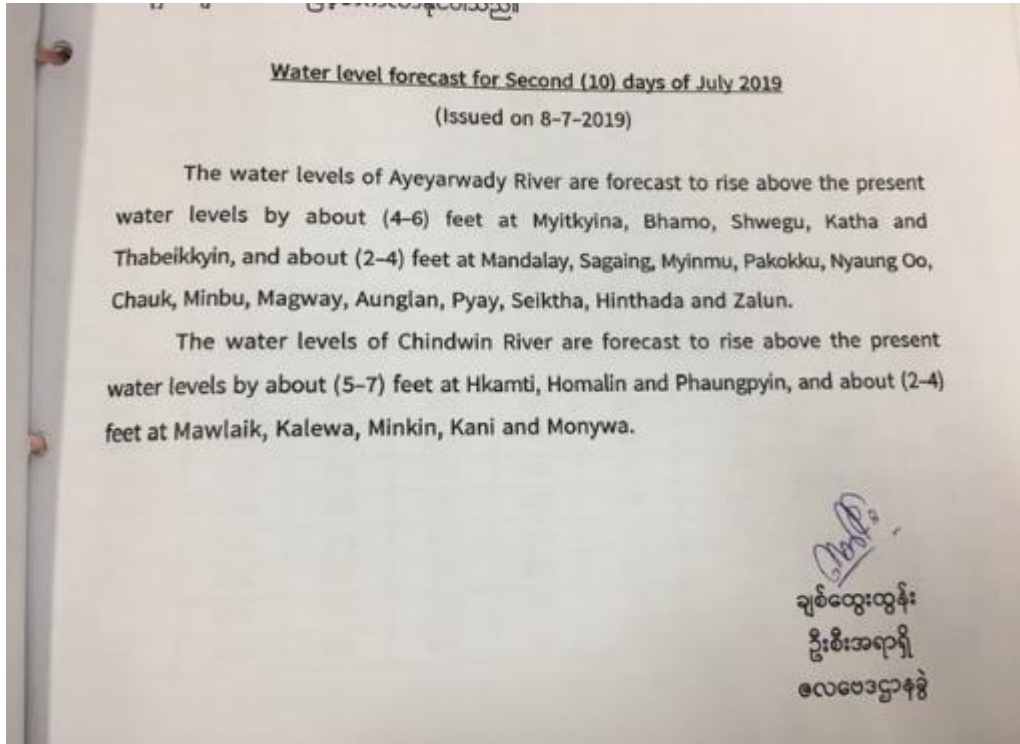
- MRCS' grassroots approach working through volunteers can help with linking Village Administrators and Townships for FbF.
- If FbF for floods is an option, consider an implementation area that is downstream as the lead time will be longer and/or the forecast reliability higher compared to upstream areas.
- Build and strengthen MRCS relationship with ECHO project partners, i.e. FAO, WFP, and UNICEF as the activities can directly contribute to setting up a potential FbF project.
- The American Red Cross' Community Disaster Emergency Fund can currently only be used for response and would need to be adapted for an anticipatory approach.
- Invest in advocacy and mindset change for Government and MRCS stakeholders at Township levels, especially the General Administration Department. The' current strong focus on response would need to be changed to a more anticipatory approach.

Recommendations for the FbF/EWEA feasibility study (ECHO, 2020)

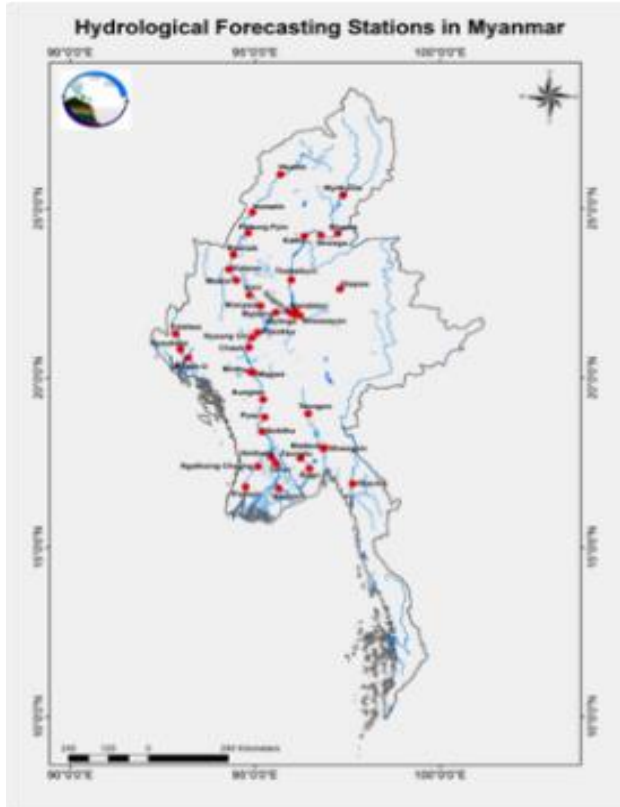
- Get involved early with FbF/EWEA Feasibility Study partners to shape collaboration. The project still has scope to evolve and MRCS and its PNS can help determine how to work together; for example, collaborating on cash for FbF in conflict-prone areas where UNICEF are collecting data about vulnerability and are already operating cash-based social protection schemes.
- Follow up on access to MUDRA with DDM/EOC. It is supposed to be launched and accessible by the end of 2019. Could be used for the trigger since it has vulnerability and exposure data.
- Clarify how 'danger levels' for floods are defined with DMH, DDM, TDMC, and with the local communities, including the people working at the DMH water level stations where the danger levels are 'defined'. Danger levels would be crucial for establishing a FbF trigger.
- Examine informal flood early warning systems between upstream and downstream village administrators.
- Conduct a historical impact analysis to consider geographical scope of any FbF pilot and to what extent these areas overlay with conflict-affected townships

Annexes

1. Example flood forecasts, disseminated by DMH:



2. List and map of Hydrological Forecasting Stations in Myanmar:



No	Rivers	Station
1	Ayeyarwady	18
2	Chindwin	8
3	Dokhtawady	3
4	Bago	2
5	Sittoung	2
6	Ngawun	2
7	Kalaten	2
8	Thanlwin	1
9	Shwegyin	1
10	Toe	1
11	Laymyo	1
Total:		41

3. Previous cash interventions in MRCS

Year/Disaster	Number of Households	Mechanism
2008 Cyclone Nargis	8,500	• Cash in envelopes
2014 Rakhine Conflict	13,247	• Cash in envelopes
2015 Rakhine Conflict	9,900	• Cash in envelopes
2015 Rakhine Conflict & Flood affected	1034	• Cash in envelopes
2015 Floods recovery Operation	2289	• Cash in envelopes
2015 Floods Recovery Operation	1800	• Cash in envelopes
2015 Kachin Special Operation-Conflict	350	• Cash in envelopes
2016 Floods	2575	• Cash in envelopes
2016 Rakhine-Conflict	670	• Cash in envelopes
2016 Kachin Special Operation- Conflict	574	• Cash in envelopes
2017 Northern Shan Conflict	1739 individuals	• Cash in envelopes
2017 Rakhine-Conflict	178	• Cash in envelopes
2017 Rakhina Cyclone Mora	1000	• Cash in envelopes
2017 Kachin Special Operation-Conflict	1319	• Cash in envelopes
2018 Rakhine Conflict related displacement	221	• Cash in envelopes
2018 Rakhine CBHFA Programme	347	• Cash in envelopes

4. Relevant Initiatives for FbF in Myanmar

Name	Purpose	Timeframe	Implementing agency	Donor	Relevance for FbF
Myanmar Disaster Risk Application (MUDRA)	To provide hazard risk maps for hazards of various strengths, including 10- and 25-year return periods as well as climate change projections	Not clear – mapping tool to be launched in 2019	Not clear; working with EOM and DMH	ADB	Possible to integrate socio-economic, population, agricultural data into hazard risk maps for impact-based forecasting
Project on Strengthening Climate and Disaster Resilience	To develop a 1D2D Hydraulic Model of Ayeyarwaddy Delta and to develop flood maps for return periods of 2 - 100 year flood events	2018 (10 months)	Relief and Resettlement Department, Department of Metereology and Hydrology, Environmental Conservation Department	ADB, Government of Canada	Use flood maps to design impact-based forecasting system, especially if a pilot focuses in Ayeyarwady Delta region
Building Disaster Monitoring and Early Warning Capacity	To implement Disaster Monitoring and Response System for Myanmar to promote early warning dissemination system of DMH	2017 - 2019	Pacific Disaster Center; possibly others	USAID, PDC	In feasibility study, investigate what products or analysis that have come out of this that may be helpful. Not clear from discussions with DHS / DDM.
Project on Development and Implementation of the Myanmar Flash Flood Guidance System (FFGS)	To develop and implement a stand-alone Myanmar Flash Flood Guidance System	2017 - 2018	Not clear	WMO, USAID/OFDA, NOAA, HRC	Flash floods not likely to be suitable for FbF, but some guidance developed in this project may be relevant.
Ayeyarwady Integrated River Basin Management	To help Myanmar develop the institutions and tools needed to enable informed decision making in the management of Myanmar's water resources and to implement integrated	2015 - 2020	Directorate of Water Resources and Improvement of River Systems, Ministry of Transport	World Bank	This project will be implementing a pilot for impact-based forecasting for floods; though we were not able to see the hazard maps in the scoping study, this is worth further investigation in the Feasibility Study.

	river basin management of the Ayeyarwady Basin.				
EWEA/FbF ECHO regional project	The project aims to consolidate the FbF/EWEA pilots and support the implementation of the ASEAN Guidelines on Disaster Responsive Social Protection to increase resilience and country Roadmaps to establish SRSP systems in ASEAN and select ASEAN Member States (AMSs) namely, Cambodia, Myanmar, Philippines and Viet Nam.	2019 - 2021	UNICEF, FAO, WFP, GRC / FRC / MRCS	ECHO	MRCS / GRC / FRC will be involved in the project. Currently, the only activity planned for Myanmar for the RC/RC movement is to undertake a feasibility study. However, there may be other opportunities for collaboration that can be developed as the project enters its early implementation stages.

5. List of interviewees consulted

	Name	Organization	Title	Location	Date of KII
1	Lynn Lynn Thet	MRCS	MRCS OD Director	Yangon	September 2019 (prior to study)
2	Jukka Pekka Kassinen	Finnish Red Cross	FRC DM Reginal Advisor- Manila Philippines	Yangon	1-3 October 2019 (prior to study)
3	San San Maw	MRCS	MRCS DM Director	Yangon	3 October 2019
4	Marc Gschwend	WFP	Programme Policy Officer, Cash-based Transfers focal point	Yangon	4 October 2019
5	Samuel Clendon	WFP	Regional Programme Policy Officer, WFP Regional Bureau Bangkok	Yangon	4 October 2019
6	Joseph Muyambo	IFRC	IFRC Program Coordinator	Yangon	5 October 2019
7	Nan Da Lin	MRCS	Red Cross Volunteer	Dagon Saikkan Township	5 October 2019
8	Aung Thi Ma	MRCS	Red Cross Volunteer	Dagon Saikkan Township	5 October 2019
9	Soon Lwin Oo	MRCS	Red Cross Volunteer	Dagon Saikkan Township	5 October 2019
10	U Aung Zaw Naing	MRCS	MRCS Member	Dagon Saikkan Township	5 October 2019
11	Myint Khaing	MRCS	Red Cross Volunteer	Dagon Saikkan Township	5 October 2019
12	U Kyaw Win	Yangon City Development Committee	Municipal Chairman	Dagon Saikkan Township	5 October 2019
13	U Min Aung	General Administration Department / Township DM Committee	Director	Dagon Saikkan Township	5 October 2019
14	Katie Tiller	START Fund	Deputy Country Director, Program Development / Start Fund, Asia Regional Adviser	Yangon	7 October 2019
15	Yeeshu Shukla	Christian Aid	Regional Emergency Manager	Yangon	7 October 2019
16	Manish Tewani	American Red Cross	AMC Country Representative	Yangon	7 October 2019
17	Moe Thida Win	MRCS	MRCS DM Deputy Director	Yangon	8 October 2019
18	Phone Mynt Soe	Myanmar Government	Village Administrator	Bago	8 October 2019
19	Khin Kyu	Myanmar Government	Village Disaster Management Committee Member	Bago	8 October 2019
20	Toe Nyant	Myanmar Government	Village Administrator	Bago	8 October 2019
21	U Si Thu Mauq	General Administration Department	Director	Bago	8 October 2019

22	Dr. Tin Mar Htay	Meteorological division; Dep. of Meteorology and Hydrology (DMH)	Director	Naypyidaw	9 October 2019
23	Myo Tun Oo	Hydrological Division, DMH	Assistant Director	Naypyidaw	9 October 2019
24	Dr. Yin Myo Min Htwe	Seismology Division	Director	Naypyidaw	9 October 2019
25	Dr. Ko Ko Naing	DDM	Director General	Naypyidaw	9 October 2019
26	U Win Htein Kyaw	EOC	Director EOC	Naypyidaw	9 October 2019
27	Daw Thiri Maung	EOC	Deputy Director EOC	Naypyidaw	9 October 2019
28	Daw Swe Swe Win	WFP	Deputy Director	Naypyidaw	10 October 2019
29	Daw San No	WFP	-	Naypyidaw	10 October 2019
30	Phyu Phyu Win	UNICEF	Social Policy Officer	Naypyidaw	10 October 2019
31	Nangar Soomro	UNICEF	-	Naypyidaw	10 October 2019
32	Roberto Sandoval	FAO	CCA/DRR Specialist	Yangon	10 October 2019
33	Daniel Becker	German Red Cross	GRC Program Coordinator	Yangon	18 October 2019
34	Rita Petralba	IFRC	IFRC DM Delegate	Yangon	25 October 2019
35	Min Thein Htike	American Red Cross	ARC Program Manager	Yangon	25 October 2019
36	Andreas Fabricius	Danish Red Cross	DRC Country Manager	Yangon	25 October 2019
37	Emilio Teijeira	German Red Cross	GRC Country Representative	Yangon	25 October 2019

Summary Timetable:

Dates	Agenda	Responsible	Days
(01/03.10.2019)	(Exchange Workshop on FbF in Yangon)	GRC/MRCS	-
04/07.10.2019	Field visit to Dagon Seikkan Township - Yangon Region (MRCS/GRC project area). Interviews in Yangon with MRCS/IFRC/PNS Partners, INGO/ Start Network representatives, Cash Technical Working Group members, Government Region / Township level authorities.	Raymond Zingg (IFRC Advisor) Lisa Williams (AmRC Advisor), Florence Pichon (Consultant), GRC, MRCS	3
08.10.2019	Field trip to Bago - Central Region (MRCS/ARC project area). Meetings with Government State / Township level authorities, MRCS staff and volunteers. Arrival in Naypyidaw.	Consultants/Advisors, MRCS	1
09/10.10.2019	Meetings in Naypyidaw with National Government authorities (DDM, DMH, EOC) and UN/Agencies representatives (WFP, UNICEF, FAO). Travel back to Yangon.	Consultants/Advisors, MRCS	2
11.10.2019	Review preliminary data and findings.	Consultants/Advisors, GRC	1
Until 25.10.2019	Presentation and review meeting with MRCS/RCRC Partners. Preparation and submission Final Report.	Consultants/Advisors, GRC, MRCS	3
TOTAL			10