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Bangladesh: Cyclone

Final report early action

 International Federation
of Red Cross and Red Crescent Societies

Early Action Protocol (EAP) Number: EAP2018BD01	Date of EAP activation: 18 May 2020
Early Action Timeframe: 30 days	Early Action Protocol Approved: December 2018
Number of people at risk: 14.2 million	Number of people reached: 36,365 people
Budget: 134,317 Swiss francs	Date of publication: 31 October 2020
Red Cross Red Crescent Movement partners currently actively involved in the operation: Bangladesh Red Crescent Society (BDRCS), International Federation of Red Cross and Red Crescent Societies (IFRC), German Red Cross (GRC) Red Cross Red Crescent Climate Centre (RCCC), American Red Cross.	
Other partner organizations actively involved in the operation: Ministry of Disaster Management and Relief (MoDMR), Department of Disaster Management (DDM), Cyclone Preparedness Programme (CPP), Bangladesh Meteorological Department (BMD), Local Government.	

The Forecast based Action (FbA) by the Disaster Relief Emergency Fund (DREF) allocated CHF 134,317 to implement early actions to reduce and mitigate the impact of Cyclone “Amphan” on the vulnerable population in Bangladesh’s coastal areas. The early actions conducted have been pre-agreed with the National Society and are described in the [Early Action Protocol](#).

A. SITUATION ANALYSIS

Summary of the Early Action Protocol (EAP)

Bangladesh is located at the north coast of the Bay of Bengal and is crisscrossed with more than 700 rivers. Ganges Brahmaputra and Meghna (GBM) is one of the world’s largest river system which meets the Bay of Bengal. However, it poses a threat to the country as it results in river flooding and riverbank erosion. The coast of Bangladesh is funnel shaped which has made the country vulnerable to severe cyclones and storm surges. Over the past years, cyclones have affected the life and livelihoods of a million people living in and around the coastal communities of Bangladesh. According to historical data of Regional Specialized Meteorological Centre (RSMC) in New Delhi, from 1891 to 2015, 89 cyclones have made landfall at the Bangladesh coast among which 47 per cent were Cyclonic Storms (CS) and 53 per cent were Severe Cyclonic Storms (SCS). Historically, the Bay of Bengal has witnessed many cyclones causing enormous disruptions, damages and a remarkable number of casualties. The population is vulnerable to cyclones associated with tidal surge particularly in the pre-monsoon months of April-May and post-monsoon months of October-November.

With the effect of global warming and climate change, Bangladesh is one of the worst affected countries. Every year sea level is rising at a very slow rate and as a result salinity intrusion is becoming a concerning issue due. With the change of climate, severe cyclone is also occurring very frequently which is affecting not only the life and livelihoods but also hampering economic growth of the country.

Cyclone is not only causing human and livestock casualty it also causes people to migrate. After the cyclone “Sidr” in 2007 and cyclone “Aila” in 2009, a large amount of people had to change their occupation and move to different cities for their livelihoods. Cyclone also causes the storm surge which is more devastating for a longer time. After cyclone “Aila” the coastal polder (embankment) were broken, and the saline water enter into the vast area which remain for a longer period causing widespread damage for agriculture, livestock and livelihoods.

The Bangladesh Red Crescent Society (BDRCS) has been assisting the coastal communities who are exposed to cyclone for many years to save livelihoods and relieve the suffering and working to build resilient communities. From December 2018, with support from International Federation of Red Cross and Red Crescent Societies (IFRC), German Red Cross (GRC) and Red Cross Red Crescent (RCRC) Climate Centre, BDRCS has been actively participating to reduce the impact of cyclone on the vulnerable people of 13 sea facing coastal districts. Using pre-defined mechanism, the Early Action Protocol (EAP), the scientific trigger, cyclone impact map developed by the Forecast based Financing (FbF) technical team, BDRCS could allocate humanitarian aid to the high forecasted impact areas before cyclone strikes.

On 16 May 2020, a disturbance was formed in the Bay of Bengal near Andaman and Nicobar Islands. World Meteorological Organization (WMO) named the cyclonic storm as “Amphan” (pronounced as “UMPUN”) which is the first super cyclone after the 1999 Odisha cyclone in the region. The FbF technical team generated monitoring report and impact-based forecasting on every three hours. BMD forecasted on 18 May 2020 that the cyclone turned in to a super cyclonic storm and had a probability to landfall in Bangladesh. Based on the RSMC and BMD forecast track, the FbF technical team prepared an impact map for 13 seas facing districts. Based on the EAP guidelines and forecast impact, it was above 25 per cent of the impact threshold. BDRCS with the support from IFRC, GRC and Climate Centre activated the cyclone EAP for taking early actions to reduce human sufferings.

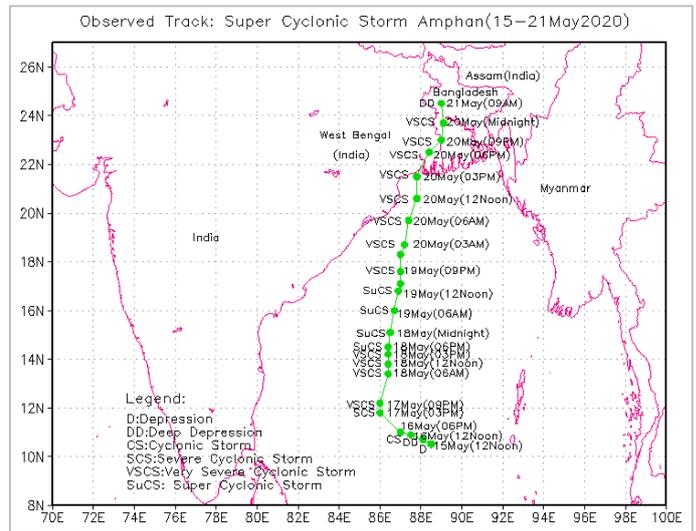


Figure 1: Cyclone “AMPHAN” Track Map (Source: BMD)

Cyclone Amphan caused havoc to the community and household infrastructures and caused further harm to the lives and livelihoods of the people which was already constrained by COVID-19 pandemic. The Government of Bangladesh (GoB) prepared 12,078 cyclone shelters in coastal regions. As per government record, more than 2.4 million people were evacuated, with the help of CPP, BDRCS, Fire Service and Civil Defense (FSCD), Police, Armed Forces, and other organizations, to 14,636 permanent and temporary shelters in 19 coastal districts before the cyclone hit the country's coast. According to the SoS form data of the GoB, cyclone Amphan impacted around 19 districts over the country. Out of these 19 districts, eight districts were among the worst impacted range (from moderate to severe impacts associated with all physical dimensions of the cyclone). Total 154 unions under 34 upazilas (sub-districts) were inundated and 2.6 million peoples were affected. 26 people died in the country due to Amphan. More than 200,000 houses have been fully/ partially damaged; particularly in Satkhira, Jashore, Khulna, Barguna, Bagerhat, Patuakhali, Bhola and Pirojpur districts. With houses damaged and destroyed, people have lost their habitat and the living conditions (sharing space in communal shelters) were not sufficient to maintain reasonable social distance considering the COVID-19 pandemic. Around 51,000 hectares crop and vegetable, and prawn and fish cultivation areas were damaged, around 74 per cent households' food stocks have been destroyed or damaged. 68 per cent agricultural land have been inundated by tidal surge and by saline water. Some 59 per cent of moderate to severe damage on livestock and fisheries production in the affected districts. Cyclone Amphan has destroyed a total of 440 kilometers of road and 76 kilometers of embankment of the coastal area. In the WASH sector, there were 40 thousand toilets and near about 18 tube-well damaged and fully destroyed. 44 per cent educational institutes were fully or partially damaged.

The early actions were implemented in 10 districts (Satkhira, Khulna, Bagerhat, Pirojpur, Barguna, Patuakhali, Lakshmipur, Noakhali, Bhola and Jhalokathi). The EAP was triggered when BMD issued a forecast of a cyclone making landfall in Bangladesh with a wind speeds of 140 – 160 kilometers per hour with 4/5 meters of storm surge in the coastal belt of Bangladesh. Each model, including the BMD, has categorized cyclone Amphan as a very severe cyclone. This forecast was then combined with exposure and vulnerability data (poverty, housing type and number of family dependents) to prioritize communities and to estimate the percentage of houses that could be at risk of destruction in each union. All unions with greater than 25 per cent of houses at risk were placed on a “priority” list (Figure 2). The model analysis also determined the wind distance, direction, and velocity of the wind, which showed that those 10 coastal districts were more at risk. In addition, household asset impact calculations have been made as per the EAP guidelines in the 10 districts. High vulnerability is also considered as a priority of FbF Early Action. The unions on the priority list was then put in order according to the vulnerability index. The EAP was implemented in as many unions as possible, starting with the most vulnerable on the priority list and proceeding down in order of vulnerability. The early actions assisted the community to protect their lives and livelihoods through providing shelter specific evacuation support, first aid, dry food, safe drinking water, oral saline and in consideration of COVID-19, some additional support was provided in which hygiene and safety measures were considered as priority aspects.

BDRCS assisted 36,365 vulnerable people in the identified 10 districts. Visits were conducted by BDRCS units/branches in local areas which were identified as “high-risk” and “risk” categories to identify the actual needs. By talking to the

communities, it was found that the people do not like to go to the shelter because lack of provision of foods and shortage of vehicle support. Many people informed the BDRCS teams that if they could provide with food and evacuation support, that would provide them the incentive to be in the shelter.

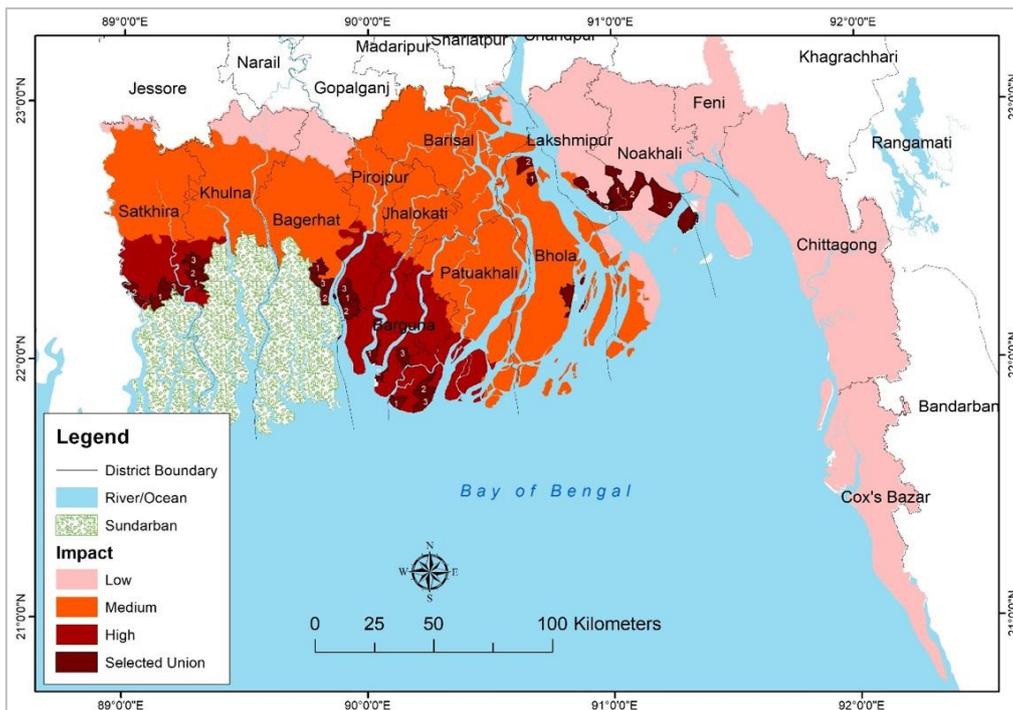


Figure 2: Map of forecasted impact. Prepared by FbF technical team based on RSMC and BMD Forecast on 18 May 2020. (Source: FbF technical team)

Bangladesh was already impacted by the global COVID-19 pandemic, which created an extra pressure to face the cyclone. BDRCS had taken extra precautionary measures for early actions under FbA by the DREF. BDRCS procured and distributed masks and hand sanitizers to the beneficiaries who did not have any facilities. BDRCS staff and volunteers also encouraged people to maintain physical distancing in the shelters where support was provided.

B. OPERATIONAL STRATEGY

Overall objective

The early actions are aimed at reducing the impact by providing people an incentive to evacuate to the cyclone shelters. By providing evacuation transportation for people and livestock, the evacuation ratio can be increased thereby reducing both the loss of life as well as the loss of livelihood due to livestock mortality. The total number of cyclone shelters and beneficiaries was covered by this EAP depending on the cyclone landfall area, access to cyclone shelters, and safe space for keeping livestock etc.

Summary of EAP implementation

Bangladesh Red Crescent Society (BDRCS)

Ahead of the cyclone season, as part of the cyclone preparedness action and considering the COVID-19 pandemic, Bangladesh Red Crescent Society (BDRCS), Cyclone Preparedness Programme (CPP), with Ministry of Disaster Management and Relief (MODMR) of the Government of Bangladesh, with IFRC, American Red Cross, German Red Cross and other partners revised the National Cyclone Preparedness Protocols in line with COVID-19 pandemic and its WHO and national guidelines, and disseminated among the CPP volunteers and BDRCS branches. This enabled BDRCS and CPP to implement the EAP maintaining COVID-19 prevention standards timely and effectively.

Cyclone Amphan early action was an exemplary initiative under FbA by the DREF in Bangladesh where BDRCS collaborated with Ministry of Disaster Management and Relief (MoDMR), Department of Disaster Management (DDM), district and sub-district administrations, local government, CPP, IFRC and in country Red Cross Red Crescent Participating National Societies (PNSs) to implement the cyclone EAP in an exceptionally challenging environment of COVID-19 pandemic. BDRCS EAP activation committee meeting held at the BDRCS NHQ on 18 May 2020, decided to make the final activation of the EAP on the basis of impact identified based on BMD weather forecast, exposure map and vulnerability index of those coastal districts where the cyclone was forecasted to hit. BDRCS directed immediate early actions at the 10 most vulnerable districts to take over all the activities including opening control rooms, conducting emergency coordination meetings, mobilized staff and volunteers and other resources, preparation of cyclone center, dissemination of warning message, prepare transport for evacuation support, dry food and first aid. The BDRCS branches were responsible to implement the early actions with support from CPP and Red Crescent Youth (RCY) volunteers in the district and community.

After the activation of cyclone EAP relevant BDRCS branches started implementing the early actions. Time required to wait for the FbA by the DREF funds to arrive in the country was reduced as BDRCS started implementing early actions using their branch-level pre-allocated decentralized funding for early actions. Once the EAP activated, the implementation process started by the relevant branches.

This forecast was combined with an exposure map, to estimate the percentage of houses that were at risk of destruction in each union. All unions with greater than 25 per cent of houses at risk were placed on a "priority" list. The unions on the priority list were then put in order according to the vulnerability index. According to the cyclone EAP, BDRCS was supposed to do the trigger for two to three districts to reach 20,000 people whereas they did activate it for 10 districts considering the magnitude of the potential impact and the pandemic situation. Due to the COVID-19 situation, the government also increased the number of shelters three times than previous cases. To cover additional shelters and to ensure social distancing and personal hygiene, BDRCS increased the number of unions to respond and the number of targeted people set at 36,365. BDRCS also contextualize the early action in COVID-19 contexts by providing masks, sanitizer etc. to the people.



Figure 4: Dissemination of Early Warning Message (Photo: BDRCS)



Figure 3: Packaging of Procured Dry Food and Others (Photo: BDRCS)

This is the first time, BDRCS activated cyclone EAP and successfully implemented it in 10 coastal districts simultaneously, despite being in the COVID-19 situation which added additional challenges in implementing early actions.

Some of the major achievements of cyclone EAP implementation are:

- Successful implementation of cyclone EAP amid COVID-19 pandemic and lockdown situation in 10 most vulnerable districts in line with the revised national cyclone preparedness protocols.
- Overcoming the time constraints of FbF and made it possible to implement the whole project within a very short span of time before the cyclone made landfall in Bangladesh.
- Active involvement of BDRCS Unit/Branch Executive Committee members in implementing the EAP.
- Ensuring huge procurement to reach 36,365 beneficiaries in 10 districts. In total, BDRCS branches procured about 18,790 kg flattened rice, 2,120 kg puffed rice, 5,205 kg molasses, 4,785 kg sugar, 27,400 packets biscuit, 19,760 pieces soap, 18,768 bottles water, 595 bottles of hand sanitizer and 23,950 pieces of mask for the people along with some lights, candles and other dry food items within a timeline of 3-5 hours on 19 May, 2020 for distribution on 20 May before the cyclone landfall.
- Timely mobilization of BDRCS Units/Branches to begin implementing early actions as per agreed EAP and activation, using BDRCS' decentralized funds which were pre-allocated in all 13 coastal districts branches before the cyclone season.
- Successful coordination between BDRCS, CPP and local government in implementing early actions.
- Evacuated 4,406 livestock to the shelter.
- Disseminated cyclone early warning message along with COVID-19 safety messages to all coastal districts to aware people and supported in reducing the transmission risk.
- Mobilized 87 vehicles around 40 shelters in Bagerhat, Pirojpur and Barguna to support evacuation for people along with their livestock and movable assets maintaining COVID-19 safety measures.
- Efforts were made to ensure the COVID-19 preventive measures among the people in the shelters to reduce the related challenges as much as possible.



Figure 5: Loading of the Dry Food and Other Items for Transportation to Cyclone Shelter (Photo: BDRCS)

BDRCS branches were successful enough to involve local government to reach shelters and areas which were not accessible before cyclone due to ferry and other transport related issues. The following table shows the details of the location wise people reach information with cyclone shelters covered:

Table 1: Number of Shelters and Beneficiaries

District	Sub-district	Union	No. Cyclone shelters covered	No of People Reached
Barguna	Barguna Sadar	8	25	2,500
Patuakhali	Kalapara	7	9	1,000
	Rangabali		19	3,800
Pirojpur	Indurkani	6	8	5,000
	Mathbaria		30	
	Vandaria		1	
Satkhira	Shyamnagar	12	12	2,500
Khulna	Dacope	9	10	2,000
	Koyra		20	3,300
Bagerhat	Rampal	5	15	1,000
	Mongla		6	1,000
	Sarankhola		9	6,000
Bhola	Bhola Sadar	4	6	1,500
Lakshmipur	Ramgati	3	7	2,000
Noakhali	Subarnachar	2	7	4,000
Jhalokathi	Jhalokathi Sadar	8	4	765
	Nalchiti		2	
	Kathalia		2	
Total	18 Sub-District	64	192	36,365

The Cyclone Preparedness Programme (CPP) is a joint disaster management program of the Government of Bangladesh and BDRCS, established in 1973. The CPP disseminates early warning through more than 55,515 volunteers in 13 coastal districts. The activation was pulled together with the support of Cyclone Preparedness Programme (CPP) since the CPP has the largest humanitarian presence in the coastal districts through its community-based volunteer system. CPP volunteers has played a crucial implementing role in cyclone Amphan early action at the community level. CPP has played a significant role in further strengthening the coordination of BDRCS and RCRC Movement with the Government of Bangladesh at the strategic level in decision-making regarding cyclone Amphan.

German Red Cross (GRC)

The German Red Cross (GRC) is the key technical partner for BDRCS and supported the development and implementation of the EAP for cyclone and flood for Bangladesh. Under this EAP, GRC provided substantial human resource and technical supports for successful implementation of the activities. GRC supported BDRCS for implementing cyclone Amphan early actions by forming the FbF technical team for forecast monitoring, reporting, dissemination of information within RCRC Movement partners and FbF working group. GRC provided technical support to BDRCS and IFRC team at country level, as well as in regional coordination for activating of the EAP. As soon as the trigger reached, GRC collaborated with BDRCS to implement the early actions by advising field staff on affected districts and unions, by providing the operational link between BDRCS, CPP, and community members, and by overseeing the technical part of the trigger activation. In close collaboration with BDRCS' DRM department, GRC facilitated partnerships and alliances within the Red Cross Red Crescent Movement but also with other humanitarian and governmental partners such as the World Food Programme and the DDM.

Red Cross Red Crescent Climate Centre (RCCC)

The RCCC supports BDRCS, GRC, BMD and other partners to anticipate changes in climate-related risks and provides technical support to the FbF project by analysing climate data for improved early action triggers. Technical guidance is available both at HQ level for policy and strategy matters as well as at country level via a technical advisor. In addition, the RCCC fosters the exchange of climate scientists at the regional and global level also through its strong linkage with academic institutions. The RCCC was instrumental in developing the trigger for cyclones and will be consulted for its assessment when trigger conditions are being reached. The RCCC technical adviser based in Dhaka together with BMD monitored the forecasts and advised on triggered conditions.

IFRC

For this EAP, IFRC Country Office (CO) in Bangladesh was involved in the broader strategic discussions of the FbA activation at country level with BDRCS and Movement partners, as well as with the Asia Pacific Regional Office (APRO and IFRC Secretariate in Geneva. IFRC CO was also strategically involved in implementation and closely coordinated the update within the Red Cross Red Crescent Movement as well as with other humanitarian and governmental partners. During the implementation of the EAP, IFRC provided financial support from DREF and provided technical guidance.

American Red Cross

As one of the key strategic partners of BDRCS, the American Red Cross has been actively supporting the national and BDRCS' FbF approach. American Red Cross has supported BDRCS branches to strengthen their capacity through providing evolving decentralized funds for early actions which was allocated before the cyclone season in 2020. This fund enabled BDRCS branches to implement the early action activities timely and effectively right after the EAP was activated by BDRCS for this cyclone. The fund used for early action later on reimbursed from this EAP by IFRC's DREF.

Department of Disaster Management (DDM), Government of Bangladesh

Through its extensive humanitarian programming, BDRCS has an excellent collaboration mechanism set up with the Department of Disaster Management (DDM) of GoB, which is being strengthened through the advocacy of the FbF approach. In turn, DDM supported BDRCS' EAP by granting access to government data on vulnerability and by discussing best approaches to implement early actions in a logistically feasible way. BDRCS collaborated with MoDMR & DDM through Humanitarian Coordination Task Team (HCTT) as co-led by the MoDMR, met and communicated on time and complemented government-led response efforts for cyclone Amphan. The Needs Assessment Working Group (NAWG) led by DDM coordinated a rapid joint assessment of the situation in collaboration with the BDRCS and other national authorities and partners with presence in the most impacted areas.

Bangladesh Meteorological Department (BMD)

Bangladesh's Meteorological Department (BMD) is the country's authoritative institute for monitoring cyclone forecasts and issuing cyclone warnings that trigger government response. As such, linkages already exist with the CPP and DDM as BMD's forecasts and warnings are used for direct humanitarian response. For the FbF approach, BMD has been actively involved in the trigger consultation and has taken the lead of a methodology committee consisting of national humanitarian and government stakeholders that defines and reviews the trigger thresholds for natural disasters. For cyclone Amphan trigger, BMD has provided up-to-date forecast information to ensure a lead time that allowed BDRCS timely activation and quick implementation of the early actions under this.

World Food Programme (WFP)

The World Food Programme is implementing the FbF approach for floods and is part of a technical working group together with BDRCS and GRC to jointly advance the research on selection of the vulnerable people and impact analysis as well as to align the FbA-DREF strategy with government counterparts. While WFP was not directly involved in the EAP for cyclones, it remains a strategic partner especially for advocacy purposes at the national and regional level.

Food Security Cluster (FSC)

As this EAP for cyclones includes a food distribution component, the Food Security Cluster was consulted on the standard food package for early action. The food items distributed were based on FSC's recommendations and based on communities' contexts and need. The FbA-DREF was also actively presented at FSC meetings and events to bring interested humanitarian partners on board and increase advocacy efforts.

Timeline of EAP



Figure 6: Timeline of EAP activation and implementation

How the EAP reduced the impact on the population: The early actions

Through interviews from an impact data survey and community consultation in the eastern coastal districts affected by the cyclone Amphan, people stated that the lack of transportation provision for both people and livestock; and the lack of food and water at the cyclone shelter deterred them from evacuating to the cyclone shelter. This is also supported by BDRCS and CPP who have volunteers on the ground in the cyclone prone areas and reported the same findings. The selected early actions performed under this EAP, acted as a convincing example that cyclone impacts can be further reduced with advanced actions.

The early actions through this EAP provided an incentive to people to evacuate out of the landfall area and thereby effectively reduced and helped to avoid the immediate cyclone impact during the landfall like loss of life, loss of livestock's and injuries. Following key early actions at the cyclone shelters in the community level have been performed to reduce the impacts:

- Distribution of food (flattened rice, sugar and high-energy biscuits) and safe drinking water.
- Basic first aid at the cyclone shelters.
- Evacuation transport facilities for people and their movable assets and livestock to the cyclone shelters.
- Installation of artificial light facilities at community cyclone shelter at night.

Operational support services

Human Resources

BDRCS organized training on alert tool and Geographic Information System (GIS) for 22 staff and involved another 26 staff and volunteers in cyclone impact data collection and around 675 RCY and volunteers were involved to ensure effective and efficient early actions. As the command chain was already coordinated and the relevant actors were sensitized of their own duties in the protocol, the implementation went smoothly.

Logistics and supply chain

Local procurement was done by the BDRCS branches in accordance with the operation's requirements, and aligned to IFRC's procurement standards, processes and procedures. Logistics for the bank transfers to the branches via national banks done smoothly as the banking system was already in used due to previous operations. The forecast-based action by DREF covered the bank fees related to these transfers. Transport and distribution costs were included in the budget. With the help of branches, CPP and local authorities, BDRCS distributed the parcels to the evacuees at shelters.

Information Technology

The BDRCS utilized existing capacity to facilitate the collection, collation, analysis and dissemination of relevant multisector data and information to support evidence-based decision making that contributed to an effective humanitarian intervention.

Communications and Information

Information on BDRCS, CPP actions were shared via social media, BDRCS website and other media to highlight the Red Cross Red Crescent actions and ensure transparency, accountability. News include following-

- <https://www.devex.com/news/preparing-for-a-disaster-in-the-middle-of-a-pandemic-97320>
- <https://www.forecast-based-financing.org/2020/05/19/cyclone-amphan-is-approaching-bangladesh/>
- <https://www.facebook.com/Forecast.based.Financing/posts/1098259917218357>
- <http://www.bdracs.org/news/bangladesh-red-crescent-activates-early-action-funds-save-lives>
- <https://reliefweb.int/report/bangladesh/bangladesh-cyclone-amphan-emergency-appeal-n-mdrbd024>
- <https://www.republicworld.com/world-news/rest-of-the-world-news/bangladesh-reports-first-death-from-cyclone-amphan-after-red-crescent.html>
- <https://www.climatecentre.org/news/1285/ifrc-emergency-assistance-for-cyclone-amphan-includes-second-ever-use-of-early-action-funding-mechanism>
- https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/humanitarian_collaboration_and_coordination_in_bangladesh_2nd_draft_12_july_2020_kazi_hq.pdf
- <https://www.humanitarianresponse.info/en/operations/bangladesh/document/bangladeshhctt-cyclone-amphan-response-plan31052020>
- <https://media.ifrc.org/ifrc/2020/05/20/ifrc-releases-forecast-based-funds-impact-super-cyclone-amphan-bangladesh/>

Community Engagement and Accountability (CEA)

BDRCS has trained the RCY volunteers on Community Engagement and Accountability (CEA). BDRCS opened a central coordination centre with the support from trained RCY volunteers as well as the branch offices, a 24-hour hotline was also introduced where a RCY volunteer was always present through shifting duty. The RCY volunteers disseminated cyclone early warning messages to the vulnerable communities along with the COVID-19 safety messages. The RCY volunteers also disseminated the message and take early actions (dry food distribution, evacuation and providing necessary first aid support) before cyclone hit the communities. BDRCS ensured distribution and post-distribution monitoring through establishing feedback response mechanism.

Protection, Gender and Inclusion (PGI)

To ensure security of the people supported through this EAP, dry food, safe drinking water, health materials and hygiene materials distributions were organized accordingly to the [IFRC Minimum Standards for Protection, Gender, Inclusion](#) (e.g. in daylight, in presence of artificial lighting during night, in presence of local community and local government etc.). Also, complaint mechanisms including hotline and complaint box were put in place to register beneficiary complaints such as fraud and safety issues. Distributions were held under monitoring and coordination by unit (branch) Level Officer and volunteers while local emergency officers provided security service.

Planning, Monitoring, Evaluation and Reporting (PMER)

Cyclone Amphan hit the region and crossed Bangladesh when the country was in full lockdown. NDRT member deployment was not possible due to the lockdown and travel restrictions by the government. Local Unit Disaster Response Team (UDRT) members, CPP and community volunteers were deployed to project target areas to monitor the implementation and evaluate the impact of the project. Due to COVID-19 and travel restrictions, there were no on-site monitoring by BDRCS NHQ and IFRC staff. Later, in the post activation phase of the cyclone EAP implementation, BDRCS with the technical support of GRC organized lesson learned workshops, where participants have joined from the concern districts where the EAP was implemented.

Administration and Finance

Both the BDRCS and the IFRC finance and administration team provided necessary support to the operation as requested by response team. This included necessary operational support for review, validation of budgets, bank transfers, and technical assistance to BDRCS on procedures for justification of expenditures, including the review and validation of invoices.

Challenges and lessons learned

The lessons learned exercise was facilitated by the FbF team (from BDRCS and GRC) in consultation with and joined by IFRC CO and American Red Cross. The exercise used mix method of face-to-face meeting and consultation in four districts (Noakhali, Lakshmipur, Bhola and Pirojpur) and virtual meetings in other districts (Satkhira, Khulna, Bagerhat, Barguna, Patuakhali and Jhalokathi). A standard checklist was developed to maintain consistency and coherence in information collection.

The learnings from FbA are following:

Forecast Trigger and Impact of Early Action

FbF impact model validation was done based on the field survey reports (D form and SOS) from 12 unions of Shyamnagar upazila (sub-district) under Satkhira district and seven unions of Koyra upazila under Khulna district. The unions were classified as severely damaged with over 50 per cent population in the unions affected. In Koyra upazila, four unions out of seven, were severely damaged and according to model the impacts on household assets was minimum 25.5 per cent. While in Shyamnagar upazila, seven unions were severely damaged (more than 27.5 per cent household assets forecasted impact).

The Amphan wind speed observed by BMD at different stations in the coastal districts of Bangladesh and the model estimates are found within +/- 15 per cent and "orange" is the line of perfect match.

1. It was difficult to use weather model forecast by the European Centre for Medium-Range Weather Forecasts (ECMWF), Weather Research and Forecasting Model (WRF) and other, when low pressure was not well formed and far away (>1000 km) from the coast.
2. Different websites and models, including ECMWF, Joint Typhoon Warning Centre (JTWC), Global Forecast System (GFS), etc. indicated cyclone likely to hit Bangladesh but no warning/advisory message was issued from BMD until a well-marked depression was formed.
3. Very wide range of BMD forecast showed west of Sundarban forest to Hatiya likely to cross with wind speed 145 kilometers per hour. Observed data showed wind speed crossed only 63 kilometers per hour in Hatiya. But the observed wind speed at Satkhira was 151 kilometers per hour. Forecasted wind speed for each union had ± 15 per cent error with respect to observation by BMD.
4. The technical committee's approval was needed to use the Indian Meteorological Department (IMD) forecast, which allowed FbF team to have lead time of 48-52 hours.
5. Need to change the forecast to impact based forecast. In addition to the wind need to add the rainfall intensity.
6. Beside of activation trigger, a readiness trigger needs to be included in the revise EAP document. The pre-activation may use ECMWF, GFS and JTWC tropical cyclone prediction models in addition to IMD and/or BMD. At least two or more models shows similar forecast and highly likely the wind speed exceed 125 kilometers per hour (impact over 25 per cent of household assets) at the time of hit in the coastal area of Bangladesh and also well marked depression formed in the Bay of Bengal with lead time 72-120 hours.
7. Four districts which were forecasted with high impact, found very good agreements with the field data. Survey data (D form) in two upazilas i.e. Shyamnagar in Satkhira and Koyra in Khulna districts shows severely damaged -11 unions (more than 50 per cent affected population) and FbF team found 10 unions of which the model predicts the impact over 25 per cent.

Coordination, Management and Financing

1. Close coordination between CPP and BDRCS was found effective in implementing EAP in coastal districts.
2. Coordination between local government and BDRCS was in the highest level. In some districts local government provided support to BDRCS local branches for the implementation of early actions.
3. The communication at branch level during implementation of cyclone EAP was well appreciated at all levels.
4. There was some communication gap with CPP and BDRCS branch at shelter level as CPP and BDRCS were receiving instruction from different entities and there were gaps in understanding of FbF. It identifies the need of more common orientation for CPP volunteers and BDRCS branches to make common understanding on FbF and anticipatory actions/early actions.
5. Effective coordination and collaboration are highly required for EAP implementation in the field level. In some districts such coordination resulted very positive outcome. However, that need to be improved in some districts.
6. In some cases, lack of proper skill in implementing EAP and knowledge-gap on EAP and FbF has been observed among some of the key stakeholders like executive committee (EC) members, CPP and RCY volunteers, etc.
7. Decentralized fund made available at unit (branch) level of BDRCS was very effective, especially in such a pandemic situation, and efficient in utilizing the fund for preparedness. This decentralized approach was proven to be very effective in ensuring availability of funds at local level to implement immediate anticipatory actions timely.

Selection of Early Actions

1. The selection of early actions i.e. dry food, water, evacuation and first aid were relevant considering the need and situation according to implementing branches.
2. Inclusion of early actions related to COVID-19 was highly appreciated among all stakeholders i.e. local government, CPP, BDRCS branch and community people considering the timely initiative to deal with pandemic situation.

Procurement

1. Procurement was challenging due to lockdown situation, shortage of stock and manpower.
2. Forming a procurement committee according to the EAP and FbF implementation guideline was an effective approach in this operation. It would be more effective if the committee consists of skilled manpower from the

branch having prior experience of procurement.

3. There was requirement of some flexibility of procurement items/alternative items considering the supply and availability of items in the market during the emergency situation.

Packaging, Transportation and Distribution at shelter

1. Packaging was time consuming and took a significant amount of time to process.
2. There was a severe shortage of local transport due to inclement weather and COVID-19 lockdown situation. There was a shortage of vehicles to evacuate people, transport relief supplies and volunteers. The local administration and the CPP provided support, though it was not adequate compared to the need. It is important to communicate with the vehicle owners/associations/transport authorities or make an agreement with owners' association to arrange required vehicles prior to the cyclone season to overcome the challenge during EAP implementation.
3. Separate room and washroom arrangement for male and female was done in some shelters based on available facilities and in many cases, it required some cleaning as some shelters remained closed, apart from cyclone time.

Evacuation

1. There was a mixed reaction among people regarding evacuation. People were basically reluctant to leave their properties in an uncertain situation and waited until the weather became extreme and forced them to move. In many cases it was the male member of the family who stayed at home with livestock and assets.
2. Transport unavailability was a major concern during evacuation. In such cases, BDRCS evacuation support played an important role and in future, it needs to be more coordinated with local CPP and vehicle owners
3. As people rushed to the shelter when the cyclone started landfall, safety issues became a concern and possibilities of different casualty increased due to the strong winds. BDRCS first aid trained volunteers supported people with minor injury and proved to have an effective early action.

COVID-19 related learning

1. Cyclone shelters were not designed considering any pandemic situation. In this situation, COVID-19 risks were required to be managed within the existing structure and facilities of the cyclone shelters. However, efforts have been made to comply according to the government's hygiene and health instructions with limited resources (disinfects and sanitizing items) and capacities.
2. Government's initiative of including non-traditional cyclone shelters, such as schools and other concrete structures was commendable. This arrangement allowed to reduce the number of people in each of the safe shelters.
3. Masks and adequate hand sanitizers were provided for people considering COVID-19. But local people were not much aware about how to use mask properly and in some cases, were less aware about the importance of personal hygiene and sanitization.
4. Visibility items seemed more effective in communicating required information or awareness message. COVID-19 awareness could be increased in the cyclone centers by ensuring different visibility.

Learning from BMD

1. After the collaboration with BDRCS in Cyclone Amphan, BMD identified the use of impact-based forecast (IBF) for the implementation of FbF early actions and BMD is now willing to focus more on IBF for better implementation in future
2. BMD is positive to focus on area specific forecast for cyclone using a GIS map for different uses considering the user end utility of the forecast
3. Key goals in this regard to work on -
 - Increased efficiency: Actors can use early warnings from forecast to implement timely preparedness and early actions before a potential disaster occurs.
 - Increased knowledge: Actors can anticipate the location, intensity, probability and duration of an extreme event.
 - Cost effectiveness: Actors can reduce the cost of future humanitarian interventions through actions that protect lives and livelihoods.
4. BMD, BDRCS and RCRC movement partners can work together to better serve people with better forecast and impact information
5. As the cyclones in recent years are changing in terms of their tracks, longer term prediction would be very helpful

BDRCS and BMD should conjointly develop and establish a SOP (Standing Operational Procedure). It will help both the organizations to participate easily for implementing early actions.



Lesson Learned Meeting with Government Administration. (Photo: BDRCS)



Virtual Lesson Learned Workshop Through Zoom. (Photo: BDRCS)



Participants of Virtual Lesson Learn Workshop (Photo: BDRCS)



Interactive Session of Face-to-Face Workshop (Photo: BDRCS)

Recommendations

From the lesson learnt workshop with respective RC units (branches), the EC members, Unit Level Officers (ULOs) and RCY volunteers, CPP, local government and other stakeholders the following recommendations are made:

1. Executive Committee members proposed for an agreement with district level chamber of commerce to ensure quick procurement and timely delivery of items as required for any emergency.
2. In the context of changing EC members, turnover and joining of new volunteers, refresher training/orientation on early actions and FbF for each of the units/branches need to be arranged based on requirement.
3. FbF team should update the shelter, supplier and transport database on a regular basis to keep it more useful and relevant during implementation, relevant framework agreements needed to be in place to smooth the future interventions.
4. Procurement Policy may be reviewed considering the emergency situations of FbF, context of area, availability of items and others relevant context.
5. More involvement of CPP, especially on evacuation, was recommended by units/branches. A funding option for CPP to ensure evacuation and cleaning at shelter level will significantly increase the number of evacuated people through contributing on vehicle hiring and supporting people for evacuation.
6. Organize and ensure coordination meetings, orientation and training with govt. and non-govt. actors before the cyclone season. Year-round events at unit/branch level should be arranged and an action plan can be prepared including all relevant actors/stakeholders.
7. Need to organize training at all levels including CPP to create a clear idea about the FbA contents and volunteers need to be trained on different skills like unit disaster response team (UDRT), community disaster response team (CDRT), search and rescue (S&R), etc. This will include necessary orientation/training on logistics/procurement, need assessments, basic code of conduct, fraud and corruption prevention, PGI, CEA, etc.
8. It is important to provide adequate search and rescue equipment and PPE at the unit/branch level for the volunteers to ensure proper implementation of early actions and safety of volunteers.
9. Extensive pre-awareness activities can be arranged at the local level.
10. Units (branches) need to develop and maintain communication with local vendors for all relevant items including

transport owners and drivers.

11. Need to increase decentralization of funds for implementing early actions within a very limited time as utilization of EAP funds may take time during emergency.
12. Need to increase number of volunteers' insurance in each district to ensure the availability of required number of volunteers during implementation of EAP.

C. DETAILED OPERATIONAL PLAN



Livelihoods and basic needs

People reached: 36,365

Male: 50%

Female: 50%

Livelihoods Outcome 1: The affected population has an incentive to come and stay in the cyclone shelter resulting in fewer deaths, less injuries, fewer livestock and asset losses.

Output 1.1: Basic needs assistance for livelihoods security including food is provided to the most vulnerable targeted communities who took shelter in Cyclone Shelter

Indicators:		Target	Actual
36,365 people reduced the risks by taking shelter, received dry food and brought 4000 livestock with them to the cyclone shelter.		20,000	36,365
P&B Output Code	Activities planned		
AP008	Distribution of Biscuit / Dry food		
AP008	Ensuring artificial light at the cyclone shelters		
AP008	Provide transportation facilities to evacuate people and livestock		

Narrative description of achievements

Procurement and distribution of dry food

A total of 36,365 people was reached by dry food support before landfall of cyclone Amphan in a total of 192 cyclone shelters under 10 coastal districts. The food was procured from the local district markets and packaged in the local district BDRCS units/branches and some were packaged in the cyclone shelters. Based on the availability the following items of dry food were procured and distributed at the shelters during early actions of cyclone Amphan.

Table 2: Distributed dry food items

Product	Quantity per beneficiary
Flattened Rice/Puffed Rice	1 kg
Biscuits/ Packet Cake	2 packets
Sugar/Molasses/Sweets etc.	0.5 kg

The dry food items were procured considering the need of targeted people and availability in local market. BDRCS had to procure the food items while the country was under full lockdown due to COVID-19.

Ensuring artificial light at the cyclone shelters

Power supply to cyclone prone area of Bangladesh has been disrupted due to heavy winds and rains before and in the aftermath of cyclone Amphan. BDRCS provided torchlights and candles for targeted people who took shelter wherever possible. During cyclone Amphan, BDRCS provided 6 torchlights, 18 batteries and 3,550 candles for artificial light at cyclone shelters. During the implementation of EAP activities the country was under full lockdown for the global COVID-19 pandemic and most of the shops were closed, thus, BDRCS branch offices could not buy enough torchlight and batteries. As alternative options BDRCS branches provided candles along with lighters.

Transport facilities for evacuation of people with moveable assets and livestock

This year BDRCS could not provide massive evacuation support but RCY volunteers supported CPP volunteers during evacuation of people along with their livestock and movable assets. During evacuation arranging sufficient transport facilities was not possible as country was under full lockdown due to COVID-19. There was shortage of vehicle and at the same time there was health concern about using the vehicles. In addition, the weather was clear and shiny before the landfall of cyclone Amphan. As a result, some people were reluctant to evacuate.

Challenges: The global COVID-19 pandemic was the main barrier for procurement, arranging transportation and distribution. Evacuation was challenging due to fear of COVID-19 pandemic. The markets were closed mostly and even where shops were opened, had very limited stocks. Similarly, due to COVID-19 pandemic, there was shortage of vehicle es.

Lesson learned: A MoU is needed with the local chamber of commerce or with the vendors for fastening the procurement and packaging and transportation. Budget should be updated concerning future pandemic or other health issues. The people were quite reluctant to understand the seriousness of the situation and needed more convincing. Needs close coordination with the district transport agency for vehicle support for evacuation.



Health

People reached: 36,365

Male: 50%

Female: 50%

Health Outcome 1: Vulnerable people's health and dignity are improved through increased access to appropriate first aid services

Output 1.1: Communities are supported by BDRCS to effectively respond to first aid needs during an emergency

Indicators:	Target	Actual
36,365 people at the cyclone shelter that receive first aid services, mask, hand sanitizer, gloves, and oral saline	20,000	36,365

P&B Output Code	Activities planned
AP022	Distribution of ORS to people who took shelter at Cyclone Shelter
AP022	Provide first aid support to people who took shelter at Cyclone Shelter

Narrative description of achievements

Distribution of ORS and first aid support

As a pre-identified early action defined in the EAP the oral rehydration saline (ORS) was provided to the beneficiaries at household level. About 6,500 ORS were distributed to the shelters. BDRCS trained RCY volunteers were in the field to support CPP volunteers for evacuation support and in the shelter for assisting injured people by providing first aid support.

COVID-19 Safety Measures

Considering global COVID-19 pandemic, the country went into lockdown for a long time before the cyclone season. BDRCS with support from IFRC, GRC and AmCross adopted safety measures in the CPP guidelines. BDRCS provided PPE for the CPP and RCY volunteers before the cyclone season. Masks and hand sanitizers were provided among the targeted people during evacuation and distribution of dry food. Masks were provided to those who did not have any and hand sanitizers were provided at shelter based. Before evacuating people, cyclone shelters were disinfected with the support of BDRCS trained volunteers.

Challenges: Procurement of ORS, masks and hand sanitizers in bulk amount was very challenging during the lockdown in district markets. The market was low on stock during lockdown. In addition to that maintaining social distance during evacuation was also challenging. However, Government's initiative of including non-traditional cyclone shelters, such as schools and other concrete structures was commendable. This arrangement allowed to reduce the number of people in each of the safe shelters.

Lesson learned: Need to include preventive measures for infectious disease in the EAP. Coordination with medical suppliers/vendors is also needed by the local BDRCS branch for fast procurement of ORS, ensuring quality assurance and preventive measures for infectious diseases.



Water, sanitation and hygiene

People reached: 36,365

Male: 50%

Female: 50%

WASH Outcome 1: Vulnerable people have access to safe drinking water during emergency

Output 1.1: Communities are provided by NS with improved access to safe water			
Indicators:		Target	Actual
36,365 people have access of safe drinking water and soap		20,000	36,365
<i>P&B Output Code</i>	Activities planned		
AP026	<i>Distribution of drinking water</i>		
AP026	<i>Provision of personal protective equipment and hygiene items</i>		
Narrative description of achievements			
<p>Distribution of safe drinking water, PPE and Hygiene Items As a pre identified early actions, water was provided among the targeted people at the cyclone shelters. Safe drinking water is an important issue during any disaster. A large volume of safe drinking water was bought during procurement of dry food based on the availability of the local markets. BDRCS provided 2 litres of safe drinking water per person during the dry food distribution. Some BDRCS branches were unable to buy large volume of safe drinking water, so instead they provided drinking water from available safe tube well and other water points. As people took shelter earlier, so the volunteers prepared the toilets for the targeted people, arranged hand washing facilities and provided them with a soap per household for maintaining hygiene.</p> <p>Challenges: In a district market, finding large amount of safe drinking bottle water was quite difficult and during the COVID-19 lockdown the vendors were low on stocks as there was no mass gathering where bottle water may be needed. Buying a large volume of water from a single vendor is very difficult during such emergency situation.</p> <p>Lesson learned: Procuring from more than one vendor was helpful. Provision of soap as hygiene material was also found to be very helpful for the beneficiaries.</p>			

Strategies for Implementation

Strengthen National Society	
Outcome 1: National Society capacity building and organizational development objectives are facilitated to ensure that National Societies have the necessary legal, ethical and financial foundations, systems and structures, competences and capacities to plan and perform	
Output 1.1: NS have effective and motivated volunteers who are protected	
<i>P&B Output Code</i>	Activities planned
AP040	<i>Orientation for the BDRCS Volunteers on EAP prior to the cyclone season</i>
AP040	<i>Orientation for the BDRCS volunteers on monitoring and evaluation (M&E)</i>
AP040	<i>Orientation for the CPP Volunteers on EAP prior to the cyclone season</i>
AP040	<i>Ensure insurance/ accidental incident coverage for the volunteers</i>
AP040	<i>Pre-stock the lights facilities used at the Cyclone Shelter</i>
AP040	<i>Coordination and active participation of RCY, CPP and community volunteers.</i>
Output 1.2: National Societies have the necessary corporate infrastructure and systems in place	
<i>P&B Output Code</i>	Activities planned
AP042	Staff insurance/ accidental incident coverage
AP042	Framework agreement with suppliers
AP042	Coordination and active participation of BDRCS staffs
AP042	Deployment of NDRT/ NDWRT members
AP042	Ensure sufficient logistic arrangements are in place like vehicle, labour, stationary, printing, photocopy, banner, IEC etc.

Narrative description of achievements

The visibility of BDRCS and IFRC was ensured by using BDRCS and IFRC logos on banners and volunteer gears throughout the operation. Disaster Risk Management Department of Bangladesh Red Crescent Society arranged two regional workshops in November 2019, one in Khulna and another one in Chattogram for the BDRCS Unit/Branch Level Officers' (ULOs), RCY volunteers, CPP volunteers for better understanding of FbF/FbA and procurement policy and guidelines of BDRCS and IFRC. BDRCS ensured insurance of its staffs who are working for the FbF project. BDRCS provided extra batteries for the megaphone for disseminating cyclone early warning messages along with COVID-19 safety measures. Active participation and coordination among RCY volunteers, CPP volunteers and community volunteers were found during the early actions of Cyclone Amphan. There was no accidental incident of RCY volunteers found during the implementation of the EAP. No staff from BDRCS NHQ were deployed except ULOs as the country was under full lockdown and if anyone travelling from Dhaka to any district s/he needed to go under mandatory quarantine for 14 days. BDRCS's communications department prepared TV programmes and articles about the EAP operation, interviewed beneficiaries and disseminated it through national broadcasting channels and newspapers, websites and other online platforms in Bangladesh. BDRCS continuously coordinated with HCTT members and FbF Working Group during the operation to ensure effective coordination between agencies that are providing humanitarian assistance. BDRCS branches started advocacy with the local level suppliers/vendors through their respective branch executive committee to establish necessary framework agreements.

D. Financial report

The Forecast based Action by the DREF allocated CHF 134,317 to implement early actions to reduce and mitigate the impact of cyclone Amphan in coastal districts of Bangladesh. The total expenditure recorded by end of operation was CHF 70,061 (52.16 per cent spent of budget). The balance funds will be returned to the EAP DREF pool. For further details on expenditure, please refer to attached final financial report.

FBAF Early Actions

FINAL FINANCIAL REPORT

Selected Parameters			
Reporting Timeframe	2020	Operation	PBD051
Budget Timeframe	2020	Budget	APPROVED

Prepared on 29/Oct/2020

All figures are in Swiss Francs (CHF)

MDRBD024 - Bangladesh - Cyclone Amphan / EAP2018BD01

Early Actions Timeframe: 18 May 2020 to 18 Jun 2020

I. Summary

Opening Balance	0
Funds & Other Income	134,317
FBAF Allocations	134,317
Expenditure	-70,061
Closing Balance	64,256

II. Expenditure by area of focus / strategies for implementation

Description	Budget	Expenditure	Variance
AOF1 - Disaster risk reduction		1,175	-1,175
AOF2 - Shelter		16,538	-16,538
AOF3 - Livelihoods and basic needs			0
AOF4 - Health			0
AOF5 - Water, sanitation and hygiene			0
AOF6 - Protection, Gender & Inclusion			0
AOF7 - Migration			0
Area of focus Total		17,713	-17,713
SFI1 - Strengthen National Societies			0
SFI2 - Effective international disaster management	134,317	52,348	81,969
SFI3 - Influence others as leading strategic partners			0
SFI4 - Ensure a strong IFRC			0
Strategy for implementation Total	134,317	52,348	81,969
Grand Total	134,317	70,061	64,256

FBAF Early Actions

FINAL FINANCIAL REPORT

Selected Parameters			
Reporting Timeframe	2020	Operation	PBD051
Budget Timeframe	2020	Budget	APPROVED

Prepared on 29/Oct/2020

All figures are in Swiss Francs (CHF)

MDRBD024 - Bangladesh - Cyclone Amphan / EAP2018BD01

Early Actions Timeframe: 18 May 2020 to 18 Jun 2020

III. Expenditure by budget category & group

Description	Budget	Expenditure	Variance
Relief items, Construction, Supplies	69,148	48,547	20,601
Food	35,160	48,547	-13,387
Water, Sanitation & Hygiene	14,064		14,064
Medical & First Aid	5,860		5,860
Other Supplies & Services	14,064		14,064
Logistics, Transport & Storage	7,688	1,417	6,271
Distribution & Monitoring	2,344		2,344
Transport & Vehicles Costs	5,344	1,417	3,927
Personnel	31,117		31,117
National Society Staff	24,319		24,319
Volunteers	6,798		6,798
Workshops & Training	9,376		9,376
Workshops & Training	9,376		9,376
General Expenditure	8,790	292	8,498
Travel	1,758		1,758
Office Costs	1,172	292	880
Other General Expenses	5,860		5,860
Contributions & Transfers		15,529	-15,529
Cash Transfers National Societies		15,529	-15,529
Indirect Costs	8,198	4,276	3,922
Programme & Services Support Recover	8,198	4,276	3,922
Grand Total	134,317	70,061	64,256