



# Extreme Weather and Disaster Preparedness in the Rohingya Refugee Response

## Monsoon Season 2018 Lessons Learnt



Enhancing disaster preparedness for effective response

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## ACRONYMS

AFD	Armed Forces Division
BMD	Bangladesh Meteorological Department
CPP	Cyclone Preparedness Programme
CWC	Communications with Communities
DC	Deputy Commissioner
DPHE	Department of Public Health Engineering
DRR	Disaster Risk Reduction
EAT	Emergency Advisory Team
ECHO	European Commission Humanitarian Aid
EMPRTF	Emergency Preparedness and Response Task Force
EOC	Emergency Operation Centre/Emergency Control Room
ETF	Emergency Taskforce
ETS	Emergency Telecommunications Sector
GIS	Geographic Information System
HBC	Humanitarian Benchmark Consulting
IASC	Inter-Agency Standing Committee
IFRC	International Federation of Red Cross
IOM	International Organization for Migration
ISCG	Inter Sector Coordination Group
JRP	Joint Response Plan
LGED	Local Government Engineering Department
NPM	Need and Population Monitoring unit in IOM
RRRC	Refugee Relief and Repatriation Commission
SAR	Search and Rescue
SMEP	Site Maintenance Engineering Project
SMS	Site Management Support
SOD	Standing Orders on Disaster
SOP	Standard Operating Procedure
UNDP	United Nations Development Programme
UNHCR	United Nations High Commissioner for Refugees
VHF	Very High Frequency
WASH	Water, Sanitation and Hygiene



## INTRODUCTION

The Rohingya refugee response in Cox's Bazaar, Bangladesh, is unique not only in terms of the rapidity and scale of the 2017 influx, but also in the extent of exposure to the refugee camps to seasonal variability, extreme weather and natural disaster risk.

One of the most disaster-prone countries in the world, Bangladesh each year experiences a high degree of seasonal variety, including the southwest monsoon and two cyclone seasons. With its long coastline on the Bay of Bengal and with a landscape consisting of flat deltaic plains and sandy hills, Cox's Bazaar is highly exposed to natural hazards and extreme weather, including cyclones, torrential rain, landslides, flash floods, storm surges and extreme temperatures.

Even in the absence of a major disaster, this climatic context has considerable impact on the refugee response operation in Cox's Bazaar; between 11<sup>th</sup> May and December 31<sup>st</sup> 2018 a total of 55,057 people in the Rohingya camps were affected by landslides and erosion, flash flood, storms and waterlogging, while a total of 275,000 man hours has been spent restoring in-camp road access due to weather-related disruptions between May and October. Significant investment in preparedness and risk reduction combined with relatively mild climatic conditions have prevented loss of life in the camps in 2018, but further efforts are needed.

The 2018 Monsoon Season Lessons Learned Exercise aims to capture and analyse knowledge acquired by humanitarian actors during their operations preparing for and responding to monsoon impacts in the Rohingya refugee camps. The purpose is to provide a reference document for planning for future monsoon seasons, support evidence-based advocacy, and identify gaps in preparedness which need to be addressed in advance of the 2019 monsoon. The report focuses on the monsoon and does not analyse preparedness or experience with cyclone - a second report will be produced on this topic in early 2019. Similarly, the report focuses on lessons learnt in the refugee camps, not host communities.

The present report has been produced by the United Nations Development Programme DRR Technical Advisory Unit, based on document review, participatory observation, discussions and interviews with the ISCG secretariat, sector coordinators and their teams, and UN agency and NGO staff.

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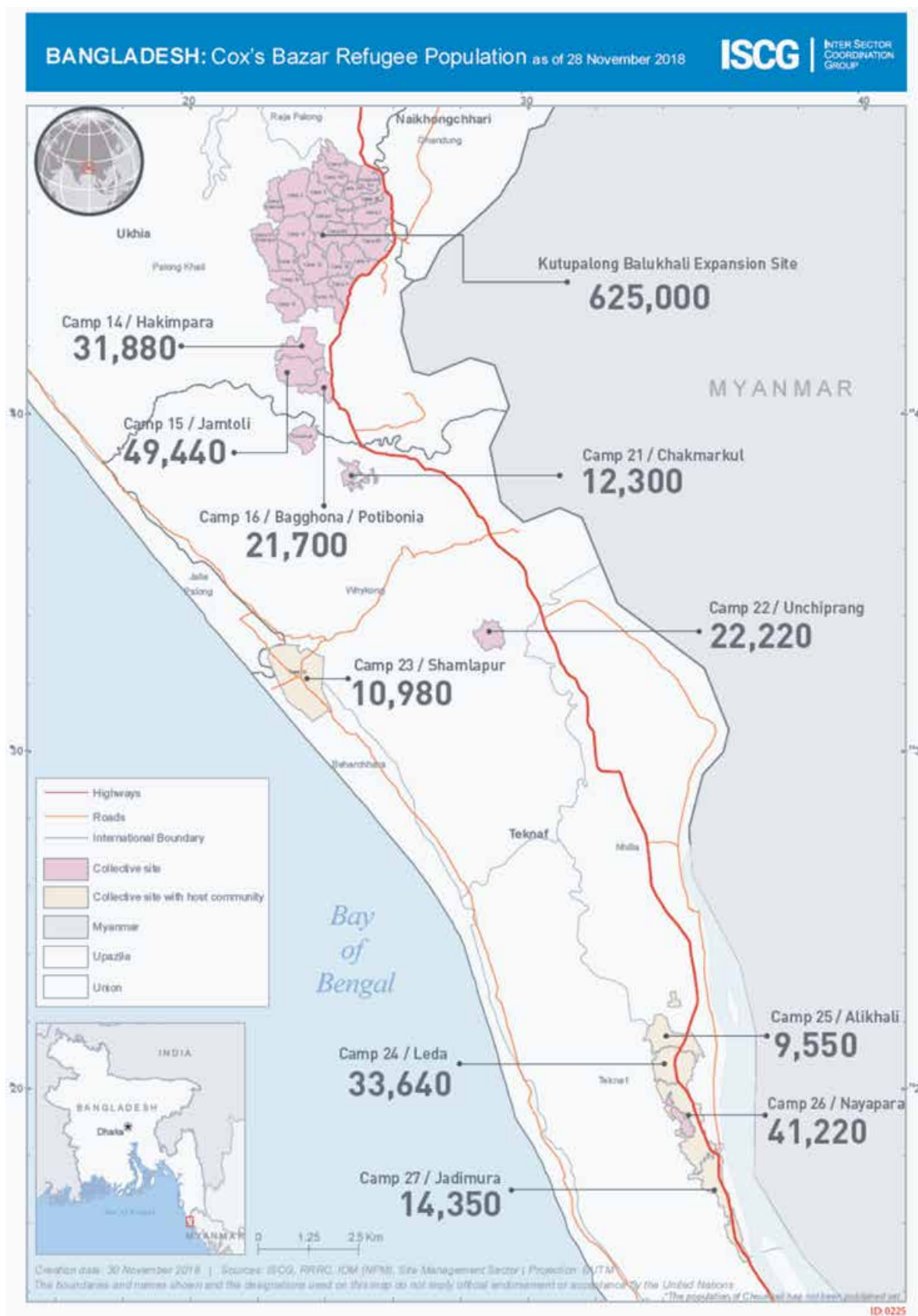


Figure 1: Cox's Bazar refugee population (ISCG 2018)



## BACKGROUND AND CONTEXT

In response to periodic persecution and violence in Myanmar's Rakhine state, over 900,000 Rohingya have sought shelter in Cox's Bazaar, Bangladesh, with more than 700,000 arriving as part of the influx following the August 2017 outbreak of violence. While benefiting from the generous hospitality offered to them by the people of Bangladesh, the scale of the crisis is such that Bangladesh cannot be expected to single handedly meet the most acute needs of the Rohingya. Coordination of international support to the Government of Bangladesh-led response is sector based. The Sector Coordinators forum is chaired by a Senior Coordinator, with partners coordinated under thematic sectors with designated Sector lead agencies (IASC cluster equivalents). The Heads of Sub-Offices Group, also chaired by the Senior Coordinator, provides key decisions at the District level, while the Strategic Executive Group in Dhaka provides strategic oversight and national Government liaison. The Senior Coordinator and the coordination structure are supported by a secretariat.

The area in which the Rohingya refugee camps are located is highly exposed to disastrous impacts from natural hazards. Unlike the majority of Bangladesh, the terrain Cox's Bazaar is hilly, with sandy slopes vulnerably to landslides triggered by rainfall. The areas in which most of the refugee camps are located is characterized by ravines and hills up to 90m above sea level, with a narrow coastal plain to the west and wetlands abutting the river Naf to the east. The area is seismically active, although rarely felt.

Climate, topography and human interference makes the refugee hosting areas vulnerable to natural hazard impacts triggered by monsoon rainfall. Due to new settlement and firewood consumption, the 34 refugee camps and surrounding areas have seen extensive deforestation and terrain modification in the past year. Pre-existing landslide susceptibility of the sandy hills has been exacerbated by removal of vegetation and hill cutting for shelter, facilities and new roads. Furthermore, new areas of risk were created through use of less compact filler material for construction. In addition to landslides, many areas of the camps are also at risk of flash flooding. Rain water runoff is immediate, causing high-energy discharge that erodes the drainage channels, raising their bed levels with silt. Camp 23 on the coast is vulnerable to low-energy flooding during the coincidence of heavy rain and high tide.

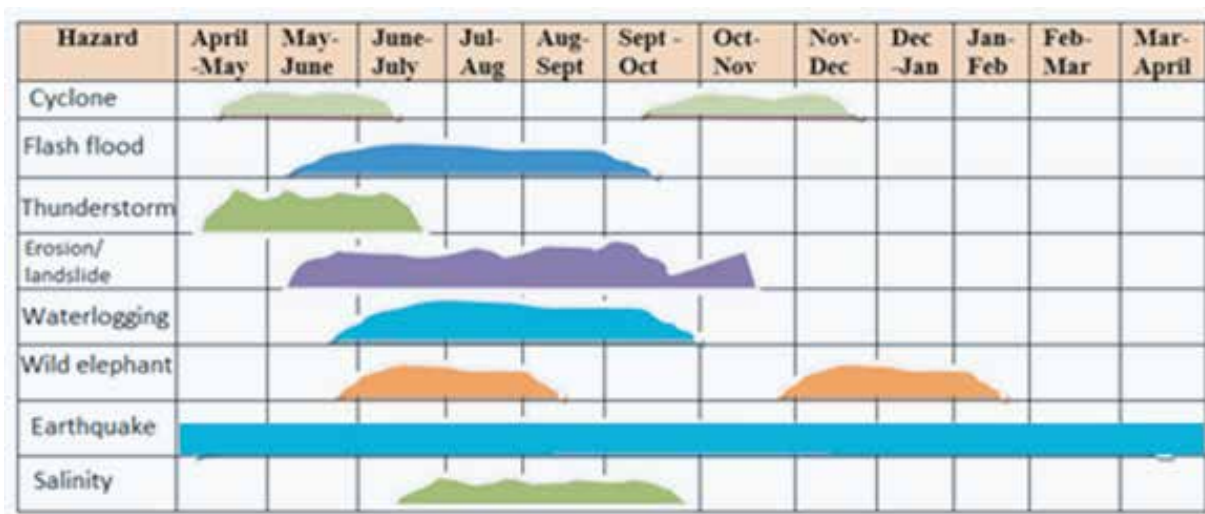


Figure 2: Cox's Bazaar hazard calendar (Cox's Bazaar Disaster Management Plan, 2014)





## METHODOLOGY

The present report was produced between 1<sup>st</sup> October and 5<sup>th</sup> December 2018 by the UNDP DRR Technical Advisory Team, consisting of one national Senior DRR officer and two international Disaster Risk Reduction specialists with multiple prior years of experience in Bangladesh. The team has been continuously on the ground and part of the preparedness coordination in Cox's Bazaar since January 2018.

### Scope of the Lessons Learnt Exercise

The exercise and report cover monsoon-related lessons learnt by UN agencies and I/NGOs participating in the Inter-Sectoral Coordination Group (ISCG) responding to the Rohingya refugee response in Cox's Bazaar, Bangladesh. The 2018 monsoon is defined as the time between 15<sup>th</sup> June and 7<sup>th</sup> October 2018 - the latter date being when the BMD website announced that the monsoon had withdrawn from Bangladesh. The Terms of Reference of the exercise is attached as Annex 1. The report does not cover cyclones or cyclone preparedness - a separate report on this theme will be issued in early 2019.

### Approach

The sources consulted in the course of this exercise are outlined below. Two rounds of Key Informant Interviews have been conducted, one in August and a second one in October 2018. The guides have been attached to the report as Annex 2 and 3. After interviews and discussions, transcripts have been shared with the informants to verify correct understanding of views given. The draft report was shared with ISCG, sector coordinators, and selected key informants in December 2018 for verification of facts and feedback on key recommendations.

Table 1: Sources Consulted for the 2018 Monsoon Lessons Learnt Exercise	
Key Informant Interviews	<ol style="list-style-type: none"> <li>1. On the topic of cyclone preparedness lessons learnt, see Annex 2 and 3</li> <li>2. On the topic of monsoon lessons learnt, see Annex 4 and 5</li> </ol>
Focus Group Discussion	<ol style="list-style-type: none"> <li>1. Site Management Support Agencies, (25<sup>th</sup> October 2018)</li> <li>2. Education sector partners, (31<sup>st</sup> October 2018)</li> </ol>
Events	<ol style="list-style-type: none"> <li>1. Weekly Emergency Task Force meetings, February - November 2018</li> <li>2. WFP "DRR - Lessons Learned &amp; Way Forward Workshop, 24-25 Oct 18"</li> <li>3. ECHO DRR Consortium "Disaster Preparedness in Cox's Bazaar consultation - Key gaps, challenges and way forward", 4<sup>th</sup> December 2018.</li> </ol>
Document Review	<ol style="list-style-type: none"> <li>1. Emergency Task Force meeting minutes in the period Jan - Oct 2018 (ISCG, 2018)</li> <li>2. Lessons learned - Monsoon Rains 9 - 24 June 2018 report (ISCG, 2018)</li> <li>3. Cyclone and Monsoon Preparedness Plans, versions 1-9 (ISCG, 2018)</li> <li>4. Cox's Bazaar District Disaster Management Plan (Government of Bangladesh, 2014)</li> <li>5. Ukhia Upazila Disaster Management Plan (Government of Bangladesh, 2014)</li> <li>6. Humanitarian Bamboo Technical Report (Humanitarian Benchmark, 2018)</li> <li>7. Key changes during 2018 monsoon season (ACAPS-NPM Analysis Hub, 2018)</li> <li>8. Snapshot - Monsoon Rain Based on Rohingya Community Feedback (Internews, 2018)</li> <li>9. What Matters? Humanitarian Feedback Bulletin, eds. 1-13 (BBCMA/TWB/Internews)</li> </ol>



## KEY PROCESSES LEADING UP TO JUNE 2018

Concerns about the potential impact of monsoon and natural disaster on the refugee population and the surrounding host communities arose quickly after the August 2017 influx of Rohingya refugees into Cox's Bazaar. The growth of the Kutupalong-Balukali site highlighted how the hazardous potential of the hilly landscape for landslide was being exacerbated by rapid deforestation and human interference such as hill-cutting. Similar concerns applied to smaller Teknaf camps on steep hills surrounded by low-lying paddy fields, such as Chakmarkul and Unchiprang; however, initial efforts focused primarily on the Ukhia site.

Shortly after the influx, ISCG therefore requested support from OCHA to develop a first cyclone preparedness plan for the Rohingya camps and settlements. Humanitarian response to Cyclone Mora, which made landfall in Cox's Bazaar in May 2017, had been coordinated by ISCG. The 2017 Cyclone Preparedness plan was developed with OCHA support in November 2017 for a Mora-equivalent scenario was developed with the sectors and became the basis for subsequent monsoon and disaster preparedness plans. Similarly, the outputs of an early February 2018 workshop on cyclone preparedness co-facilitated by ISCG and the Cyclone Preparedness Programme fed heavily into monsoon preparedness as well. OCHA continued to provide support to preparedness through secondment in the first half year of 2018 and several short missions.

However, disaster risk management within the refugee response started without comprehensive baseline information about flash flood and landslide risk in the camps. The Comprehensive Disaster Management Programme (2005-2015) had previously facilitated the development of an Ukhia Upazila Disaster Management Plan and landslide risk assessment in high-risk locations in the district. However, the Kutupalong-Balukali site was established in a protected forest area for which no risk assessments had previously been done. This lack of previous risk assessments, sparse community knowledge of risks within protected forested area, and rapid deforestation placed government and humanitarian actors in a situation of trying to gauge natural hazard risk from a minimum of baseline information.

In response to this uncertainty, UNHCR initiated a flash flood and landslide hazard analysis in November 2017, utilizing IOM site data. Utilizing community knowledge of flooding in addition to field observation and elevation data from IOM Needs and Population Monitoring (NPM) to calculate slope angles, the analysis produced a map showing areas at risk in the Kutupalong-Balukali site. Based on field work conducted from December 2017-January 2018, the hazard map went through several iterations between January and March 2018. With the final map indicating that around 200,000 people were living at risk of landslide, flash flood or both, this study was heavily utilized in a) advocacy for additional, lower-risk land and b) prioritization of households for relocation to the additional land which was granted.

By December 2017, several ISCG sectors recognized the need to initiate risk mitigation in preparation for the monsoon as a high priority. In parallel with the UNHCR hazard analysis and the November 2017 cyclone contingency planning exercise, a first disaster risk reduction discussion was initiated by the Site Management and Site Development sector in early December 2017. This was followed up by a proposal for forming a Disaster Risk Reduction working group, submitted to the Heads of Sub-Office group from the Site Management and Site Development sector, Shelter sector, IFRC, UNDP and the ISCG secretariat in February 2018.

In response to the sectors' proposal to form a DRR working group, the Heads of Sub-Office group requested the formation of an Emergency Preparedness and Response Task Force (EMPRTF) in February 2018. The EMPRTF served as a forum for coordinating cyclone and monsoon preparedness efforts in the first six months of 2018. Open to interested parties, in this period the EMPRTF generally included representation from all the sector coordination teams, the main humanitarian agencies, the Red Cross/Red Crescent movement, and organizations with particular interest and competence. The task force was de facto chaired by an ISCG secretariat focal point, with technical support from UNDP.

The assumption of high, potentially fatal landslide risk and the lack of feasible cyclone evacuation options led to a strong focus on extreme weather and disaster preparedness across the Rohingya response in the first six months of 2018, including relocation of refugees away from plots at risk. In addition to the establishment of EMPRTF as a dedicated forum for discussion, the sector coordinators' weekly meeting included issues and decision points informed by and directing the discussions in the EMPRTF. At the tactical level, the Heads of Sub-Office group had a standing weekly agenda item on disaster preparedness from February to May. Plans for cyclone and monsoon preparedness were developed and agreed upon through these forums and recorded in successive iterations of the Cyclone and Monsoon Preparedness plan/s. The Site Management and Site Development sector facilitated the relocation of households in at-risk plots to new plots in existing camps and new sites developed.

While Bangladesh has a well-developed regulatory framework for disaster management, the existing national instruments and mechanisms do not address disaster risk management within the Rohingya camps and exact arrangements had to be clarified. The fact that the still-developing governance structure for the camps is overseen by the Refugee Relief and Repatriation Commissioner (RRRC) rather than directly by the District's Deputy Commissioner led to initial confusion regarding who the main government counterpart for coordination of disaster response in the camps would be.

By April 2018, the Government of Bangladesh had confirmed that the Deputy Commissioner would be ISCG's counterpart for disaster response, and that he would include the ISCG, the RRRC and the Armed Forces Division (AFD) when convening the district Emergency Control Room. In April 2018, it was confirmed that the Deputy Commissioner in his function as head of the District Disaster Management Committee would also oversee disaster and extreme weather response in the Rohingya camps. As per the SOD, in the event of a disaster, the Deputy Commissioner convenes the District Disaster Management Committee and opens an Emergency Control Room/Emergency Operations Centre (the words are used interchangeably in the SOD) for situational monitoring and response. Agreement was reached between ISCG and the Deputy Commissioner that as a local arrangement, ISCG, AFD and the RRRC would be called to participate in the district emergency control room.

Recognizing that the impacts of monsoon and cyclone season-related weather events would vary in severity, preparedness planning was made with reference to three distinct categories of events, defined by level of coordination required. These categories were defined as:

*"Category 1 - A localized event that caused minor to moderate damage and that has little or no impact outside the locally affected area. Situation is managed by local stakeholders with existing resources. E.g. regular monsoon season.*

*Category 2 - An event that disrupts all or most of the refugee settlements. These events may escalate quickly and may have serious consequences for the refugee community. A category 2 emergency requires mobilizing additional resources and make immediate strategic & operational decisions. The effect of the emergency is wide-ranging and complex but, unlike Level 3, do not affect surrounding communities. E.g. Major flooding incident.*

**Category 3** - A major disaster that adversely affects the entire area, and the surrounding communities. The effect of the emergency is wide-ranging and complex, and a timely resolution of disaster conditions requires broad cooperation and extensive coordination. A level 3 emergency requires mobilizing additional resources and making immediate strategic & operational decisions. E.g. Tropical cyclone."

At the beginning of the monsoon in mid-June 2018, the valid version of the ISCG preparedness plan was the "Monsoon Response Plan: Rohingya Refugees - Cox's Bazaar (01/07/18)". This version was not superseded and remained valid until the end of the 2018 monsoon. Key elements of the plan were the establishment of sectoral focal points at camp and area level (i.e. sector partners which have capacity to deliver monsoon relief quickly in specific camps), defined Minimum Preparedness Packages for priority repositioning, and establishment of mobile response teams in certain sectors.

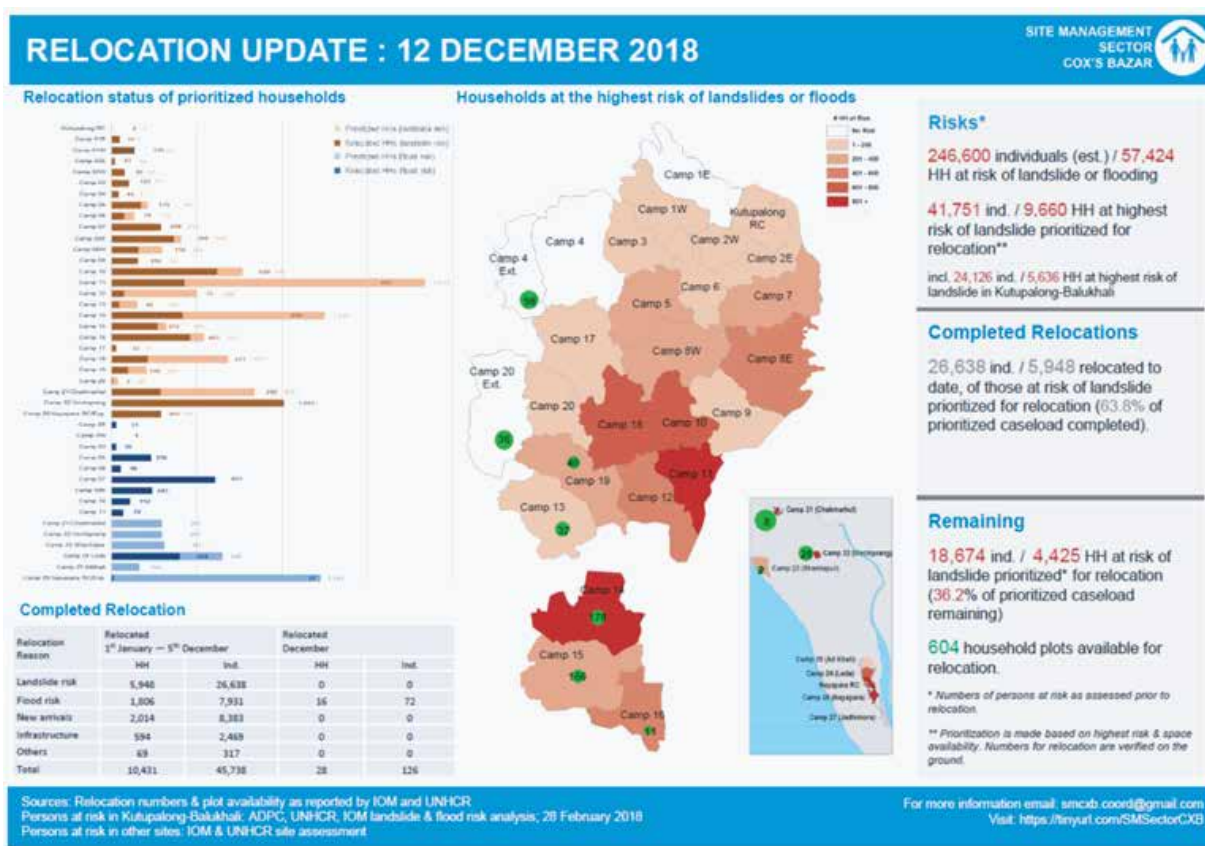


Figure 3: Site Management and Site Development sector relocation dashboard as of 12<sup>th</sup> December 2018. Relocations began before the 2018 monsoon, continued throughout, and are still ongoing.



## 2018 MONSOON - SEQUENCE OF EVENTS

**Starting on 10<sup>th</sup> June 2018, the first period of sustained monsoon rains caused flash flooding, landslides and erosion throughout eastern Bangladesh.** In the Chittagong Hill Tracts, eleven people lost their lives to landslides while 1 person in Maheshkhali upazila of Cox's Bazaar died when a landslide hit his home. In the Rohingya camps, 181mm of rain was recorded at the Camp 12 weather station in a single day, while camp 23 (Shamlapur) experienced partial flooding as the high volume of water coming down the nearby river was tidal-locked by the high tide. The Army Road in Kutupalong was damaged in several locations, temporarily disrupting road access to the interior of the camp. The IOM/UNHCR/WFP Site Maintenance Engineering Project (SMEP) activated to clear and repair the road, working throughout the day in all conditions - including heavy rain. The event took place immediately before the 2018 Eid al Fitr (14<sup>th</sup>-15<sup>th</sup> June).

**Following this initial episode, several sectors conducted internal lessons learnt exercises which fed into a common Head of Sub-Office group/sector coordinator lessons learnt workshop.** 23 action points were identified in the workshop (see "Lessons Learned - Monsoon Rains 9-24 June 2018", ISCG 15th July 2018). Following this episode, the Emergency Response and Preparedness Task Force was re-dubbed the Emergency Task Force to reflect focus on management of the monsoon.

**The second significant rainfall episode of the monsoon season occurred on and in the days following July 25<sup>th</sup>, when over 400 mm of rain fell in the course of 24 hours.** This was followed by several days of lighter rain. Landslide early warning was issued in landslide-prone areas of Cox's Bazaar town and rural Teknaf following warning from the Geological Survey of Bangladesh, which has monitored landslide risk in these two high-risk areas with two automated rain gauges since 2015. Despite early warning, 5 children died in Cox's Bazaar town and Ramu upazila due to landslides during the event. Early warning was not issued in the Rohingya camps, due to there being no agreement in place on which area warned households should be advised to temporarily relocate to. The event took place on the same day as local government elections in Cox's Bazaar town. On this occasion, SMEP worked overnight to repair roads and maintain access.

**The ISCG Secretariat had been monitoring the weather forecast in the days preceding the event, and when the overnight rainfall was observed to be extremely heavy, dialogue with the Deputy Commissioner was initiated in the early hours of 25<sup>th</sup> July.** Concerns were communicated to the Emergency Advisory Team, comprising the Senior Coordinator and the heads of the major operational UN agencies. Around 9 AM, the Deputy Commissioner convened the representatives of the ISCG, AFD and RRRC in a meeting of the emergency control room, which lasted for 2-3 hours. Several requests to the humanitarian community were subsequently cascaded to agencies and sector coordinators. The Emergency Task Force convened the next day and a brief discussion of events was held.

**The southwest monsoon remained active over Bangladesh until 7<sup>th</sup> October, but rainfall episodes remained moderate and no further incidents of note took place.** Throughout the season - even during events around 10<sup>th</sup> June and 25<sup>th</sup> July - tracking of and response to monsoon impacts was facilitated in the category 1 incident framework, i.e. through camp-level coordination.



## LESSONS LEARNT - CROSS-CUTTING ISSUES

Following analysis of the documents and interviews, five cross-cutting issues were identified:

### **Understanding and mitigating natural hazards and risk in refugee response**

Early landslide and flash flood risk assessment helped create a critical momentum that enabled significant risk mitigation efforts, development of additional sites, relocation of most at-risk households - and increased focus on non-Ukhia/Teknaf settlement options such as Bhasan Char. Utilizing the findings of the early flash flood and landslide risk mapping, proactive advocacy was used to mobilize resource and secure permission for development of additional sites. The Government of Bangladesh accelerated development of Bhasan Char for relocation of refugees at risk, although this has not yet been realized.

**Small-scale risk mitigation and relocations before and during the monsoon critically reduced landslide, erosion and flash flood risk in the camps and helped maintain access - but not permanently.** The topography of the camps necessitated extensive physical work to reduce landslide risk, strengthen roads and pathways for rain impact. Site management support agencies and the SMEP worked to capacity, levelling shelter sites, building roads, constructing drainage channels and culverts, and permanently relocate households to safer sites. WASH was also working at capacity decommissioning latrines, installing new ones, managing fecal sludge disposal and drilling tube wells. Many activities were not completed before the monsoon started, and continued throughout the season, including relocations. Moreover, the majority of the mitigation activities have limited shelf-life due to the fragility of materials used, erosion, or lack of desludging options, and will require repair or replacement in advance of the 2019 monsoon.

**Lack of correspondence between the high-risk areas identified in the early risk assessment and actual location of incidents reduced trust in the assessment findings.** During the 2018 monsoon season, the location of actual flash flooding, erosion and landslide incidents did not appear to correspond convincingly with the initial hazard mapping. This resulted in a need for extensive ground verification before relocations, sub-optimal stockpiling and pre-positioning, and reduced trust among humanitarians and Rohingya in the hazard maps produced. Methodological limitations in the assessments have been acknowledged. However, it should also be noted that in the time between assessment and monsoon, new area of risk were created by shelters creating new rainwater drainage paths, as well as interference with the landscape (such as hill-cutting or dumping of filler/excess soil). Agencies wishing to look into correspondence between the early landslide and flash flood risk assessments and actual incidents should also note that not all GPS coordinates logged for landslide incidents in the camps are precise; Site Management Support staff have reported that at times, the GPS coordinates have been given for the nearest Majhi block, or only for the largest of several incidents on the same date.

**Questions about the early risk assessment has triggered several subsequent, un-coordinated risk assessment initiatives.** In response, several agencies have initiated hazard mapping and risk assessments to inform future planning, mainly commissioning academic or consulting actors. However, experience from 2018 showed limited capacity among many humanitarian agency staff to effectively ensure the quality of scientific studies, or confidently apply risk information for tasks such as determining whether a facility is at risk. Several sectors agree that primary data collection and specialist analyses by geologists,

hydrologists, sociologists and engineers are needed to support improved accuracy in risk assessment and subsequent risk reduction. Recognising the need for common standards and pooling understanding of risk assessment within the response, the establishment of disaster risk assessment working group was requested by the joint Heads of Sub-Office/sector coordinator lessons learnt workshop following the initial monsoon rains.

**Local knowledge of the risk scenario and risk mitigation strategies was not utilized optimally.** NGOs have expressed frustration that human resources gathered by the international agencies in control of the non-government response do not take advantage of the knowledge of local communities and national NGOs. For example, civil engineering to create flat ground in the hilly Chittagong terrain has a long history there, which could be applied by national experts in Site Development projects in the camps. They recommend greater participation in the ISCG's disaster risk reduction mainstreaming and preparedness planning by local government and NGOs.

**Failure of the worst-case scenario to materialize has led to a widespread but as yet unvalidated perception that the 2018 monsoon was a "light monsoon".** Uncertainty about the exact rainfall expected and degree of slope susceptibility to landslide was a significant feature of decision-making prior to the monsoon. Early risk assessments and field verifications indicated that 246,600 people in the camps were at direct risk of landslide and/or flash flooding - a far higher number than the population who were actually affected. During the lessons learnt interview, many of the key informants, particularly the sector coordinators, acknowledged the impact of relocation and risk mitigation in reducing the number of people at risk, but also characterized the 2018 monsoon as a light one. However, the season included at least one episode of near-record breaking rainfall over a 24-hour period, and no comparison between registered rainfall in the 2018 monsoon and previous years' monsoon has been published. One scenario which did not appear to occur during this monsoon was sustained heavy rainfall for four days or more; the potential impact of this scenario remains uncertain.

**Timely, accurate and understandable weather forecasts are considered crucial for effective operational planning and emergency mitigation - but preferences vary with regards to trusted sources, frequency of cascaded updates, and reliability.** Several agencies made provisions for pre-positioning staff overnight in Ukhia and Teknaf to ease travel on mornings after heavy rainfall but found it difficult to identify a reliable forecast trigger for doing so. The Bangladesh Meteorological Department was identified as the main source of forecasts prior to the monsoon - however, many stakeholders expressed frustration with the web interface of its online Cox's Bazaar meteogram requiring a certain level of scientific literacy to interpret. Trust or lack thereof in specific sources of forecasts was a recurring theme in interviews and discussions with stakeholders, with some preferring private online weather information platforms over the national or regional meteorological departments. Interestingly, the datasets underpinning the preferred platforms were in many cases the same as that underpinning the less preferred platforms, with stakeholders privileging user friendliness of interface.

**The frequency and format of weather forecasts and situation updates cascaded from the ISCG Secretariat and sectors varied throughout the season, as did the information needs of the stakeholders.** Before the monsoon and during the mid-June rains, information requests were extensive - reflecting the uncertainty among stakeholders about the exact risk scenario. For situation updates, the Site Management and Site Development sector was requested to provide a noon sitrep to provide information and counteract rumours, in addition to the 6 PM cut-off Category 1 incident report. This requirement was time-consuming for site management support partners but was luckily not required throughout most of the season. Likewise, the ISCG secretariat provided weather forecasts and updates, although changing

conditions made it difficult to pin down a predictable routine. Opinions varied among the key informants regarding the utility of the cascaded forecasts - some found too much emailed weather information disruptive to their daily work, while others suggested that more regular, contextualized and frequent weather updates would be useful.

## Preparedness planning

The Emergency Preparedness and Response Task Force (EMPRTF)/Emergency Task Force (ETF) provided a dedicated forum for technical discussion and tracking of intersectoral preparedness with direct input from both sectors and agencies. The establishment of a new first response and disaster response system for sites with multiple independent service providers requires agreement on a number of inter-sectoral, inter-agency arrangements. The majority of the sectors, the major UN agencies and both donors maintaining offices in Cox's Bazaar (ECHO and DFID) participated in the EMPRTF weekly, allowing for multi-stakeholder discussion of how to solve specific problems related to the establishment of this response system. The open membership of the EMPRTF/ETF allowed smaller organizations with specialised disaster management and first response competences to also contribute directly to the establishment of the system for the Rohingya response as a whole.

However, the EMPRTF/ETF's unclear ToR and open membership introduced uncertainty about decision-making processes and undermined the effectiveness of the forum over time. Establishing the EMPRTF/ETF as the main forum for technical preparedness planning discussions ensured that other intersectoral agendas did not lose space in sector coordinator meetings. However, the follow-up of EMPRTF/ETF recommendations caused confusion about whether the forum was an advisory or decision-making one, vis a vis the sector coordinators and the heads of sub-office. Inconsistent reporting to the sector coordinator group and the heads of sub-office group on ETF discussions in the latter half of 2018 undermined the forum's utility and increased siloing of disaster and extreme weather preparedness issues. Similarly, while the open membership facilitated stakeholder of multiple stakeholders, turnover of staff and participating organisations increasingly undermined continuity.

Investment by government, donors, sectors, agencies, OCHA and ISCG enabled the development of a basic monsoon continuity and preparedness architecture before the 2018 monsoon. The Monsoon Response Plan provided a basic framework for priority response actions and coordination thereof. The plan was supplemented by supporting documents such as the protocol for category 1 incident reporting, protocol for Joint Needs Assessment of disaster impacts, articulation of basic sectoral monsoon plans, and maps showing pre-position locations of agreed Minimum Multi-Sector Response Packages. These plans were used to facilitate discussions with civilian government and military counterparts.

However, because of the limited time available to build preparedness and capacities before the 2018 rainy season, the Monsoon Response Plan still has scope for improvement, especially for enabling camp-level preparedness planning. For camp-level planning purposes, the most critical gap identified by site management support agencies is the lack of overview of what can be expected from which sector and partner, through what modality, at what point in time during the monsoon. Preparedness planning for extreme weather and emergency response is not the core competency of many site management support agencies, and provision of guidance, templates, and explicit information about overarching arrangements could have supported more robust camp-level planning process.

In particular, integration between the humanitarian monsoon plan and the Government of Bangladesh's district and upazila disaster management plans was limited. Facing an uncertain risk



scenario and under time pressure to set up a system, the humanitarian actors focused on connecting internal preparedness planning with government's preparedness planning in three main ways. Firstly, development of coordinated command and reporting lines between the humanitarian, RRRC and AFD field structures. Secondly, by reaching agreement on key disaster response stakeholders' (ISCG, RRRC, AFD) participation in the Deputy Commissioner-led EOC to facilitate joint decision-making in the event of a category 3 incident such as cyclone. Third and finally, through initiating support for enhancement of the district and upazila EOC facilities. With some adjustments, these efforts provide a sound basis for future seasons, but needs to be complemented by detailed operational integration of plans at the district, upazila and union level.

## Coordination

**Most of the humanitarian actors and donors took a no-regrets, worst-case scenario-based approach to enhancing the existing coordination structures before the beginning of the monsoon.** This included significant support in the form of deployed human resources for an Emergency Coordination cell in the ISCG secretariat and support to enhance the district and upazila EOCs and Department of Disaster Management field structure through human resources and equipment. As the worst-case scenario did not materialize, the resources deployed exceeded actual need - a more efficient use of resources may have been smaller, but more context-specific support. However, the uncertainty about actual outcome of the monsoon made it difficult to anticipate exact needs.

**The three incident categories and corresponding coordination arrangements anticipated by the Monsoon Response plan did not correspond to actual decision-making and needs during the monsoon and did not address dependency on above-camp level logistics and road maintenance services.** The concept of category 1 incident (impact manageable at individual camp level) and category 2 incident (impact manageable within the RRRC and ISCG response structures) was binary, and did not explicitly acknowledge the fact that impacts can be managed at camp level provided certain, pre-existing response-level services are functional. The most important example of such interdependency even when direct health and humanitarian impact could be managed at camp level, was the dependency of sectors on response-level services from the SMEP, AFD and the Local Government Engineering Department (LGED) in maintaining road access to the camps. Starting with the first multi-day rains on 10<sup>th</sup> June, addressing road damage and clearance needs within the camps required significant response, accumulating to 275,000 man hours under SMEP alone.

**This lack of correspondence between the coordination scenarios and actual events led to confusion among stakeholders as to which level of coordination was valid during the heavy rain episode on 25<sup>th</sup> July.** In advance of the monsoon season, it was not anticipated that the EOC would be convened by the Deputy Commissioner unless a disaster affecting both the Rohingya and host community population took place. However, following discussion between ISCG and the district administration, the EOC was convened on the 25<sup>th</sup> July in response to heavy overnight rains and weather forecasts indicating continued precipitation for the next two days. With a) decisions being made and relayed from the Government-led EOC, b) SMEP on heavy duty trying to respond to road damage, and c) sectors responding to needs at camp level, the heavy rains appeared to simultaneously be a category 1, 2 and 3 incident at the same time.

**While information-sharing practices adapted to changing needs during the monsoon, ad-hoc rather than formalized updates and cascading practices contributed to information gaps.** Standard Operating Procedures for information sharing are not explicitly described in the Monsoon Response Plan, and changing practices made it difficult to anticipate where and when information would be shared. While the

EMPRTF/ETF mailing list and WhatsApp group, the sector coordinator mailing list and Head of Sub-Office Group mailing list provided starting points for disseminating information, dissemination down to the camp level depended on cascading within sectors and individual agencies. E-mail cascading was mentioned by several sectors as being less effective than synchronous WhatsApp messaging; however, it was observed during the season that many actors observed less rigorous verification standards for spreading information on WhatsApp than through email. WhatsApp and e-mail reliance are both on cell phone network coverage, which is not robust close to and within certain parts of the camps. Language barriers related to messages passing from English to Bangla to Rohingya, or the reverse, were also noted.

**Several sectors established internal sectoral response focal points and/or mobile response teams at camp or area level in preparedness for disruption to regular work modalities and to be able to manage monsoon-triggered spikes in refugee's needs, service demand, and distributions at as low a level of coordination as possible.** The focal points identified in advance of the 2018 monsoon were generally sector partner organisations considered to have requisite capacity to meet response needs in specified camps. For most of the sectors and mobile response units, the specific tasks related to the sector focal point function were assigned to existing project staff in the assigned camp, in addition to their regular duties. For some sectors, this camp/area sectoral focal point system of was later extended to non-emergency response functions as well, and the system remains a work in progress.

**Delivery of timely relief to monsoon-affected refugees depended on solid, decentralized coordination systems at camp level, and therefore the performance of the sector focal points; but most of the concerned sectors observed performance issues and delays in delivery of response.** Performance by the focal points varied by location and organization, and challenges included lack of clarity regarding duties and expectations of assigned personnel, poor selection and supervision of assigned focal point personnel, transport and road access issues hindering focal point personnel from reaching the camps, conflicting directions, and prioritization of regular project tasks over emergency response by the focal point organization. Site management support agencies consulted in this lessons learnt exercise pointed out that timely support depends on the appointed sectoral partners knowing what is expected of them, and having the right resources, while Camp in Charges and site management support agencies need to know what sectoral focal points will deliver, and when. Explicit ToRs for the sector focal points need to be shared with all concerned partners at camp level to facilitate camp-level plans. Periodic refresher training is necessary to ensure that staff representing the focal point organization can fulfil their function. Finally, as sub-contracting UN agencies should ensure that implementing partners' role as sectoral focal points is reflected in their contracts and implementation plans.

**Recognising that Rohingya community members will be the first responders to most incidents, many sectors trained volunteers for humanitarian and first response support.** There is, however, considerable scope for improving coordination and effectiveness of the volunteer structures. With volunteers being trained by several sectors, the Army, the Cyclone Preparedness Programme, and Site management in advance of the season, the ISCG conducted a mapping of volunteer groups at the beginning of the monsoon. However, the precise function and reporting lines of the different volunteer groups have remained unclear in certain cases, and no clear overview is recorded within the preparedness plans. Volunteer development has also remained largely divorced from different agencies' pilot projects on community-based disaster risk management.

**While several single-sector/agency internal table top simulation exercises took place pre-monsoon, no simulation exercise has been organized to test preparedness for an event requiring response coordination at response- or district-level.** An extreme event, such as a mass casualty event or sustained,

extreme rains cutting off road access for days could trigger the need for monsoon response coordinated at the ISCG level or district level (corresponding to category 2 or 3 events in 2018 ISCG response plan). The majority of stakeholders consulted emphasized that in preparation for the next monsoon, a table top simulation exercise should be organized. There is general agreement that there is a need for a joint simulation exercise with government to practice multi-level coordination and response, building in challenges to transport/access, camp-level action, and multi-stakeholder engagement and emergency messaging propagation.

**Monsoon continuity measures and extreme weather response comes in addition to the everyday refugee response, and turnover in all agencies poses a challenge to effective preparedness planning and coordination.** The monsoon and extreme weather risk and vulnerability scenarios of the Rohingya camps are unique, and the first response and humanitarian response systems are sui generis and still evolving. Continuity of services and preparedness for extreme events during the monsoon requires personnel whose core function and expertise is in other fields to learn about and contribute to extreme weather response. Effective management of this additional work is challenged by rotation of staff in UN agencies, NGOs, and in government counterpart agencies contributing to critical knowledge gaps.

**Adjustments were made to the ISCG secretariat structure to ensure coordination support for the worst-case monsoon and cyclone scenario.** An ISCG secretariat review was conducted in December 2017/January 2018 to ensure that the secretariat was optimally structured to coordinate the large response to the 2017 influx. However, this review was conducted before the initial landslide and flash flood risk assessment results were released. After the risk assessment, a temporary Emergency Coordination Cell was created to ensure preparedness for monsoon and cyclone response. The coordination cell was, however, not fully staffed until August, and due to the ad-hoc nature of the cell, expectations towards its function and complementarily to other ISCG secretariat units had to be worked out incrementally. Staffing for the cell - five international and three national positions - was manned with reference to the worst-case scenario, e.g. with provision for maintaining staff attached to the district and upazila EOCs throughout the season.



### **Monsoon impacts on the operational environment**

**As anticipated, navigability within the camp became difficult - both for refugees and humanitarian workers.** As reported by the ACAPS report on changes in the camp during the monsoon, the percentage of the population accessible only by footpath increased from 59.3% in March to 67.8 in July, while accessibility by Compressed Natural Gas vehicle ("tomtoms") had halved from 15.8% to 7%. Although considerable effort had gone into reinforcing pathways, stairs and bridges before the monsoon, slippery conditions and incremental wear and tear made movement on foot more difficult. This posed challenges to the movement and access to services and relief distribution of children, the elderly, people with disabilities, and pregnant women.

**The threshold for road access disruptions was lower than anticipated, especially on roads built on filler soil. However, access was largely maintained, albeit with delays in flow, redirections and brief disruptions.** Although the risk of breakdowns of the Kutupalong internal Army Road due to soil erosion had been widely discussed prior to the monsoon, many stakeholders had not anticipated exactly how quickly this would happen - overnight at the start of the mid-June rains. Restrictions on vehicle weight and repairs by SMEP had to be immediately initiated to prevent further road damage, and closures were announced at times. However, these closures were not enforced. Frequent road damage and repairs caused delays in transport and constrained access into the interior of Kutupalong to on-foot only on the

worst days. Landslides along Marine Drive also necessitated clearance by the AFD on several occasions. None of the sectors interviewed for this exercise reported significant disruption in their ability to deliver services due to access issues. SMEP, however, has been continuously providing road repair, restoration and clearance services since 3<sup>rd</sup> June till date (mid-December 2018).

**Mobile Response Teams and on-foot outreach services faced exhausting and challenging conditions.** To compensate for navigability, road access and facility damage issues, the sectors which had established mobile response teams activated these and delivered both regular services and monsoon response services in the Minimum Multi-Sectoral Response Package. However, due to difficulties in navigability in wet conditions as outlined above, mobile response teams and other on-foot service providers were facing significantly more time-consuming and exhausting conditions than during the dry season. At the beginning of the season, there were also instances where confusion about whether it was humanitarian access or road access which had been suspended. This resulted in some organizations not deploying staff to the field on certain days. For some sectors, these challenges resulted in a narrower scope of outreach activities than originally planned for, and preparedness for the 2019 monsoon should include training of back-up personnel for on-foot teams. During the lessons learnt interviews, several informants also pointed out that during this monsoon, heavy rains did not sustain for more than 3-4 days at a time - but if they had, staff and volunteer exhaustion would have been a critical challenge.

**Additional training, learning and equipment can strengthen capacity of mobile response and service delivery during the monsoon - but additional human resource is required to meet additional caseloads and prevent exhaustion of staff.** Some good practices noted were training on first aid and psychosocial support, visual identification of teams with vests and ID, and lessons learnt sessions with the team. However, the adoption of on-foot service delivery during the monsoon not only increases the time and energy needed to deliver regular services but must also respond to spikes in demand due to monsoon impacts on households. At times, capacities were stretched thin and delays in monsoon response and relief to households were noted.



### Communication with and accountability to the community

The Rohingya population has been subjected to forced displacement which places a significant emotional, social and physical burden on men, women, boys and girls. While they come from an area facing similar weather patterns as Cox's Bazaar, their displacement, the new settlement patterns and dependency on humanitarian support creates an entirely different risk and vulnerability scenario. Most villages and settlements in the Rakhine are low-density and located in the broad valley bottoms, rather than on the hillsides. In contrast, the refugee camps in Cox's Bazaar have extremely high density, with housing on hillsides and narrow valley bottoms. Loss of assets during flight to Bangladesh, coupled with lack of livelihood and agricultural options in the refugee camps, makes the refugees entirely dependent on humanitarian assistance if affected by monsoon impacts or other hazards. While indigenous coping mechanisms for monsoon hazards exist and should be drawn upon for community-based disaster risk management in the camps, not all may be appropriate or feasible for the new context.

**Stakeholders called for the development of adapted early warning and general preparedness messages during an early February cyclone preparedness workshop, which was followed up on through intersectoral collaboration.** The call was taken up by the Early Warning working group, where Protection, CwC, Shelter, and Site Management sector representatives worked with UNDP and the American Red Cross to review early warning options and core messaging needed to prevent loss of life due to exposure to hazards and extreme weather. It was determined that early warning and multi-hazard risk

information should be accompanied by priority preparedness messages. Following initial consultation with the sectors and the Heads of Sub-Office group on key content, the CwC working group took lead on working with the sectors on refinement of messages and development of products to support dissemination. These messages provide a basis for 2019 messaging but may have to be updated to respond to feedback from the Rohingya community about language, cultural sensitivity, dissemination media effectiveness and other contextual issues.

**Despite intensive efforts to develop monsoon and disaster risk and preparedness messaging, the information has not been systematically and widely disseminated to the refugees.** As reported by the ACAPS on changes in the camp during the monsoon, several reports and assessments indicate that there is a critical information gap and that the refugees have been insufficiently informed about preparedness and risk. Unlike the diphtheria messaging campaign in winter 2017/2018, there has not been a sustained, closely coordinated multi-partner effort to reach the population at scale with the monsoon- and disaster-related messaging. One barrier which hindered this has been the lack of a full-time CwC coordinator in the time preceding and including the monsoon; another may have been the lack of ownership by sectors beyond the initial consultations.

**Critically, monsoon-affected refugees appear under-informed about what support they can expect from the humanitarian actors to manage monsoon and extreme weather impacts.** Community feedback such as that presented in the What Matters? Feedback bulletin and individual reports show certain recurring themes; for the cyclone seasons, there are questions regarding plans for evacuation; for the monsoon, questions regarding when and how to access relief, weather information, and support to strengthen shelters. Community feedback collected by Internews during the 25<sup>th</sup> July extreme rain event was dominated by questions about what they should do to deal with impacts and what support was available from the humanitarian actors.



"We haven't received any support from any NGOs during the week of heavy rainfall. When it rained heavily, we somehow protected our belongings by wrapping plastic around the important things."

(Man, 42, Camp 1W)

"Our home is okay, but it got flooded when it was raining heavily. The tarpaulin roof over my shelter was torn up, and water entered in my home. It was very uncomfortable to stay inside the shelter."

(Man, 55, Camp 1W)



Source: "Snapshot - Monsoon Rain Based on Rohingya Community Feedback", Internews 2018



## LESSONS LEARNT - SECTORAL EXPERIENCES



### Protection (including child protection and gender-based violence)

In advance of the 2018 monsoon season, the protection sector's mitigation and preparedness measures focused on support to relocation of at-risk families and raising risk awareness using information products tailored to the refugees' context and a community-based protection approach. In the first quarter of 2018, this included participation in the cross-sectoral Early Warning working group, which reviewed a) cyclone and landslide early warning options and b) core messaging needed to prevent loss of life due to exposure to hazards and extreme weather. Subsequently, protection sector worked with other sectors and CwC actors to develop IEC materials presenting risk reduction information in an understandable and useful manner to enable the refugees to make choices to protect themselves from injury, illness and loss of life. Examples of this include information materials on how to identify signs of possible soil erosion and what to do to reinforce a shelter site, or information on flood risk coupled with WASH information about contamination. A critical role played by the protection actors in the camps pre and during the monsoon season, was assisting with the relocation of hundreds of households to safer locations, focusing on the most vulnerable persons/households with protective accompaniment.

The Protection Working Group established an internal EPR Task-Force from February 2018 on, open for participation to operational sector partners, to coordinate and strengthen preparedness and response activities. Protection outreach activities supported vulnerable individuals affected by landslides, flooding and heavy storms, including the identification of families who lost their shelters, food and belongings to find a dry place for temporary residence as well as referring them to service providers to receive core relief items and food.

At field level, Protection Emergency Response Unit teams (PERU) consisting of staff from 25 different organizations were established to ensure that protection essential services (including gender-based violence and child protection services) could continue even when weather and disaster impact disrupted regular service delivery. For visual identification and organizational visibility, the sector provides team members with coloured vests. PERU members were trained in first aid, psychological first aid and emergency and protection response. To ensure readiness for the changing seasons and compensate for staff turnover, the Protection sector organized focus group discussions to capture lessons learnt, as well as regular refresher training for the old and new PERU members. PERU members were also integrated at camp level with the existing camp focal points structure, with a reporting link.

Like other mobile service providers and response teams, PERU teams faced a challenging operational environment and multiple demands, further enhancement of capacities before the 2019 monsoon season remains a priority. Options for enhancing capacity of the PERUs include training of back-up team leaders and members, working with PERU members' direct line managers for stronger agreement on prioritization, and empowerment of the camp protection focal point.

Protection sector worked with Health sector to ensure protection mainstreaming in medical first response. Protection Officers were embedded into the Medical Mobile Teams, taking part to their preparedness training, facilitating referrals for protection cases, including child protection and GBV, and establishing a strong inter-Sector collaboration and an integrated response mechanism.

## Site Management and Site Development

At the forefront of discussions of extreme weather and disaster risk since the beginning of the influx, the Site Management and Site Development sector played a key role in facilitating successful pre-monsoon risk reduction and preparedness planning, tracking impacts, delivering response and communication with communities. The Site Management and Site Development sector covers camp level coordination and community representation, site planning and development, site improvements, and environmental issues. Based on this scope of activities, the sector coordination team and the site management agencies played a leading role in identifying hazards and risks, promoting camp-level preparedness planning and coordination response, establishing and rolling out a Category 1 daily incident tracking system, creating catalogues of risk-mitigating site improvement works and implementing them, preparing and developing new sites and facilitating re-location of at-risk families, as well as development of awareness messaging with the CwC working group.

**To reduce risk to prevent loss of life, a broad array of site development and site improvement activities were implemented, with adjustment made to methods based on lessons learnt.** The nature of the activities ranged from minimally intrusive planting and covering hillsides with tarpaulin, via slope stabilization and drainage construction, to levelling of hills and establishing new plateaus with filler soil. A key takeaway from the 2018 activities is to retain natural features and integrate biodiverse planting to the greatest extent possible. Similarly, plans for maintenance of roads, pathways and drainage is key to minimize deterioration during the season.

**Preparation of new sites and implementation of risk mitigation measures became a race against time to finish before the monsoon rains started in earnest.** Lack of clarity around permissions and government-agreed deadlines would at times cause unexpected delays in work. SMEP tendered much of the road-building and site preparation earthmoving work to heavy equipment operators. It was found that contractors were not able to accurately estimate the ultimate cost of the work, considering unavailability of fuel, equipment breakdown, labour availability and weather events. The outcome is not just cost increases, but more crucially, schedule impacts that delayed construction milestones with respect to seasonal hazards like cyclones and monsoons.

**Voluntary relocation of vulnerable households to areas less landslide and flash flood prone reduced the number of people at risk but was complex and resource-demanding.** Due to limitations in the initial landslide and flash flood hazard maps, actual exposure of households had to be verified on the ground. In addition to the practical challenges related to development of new camps and the logistics of moving people and assets, the sector had to contend with household resistance to being moved. Oft-cited reasons for household resistance to relocation was anxiety about separation from neighbours and family who were not being relocated, and reluctance to move to new areas further away from access, services and markets. In some camps, the former problem was addressed by moving clusters of households rather than only those determined to be directly exposed to landslide and flash flood hazard.

**Lack of clarity about the different sectors' focal point ToRs and mechanisms made preparations of camp-level plans challenging and contributed to delays in responding to affected households' needs.** Although the key preparedness and response actions of the different sectors were briefly described in the ISCG Monsoon plan and within certain sectors' preparedness plans, detailed information about the sector focal points' duties was not available to site management support actors. For future preparedness planning, site management support actors are requesting clear and concise information about what can be expected from which actors and groups, at what time, under whose direction. Similarly, site

management support agencies faced challenges in getting inputs from other actors on the ground for needs assessment and reporting after incidents. Without this information, it becomes difficult to prepare of camp-level plans and hold sectoral duty-bearers accountable for delivering timely response.

**Monsoon impact was not severe enough to disrupt site management support work on the ground, although site development works became difficult and delivery of support to monsoon-affected households did face delays.** Although navigability and road access deteriorated, and the workload increased, site management support agencies were able to maintain core camp coordination activities throughout the monsoon. Some site management support agencies conducted ad hoc/informal after-action reviews of to provide feedback for process improvement when events warranted it. In preparedness for the monsoon, Safety Unit Volunteer originally recruited for fire safety and response were given additional training and tasks. These units functioned well, but the number of volunteers per camp needs to be increased to cover their catchment area adequately.

### Food Security

**Food security sector preparedness was facilitated by an internal task force and focused on ensuring continuity of food distribution despite adverse weather.** Within the Food Security sector, an emergency task force was established to produce an emergency preparedness plan for the monsoon. The key focus for the cyclone and monsoon preparedness was the development of a helper system (i.e. system for using daily labourers to distribute food to remote areas when navigability deteriorates) to ensure continuity of food distribution, prepositioning of stocks in and near the camp, reinforcement of food distribution and centres. Fortified Biscuits were integrated as part of the Minimum Multi-Sectoral Response Package for prepositioning in the camps for distribution to affected families. Buffer stocks for ready to eat food were stock piled and contingency plans were developed for increasing the capacity of kitchens providing cooked food in the aftermath of an incident.

**The monsoon impact on food security sector operations was minor.** The 25<sup>th</sup> July rains did affect road access to the camps, but quick repairs prevented sustained disruption. Load limits on heavy vehicles and reduced navigability within the camps caused some delays and triggered occasional activation of the helper system, but the sector did not have to activate increased provision of hot meals as an emergency action.

**The helper system using daily labourers to transport food to remote areas or distribution points with disrupted road access is critical for ensuring access to food and should be further strengthened in 2019.** Reduced navigability due to monsoon conditions negatively affects access to food distribution for all, and extremely vulnerable individuals and those with mobility issues due to slippery terrain, damaged paths and longer walking times. Similarly, road disruptions have the potential to cut off vehicle-delivered supply to food distribution points. The helper system was therefore a critical part of the Food Security sector's continuity plan and should be continued and further strengthened in line with protection mainstreaming principles in 2019.

### Nutrition

**The nutrition sector structured its preparedness activities around sector-specific emergency levels:**

- 0 Normal operations: assessing and meeting nutrition needs
- 1 Implementing preparedness activities: supply chain, storage, prepositioning, training mobile teams



- 2 Remediating moderate to severe impacts on individual camps such as damage to service facilities, household displacements and restricted access to beneficiaries, and readiness to provide double allotments to beneficiaries in anticipation of service interruption
- 3 Responding to a catastrophic district-wide hazard event, e.g., direct hit of a cyclone 2 days before landfall, by closing facilities, dismantling and tying down structures, securing nutrition stocks and evacuating staff.

**On the first day of heavy rains in June, flash flooding triggered nutrition emergency Level 2.** Two weeks of nutrition supplies were repositioned, and staff considered distributing two week supplies to beneficiaries in case of facilities closure. Facilities at risk of landslides were decommissioned. Mobile nutrition teams were ready but in fact the rains affected few facilities and did not seriously impact operations. For the monsoon season in general, the sector did not anticipate the significance of the actual access limitations on service delivery so the coverage of outreach activities like screening was less than planned.

**The nutrition sector has a well-articulated, practical sectoral preparedness plan which could serve as a template for other sectors.** The plan describes expected impacts on sector operations in relation to the three ISCG categories of impact, outlines coordination SOPs and critical actions for sectoral response, contains the contact details and terms of reference for sectoral focal points, and guidelines for action and related necessary equipment. The information contained in this template makes it easy to understand and verify what can be expected by whom, at what time.

## Health

**Health sector preparedness and response was shaped by systematic learning and analysis of conditions.** Health sector monsoon preparedness was based on the assumptions that a) the impacts of the monsoon on the population and facilities could necessitate mobile delivery of medical services to affected areas or to fill in for damaged facilities; and that b) wet conditions could lead to an outbreak of acute watery diarrhoea or other water or vector-borne disease. The sector had a strong system of learning and adjusting following high-intensity events; a sector simulation exercise was organized in advance of the season, while a dedicated sector lessons learnt exercise took place following the mid-June rains. In response to these lessons learnt, the health and WASH sectors developed SOPs for monitoring and managing water-borne disease risks.

**In advance of the season, the health sector focused on establishing mechanisms and resources for ensuring continued health service delivery under adverse weather conditions and preparedness for epidemiological management.** The sector established and trained volunteers to serve on Mobile Medical Teams (MMT) to ensure continuity of primary health services in case of facility disruptions (coordinated through a disaster response unit). Buffer stocks of essential equipment and medicines were purchased, and critical medical equipment was repositioned in the camps. To enhance preparedness for community first response to landslides, over 2,000 community health workers were trained on first aid. Additionally, preparedness for an outbreak response was prioritized, with development of guidelines for epidemiological management, establishment of isolation facilities for acute water diarrhoea, and training of community health workers in case management and referral for acute water diarrhoea. The office of the Civil Surgeon was extensively involved.

**The health sector collaborated with a wide set of sectors to manage risks and caseload.** In addition to developing joint SOPs with WASH sector (see above), the health sector worked with the protection sector to assign a focal point in each MMT to facilitate referrals for child protection purposes. The health sector also worked with the shelter sector in advance of the monsoon to strengthen and reinforce health facilities.

**Monsoon impact on health sector caseload and on operational continuity was far less severe than anticipated.** Despite serious concerns prior to the monsoon, there were no major outbreaks of water-borne disease during the monsoon. Although there were injuries due to landslides and related to wet conditions, there were no fatalities in the refugee camps directly resulting from exposure to monsoon hazards. As reported in the Health sector bulletin, weather-related incidents did cause temporary closure of 37 health facilities during the monsoon. However, the maximum number of facilities closed at any one time - during the 25<sup>th</sup> July rains - was only ten. These 25<sup>th</sup> July rains made facilities difficult to reach but did not cause any major damage or seriously test the ability of the facilities to remain operational. Health partners were informed of facility closures daily through a daily monsoon update email. During closures, the MMTs functioned as intended and proceeded on foot when vehicle access was not possible. As reported by ACAPS based on NPM round 11, the percentage of the Rohingya population whose access to health facilities at night is limited by terrain conditions increased from 16.8% in March to 24.3% in July. Considering the limited extent of facility closures, this deterioration is most likely caused by site deterioration affecting navigability.

**Based on the experience from the 2018 monsoon, the health sector considers its monsoon response plan robust, but with scope for improvement.** Community messaging developed in 2018 is largely considered adequate. No major changes are contemplated in the approach to the 2019 monsoon but concerns about VHF/HF access in case of cellular network failure remains a concern and a threat to the robustness of response. Strengthening the coordination with the AFD will also be considered a key preparedness priority before the 2019 monsoon. Night time incident protocols and ambulance dispatch systems should also be further developed. Although dead body management is not the mandate of the health sector, a simple protocol for dead body management is needed; so that health care providers can be trained on how manage dead bodies.

## **Water, Sanitation and Hygiene (WASH)**

**In advance of the 2018 monsoon season, WASH sector worked with DPHE and area/camp sector focal points to reduce risk of disease outbreak, as well as prepare for events causing mass contamination of drinking water sources.** Under the leadership of the DPHE and the WASH Sector Coordination unit, a WASH emergency response unit was formed at the Cox's Bazaar level with implementation and follow-up led by the Area and Camp focal agencies.

**Prior to the beginning of the monsoon, a broad set of activities were initiated to reduce risk to WASH facilities as well as WASH-related public health risks.** From the on-set, WASH sector partners actively decommissioned latrines and other facilities that fell in the high risk-floods, landslide zones. The use of sand bags and soil stabilization around latrines mitigated adverse effects of the rains and landslides. Decommissioning further included facilities that posed a public health risk due to functionality status, siting and proximity to dwelling and contamination risk to water sources. Extensive latrines desludging ensured that filled up latrines were emptied before the heavy rains to reduce potential to overflow and subsequent contamination risks. Routine sweeps were carried out to monitor functionality and volume of pits which determined the need for desludging of latrines. The use of transfer tanks allowed for increased capacity to empty and move sludge and black water to management sites. Emergency trainings conducted in preparation for and during the heavy rains include on-site fecal sludge management, lime and barrel use for fecal sludge management in floods, chlorine dosing at water points. Household water treatment ensured hotspot communities were engaged and trained in the use of aqua tabs. Changing behaviour was acknowledged as a major challenge, and some sector partners suggesting stronger post-distribution monitoring of materials to ensure proper use.

**Road access and navigability issues were managed through use of on-foot delivery and stockpiling.** When road access and navigation became challenging, WASH sector partners involved in construction of emergency facilities worked with casual workers and laborers to move materials in hard to access areas of the camps. Involvement of refugee population in the exercise was key. Stockpiling of supplies including hygiene and top up kits, water purification tablets (aqua tabs), chlorine, lime, bottled water and emergency latrines/bathing facilities materials allowed for timely response when required. Area Focal Agencies led the stock pile procurement and prepositioning in selected storage facilities in and around camps.

**The sector strategy and guidance allowed for a mixed response of the unified agreed latrine designs and emergency latrines in the event of floods, mass displacement and cyclone.** Working with the DPHE, investment was made for mobile water treatment trucks and standby water bowsers for trucking water in the event of mass displacement.

**The WASH sector worked extensively with other sectors to reduce monsoon and extreme event risks.** Working with Shelter sector, the WASH sector invested in latrines tie down trainings and designs to guide partners in preparation for intense winds and to minimise potential of CGI sheet flying off facilities. Working with the Health sector, WASH sectors partners were involved in AWD preparedness and planning including simulation exercises with hygiene promoters, community health workers in selected camps. A detailed rapid response and communication flow chart, joint assessment and reporting tools was developed by WASH and health sector to monitor and respond to AWD alerts. The sector also worked with the Bangladesh Institute ICDDR-B to collect and analyse water samples from tube well and households before, during and after the rains. Alert AWD cases called for specific water sampling and analysis around the affected household(s).

**While major disease outbreak did not occur, and sector provision was not disrupted by the monsoon, rain and hazard impacts did impact the quality of WASH facilities available to the refugees.** As reported by the ACAPS on the basis of ISCG situation reports, over 500 latrines were damaged during the heavy rains from 24<sup>th</sup> to 28<sup>th</sup> July, of which 300 underwent repairs and 40 were decommissioned. Based on NPM round 11, the ACAPS report further reports that water and latrine access remained almost unchanged in July in comparison to March. Some NGOs interviewed for this report, however, reported that households whose usual latrine had been damaged often accessed other household clusters' latrines - in some cases causing conflicts requiring arbitration.



## Emergency Telecommunication Sector

**ETS engagement in cyclone and monsoon preparedness planning focused on strengthening the VHF/HF radio network against a high wind scenario.** The radio masts in Cox's Bazaar have been standing through monsoon for several decades. In preparation for damage, ETS has repeater spares on order consistent with good practice that an adequate inventory of spare equipment be maintained.

**As the monsoon is not associated with high winds, impact of seasonal weather events was minor - but concerns remain about the general reliance on cellular networks for coordination purposes.** The information cascading and reporting SOPs of many stakeholders rely on WhatsApp and cell phone calls both in normal and response situations. However, cellular networks and specific applications can be blocked - as has been considered specifically for the Rohingya camps and has in fact happened nationally for short periods in the past. Lack of access to VHF/HF radio resources by NGOs severely limits emergency response coordination when cellular networks have failed or are blocked. Work-around arrangements must be put in place to ensure that key sectors such as the health sector can remain operational.

## Logistics

**Procurement and installation of additional warehousing by the Logistics sector enabled prepositioning of agreed Minimum Multi-Sectoral Response packages, but the efficiency of this investment depends on the accuracy of risk scenarios underpinning planning.** As a support sector providing common services, the engagement of the Logistics sector in the preparedness planning in the first half of 2018 was crucial in enabling other sectors to implement contingency measures. One observation from the Logistics sector regarding the 2018 monsoon season is that other sector's planning scenario affects the demand for storage services. Reliable seasonal forecasts and an well-founded planning scenario can help optimize use of storage space and reduce unnecessary costs.

**Monsoon impact on the logistics sector operations were minor.** Due to supply chains extending up to Chittagong city, the Logistics sector area of operations extends beyond Ukhia and Teknaf into Cox's Bazaar and Chittagong districts. The sector reported minimal monsoon impact and no significant disruptions during the monsoon, save minor access issues caused by road congestion and damage on roads inside the camps.

**Stronger enforcement of the weight limitations and road closures in 2019 can help decrease monsoon-time damage to roads.** During the initial rains around 10<sup>th</sup> June, it was announced that certain arterial and internal roads in Kutupalong camp were closed, prompting clarification of lines of responsibility and authority. Working with civil and military authorities, the sector communicated with military engineering, SMEP and RRRC to advise on limitations and communicated these advised limitations to the humanitarian community. However, there was only self-enforcement to these limitations during the 2018 monsoon. Work on traffic management and weight/size limitations was initiated in 2018 and will continue in 2019, including the construction of guard huts to support traffic management within the camp.

**With conditions changing rapidly during episodes of heavy or sustained rains, precise communications from the Logistics sector regarding physical road access constraints are crucial to guide stakeholders' actions.** During the mid-June rain event, there was confusion among actors regarding a) whether vehicle access restrictions applied to emergency vehicles, b) whether access constraints applied to vehicles or to on-foot traffic as well, and c) whether access constraints were inside the camps or on arterial roads leading to the camps. Agreement was reached that communications about access should continue to be specific with regards to locations and nature of constraints and should always be forwarded in their entirety when cascaded within the humanitarian coordination structure.

## Shelter

**The fragility of the bamboo-, CI sheet-, and tarpaulin-based built environment of the camps spurred early and sustained shelter sector engagement in monsoon and cyclone risk management.** The shelter sector conducted extensive research and development into robustness of different shelter designs throughout the pre-monsoon period, and worked closely with the Health, Education, and Protection sectors to support mapping, decommissioning and strengthening of facilities within the camps. The shelter sector also participated in the inter-sectoral Early Warning working group which worked to review early warning options and core messaging needed to prevent loss of life due to exposure to hazards and extreme weather. The preparedness and response approach of the sector, approved by the Shelter Strategic Advisory Group, also included key advocacy messages for dialogue with government and other stakeholders. Shelter upgrades were accelerated to facilitate improvement of shelter quality before the monsoon.

Recognizing the limitations of the refugees' shelters to withstand hazard impacts, shelter sector monsoon preparedness focused on readiness for replacement and repair of shelters. Shelter kits were included in the Minimum Multi-Sector Response Packages provided to affected families and were accorded priority for pre-positioning within the camp. Before and during the monsoon, training and refresher sessions on Shelter Emergency Response and rapid damage verification were provided to sector partner staff.

Despite intense risk reduction and preparedness efforts by the sector, the baseline fragility of the permitted shelter materials proved unable to withstand seasonal impacts - affecting refugees' well-being and perceptions of safety. As reported by the ACAPS in its report on changes in the camp during the monsoon, shelter safety concerns rose at the primary safety concern of 30.5% of the refugees in March, to being one of three primary safety concerns of 62.6% of the population in July. An increase in percentage of refugees concerned about landslide risk to shelters was also observed, up from 6.2% in March to 22.7% in July. Following the initial rains, it was also mentioned in lessons learnt discussions that families were hesitant to report shelter damage due to fears of being relocated.

## Education

Education sector preparations for the 2018 monsoon focused on minimizing monsoon impact and secondary impacts such as displacement of households on children's access to learning. Preparedness activities focused on developing SOPs for temporary closure of learning spaces during adverse weather, mainstreaming of disaster and climate information in learning spaces, identification and reinforcement/closure of particularly vulnerable learning spaces, and development of protocols for which spaces could or could not be used for temporary sheltering of displaced households.

As documented by NPM Round 11 and presented by the ACAPS report on changes in the camp during the monsoon, the rainy season had significant impact on continuity of learning space activities and children's participation. Altogether, 180 learning centres were damaged by landslides or flooding. Decreased site navigability due to monsoon weather had a significant effect on children's access to learning centres during the monsoon. The percentage of locations where weather was a challenge for children travelling to learning centres was 5.3% prior to the monsoon but had increased to 31.7% in July.

In response to monsoon impacts and temporary sheltering of monsoon-affected households in learning spaces, tracking of usable learning spaces became a priority for the sector. The reduction in available learning spaces during the season was recognised as a big challenge, and eventually led to the development of a harmonised methodology and dataset for the facility tracking under the ISCG information management working group.

Learning from these impacts, the education sector risk management strategy for the 2019 monsoon emphasizes structural site improvements, facility upgrading and stock piling of materials for repairs. Identified schemes include slope stabilization with vetiver grass, improved drainage so that floodwater does not enter facilities, improved joints in bamboo structures, stockpiling structural materials for quick repairs to facilities, and improved accessibility to facilities, especially for disabled people.



## RECOMMENDATIONS FOR ENHANCING MONSOON PREPAREDNESS

Based on analysis of the above lessons learnt, the DRR technical advisory team recommends that:

**The monsoon is not an emergency in and of itself, but a full one third of any given year, characterised by increased stress and heightened risk of shocks. Capacity for coordinating rainy season response to the affected population should therefore largely be integrated in regular coordination arrangements.** To avoid inefficiencies and duplication of functions, preparedness for the monsoon as a season should not trigger the creation of new decision-making and overarching coordination mechanisms within the refugee response. More effective and efficient measures could include seasonal reinforcement for everyday coordination capacity, provisions for surging additional support for shock events, and pre-identification of alternate working and decision-making modalities for shock events. The integration of DRR mainstreaming, monsoon continuity and cyclone preparedness in the Joint Response Plan 2019 is a good starting point, which needs to be followed up on JRP monitoring frameworks and mid-term planning.

**To reduce the amount of residual risk which has to be managed through preparedness and response, the dry season and mid-term planning processes should be utilized to the fullest extent possible to mitigate and prevent the creation of new risks. Disaster risk reduction must be mainstreamed into regular programming throughout the year and lessons learnt shared with development actors investing in and around the camps.** The 2019 Joint Response Plan integrated disaster risk reduction mainstreaming as a central principle - but this principle must be operationalized in budgets and work plans across the refugee response. Similarly, mid-term interventions by development partners and multilateral development banks have the potential to significantly reduce risks, but the unique nature of the camp risk context require application of the lessons learnt in 2018 to make sure interventions are appropriate. Important opportunities to significantly decrease monsoon-related threats to the dignity, safety and well-being of the Rohingya include: utilization of community-based disaster risk management approaches, facility design research and development, enforcement of bamboo treatment guidelines, bio-diverse planting schemes, utilization of the most robust materials allowed at any given time, and risk-sensitive site macro-planning and development projects. Risk-sensitive implementation and construction also reduces the necessity for costly replacement and repair due to seasonal and extreme event impacts.

**As most of impacts of a 2018-scale monsoon are manageable at the camp level, monsoon preparedness planning for 2019 must focus on enabling operational continuity and robust camp-level response planning and coordination.** This means that the ISCG Monsoon Response plan and sectoral plans should be critically reviewed with an eye to filling information gaps, clarify ambiguities and address unresolved issues, based on feedback from the affected population, camp-level stakeholders, and in particular the site management support agencies. Sharing of internal agency preparedness and response plans as well as volunteer ToRs and Sector Focal Point ToRs will be important to eliminate ambiguities and clarify expectations. Establishing clear SOPs for cascading of information on conditions and decisions would reduce uncertainty. Due to high turnover, orientations, training and other support on preparedness planning and monsoon response coordination should be offered to new site management support staff, Camp in Charges, and other government counterparts.

**Adequate resources for reinforcing, maintaining, clearing and repairing roads and paths and enforcing vehicle restrictions are crucial for ensuring operational continuity in the rainy season and camp-level**

**response, and investment in sustainable capacity for these functions should be a priority.** The ability of sectors to maintain service and distribution continuity was crucially enabled by the leadership of the RRRC, LGED, local government and the military, continuous support from the logistics sector, and repair and reinforcement works implemented through SMEP. Ensuring sufficient resources and support for these actors to continue to fulfil these and new functions during subsequent monsoons is vital to ensure service and relief delivery.

**Strengthening of the sectoral focal point and mobile response team systems is necessary to ensure that timely relief and support reaches monsoon-affected households.** The delivery of additional response and relief to monsoon-affected households is contingent on the performance of the sectoral focal points and mobile response team in the camps. Sectoral focal point and mobile response duties currently come in addition to regular duties of the appointed organisations and personnel. During the monsoon, they are therefore juggling their regular deliverables as agreed with their donor agency, monsoon-related operational challenges, and additional demands to deliver response to affected households. As a result, response to monsoon-affected household needs were at times delayed during the 2018 season. Mainstreaming of monsoon continuity measures in 2019 Joint Response Plan projects requires project planning that acknowledges the effect of a more difficult operational environment as well as the spikes in need generated by impact on households. Organisations should consider hiring additional human resource in the season to mitigate staff exhaustion and deal with spikes in demand caused by monsoon impacts. This is especially critical in the case of sectoral focal point organisations, many of whom are sub-contracted by UN agencies and must balance monsoon response delivery against project deliverables.

**While the monsoon is characterized by continuous stress rather than frequent shocks, the risk of an extreme rainfall event or heavier monsoon does remain. Integration of the overall ISCG plan with government, agency, and camp-level plans should be a priority to enhance preparedness for this.** Experience from the 2018 monsoon shows that the volume of households in need, road access and navigability are the key factors in enabling or delaying response delivery at camp-level through the sectoral focal point system. An extreme event or sustained heavy monsoon may increase volume of affected households or decrease access and navigability dramatically - potentially requiring the district government, armed forces, or major UN agencies to take a more prominent role. There is considerable scope to ensure that the ISCG Monsoon Plan is better informed by government and UN agency plans; likewise, to strengthen the links between camp level plans and the overarching plan. Monsoon preparedness dialogue involving both sectors and major agencies, ISCG-DC joint planning, and civilian-military coordination must be continued to ensure 2019 monsoon preparedness.

**There is an urgent need for a simulation exercise to test the readiness of the coordination structure and mechanism to incidents requiring ISCG-level coordination of response or government-directed, district-level coordination of response.** The 2018 monsoon demonstrated that the incident categories and coordination with government outlined in the operational plan did not correspond to reality. To ensure that monsoon and cyclone preparedness planning can be updated to reflect actual decision-making, needs assessment and information cascading options, a table-top simulation exercise testing assumptions and critical facilities should be organized as soon as possible. The exercise should be jointly organized together with the Humanitarian Country Task Team as well as government at district and upazila level, and repeated at an annual basis. The learning from this exercise should feed into the overarching Monsoon and Cyclone preparedness plans, as well as upazila- and camp-level plans.

**The engagement of Rohingya men, women, boys and girls in community-based disaster risk**

management should be strengthened and complemented with systematic, scaled-up communication on risks, weather conditions, and what support is available to affected households. Global experience from disasters consistently shows that the community members are the primary first responders and preparedness stakeholders. Although specific projects and programmes have consulted with the communities in implementation of activities, the major thrust of monsoon risk mitigation and preparedness activities appear to have been directed from the top down. Investing in gender, age and disability-inclusive community preparedness and resilience should be prioritized moving forward. Training of volunteers and community members on first aid, search and rescue and psychosocial first aid is important, but effectiveness is limited unless integrated in community-owned preparedness planning. Communications with the community on risks and preparedness have been fragmented, and mass awareness has not been achieved. Regular weather information should be made available to the refugees through existing information channels and hubs.

**Better knowledge management, training, and knowledge transfer on how to manage monsoon risk in the Rohingya refugee camp context should be stepped up to ensure that key officials and staff are able to fulfil their functions.** Common planning exercises with government counterparts provides an important entry point, as could enhanced consultation with local NGOs, many of whose staff hold disaster management degrees from the many national universities offering courses. There is local knowledge of landslide and flash flood management, particularly from the Chittagong Hill Tracts, which is not currently being tapped. To counteract the knowledge gaps created by turnover in key positions before the next monsoon, ISCG and agencies' individual monsoon preparedness planning documents must be kept updated on a running basis and made accessible to a wide range of stakeholders. Recognizing that the Rohingya refugee camps present a unique risk scenario, basic briefing notes in English and Bangla should be developed to ease induction of new staff. In support of the localization agenda and institutionalizing knowledge, lessons learnt should be shared with national training and educational institutions providing qualifications in disaster management.

**To inform risk reduction activities and ensure efficient monsoon preparedness and response, high-quality and coordinated hazard mapping, risk assessment and seasonal forecasting must be made available.** Sectors must plan for the worst case in their stockpiling and pre-positioning of relief supplies. When the worst case fails to occur, the expense of acquiring the materials, transporting, storing and disposing of them before their expiry date is large compared to the value received by beneficiaries. Similarly, over-staffing for coordination and response purposes is inefficient use of resources. An accurate modelling of the worst case could save costs compared to a less accurate, cautious assessment, and prevent loss of lives from an underestimated worst-case scenario. The newly created Natural Hazards Technical Working Group creates a space for consolidating and synergizing the discrete risk assessment initiatives of different agencies into products for planning purposes. However, the December 2018 activation of the working group gives it limited time to work before the 2019 monsoon.

**The sustainability and equity of monsoon-related risk reduction and response should be strengthened through increased coordination with disaster risk management duty-bearers and support to affected populations in the host communities and Cox's Bazaar district.** Risk reduction and preparedness efforts prior to the 2018 monsoon focused on preventing the worst-case scenario of monsoon fatalities among the refugees. However, the majority of fatalities due to rainfall-triggered landslide during the 2018 monsoon happened in other areas of the district as well as the neighbouring Chittagong Hill Tracts. The extreme rains on and after July 25<sup>th</sup> caused significant flooding in the northern areas of Cox's Bazaar district, and solid and fluid waste from the refugee camps affect communities downstream. Independently of the Rohingya crisis, the poor and extreme poor households and communities in Cox's Bazaar are



chronically vulnerable to the impacts of disaster, extreme weather and the monsoon. Similarly, the high frequency of disasters and extreme weather makes disaster risk management a core government task nationally and in the country, with extensive regulation of roles, responsibilities and standards. Effective, equitable monsoon and disaster risk management for this local context should therefore target according to need and not beneficiary category, involve mandated government duty-bearers, link in with existing public disaster management plans, and consider district-wide monsoon and extreme weather vulnerability.

**To ensure that preparedness planning is enhanced and DRR mainstreaming is implemented, continued technical support and monitoring of disaster risk management commitments is necessary.** Effective monsoon and cyclone preparedness depends on inputs from a multiplicity of government and non-government stakeholders, and seasonal variety in Bangladesh does not provide grace periods between the cyclone and monsoon seasons. The ISCG Emergency Coordination Cell is closing in December 2018. While experience from the 2018 monsoon indicates that the cell was over-staffed compared to the actual scenario, on the ground capacity to monitor and support monsoon and disaster preparedness planning should be maintained, even if monsoon coordination functions are absorbed in the usual field coordination structure.

## Annex 1: Terms of Reference 2018 Monsoon Season Lessons Learned Exercise

### Background

Having been requested by the ISCG Heads of Sub-Office Group to serve as technical advisor to ISCG on disaster risk reduction-related issues, UNDP maintains a Cox's Bazaar-based DRR Technical Advisory Unit to support the ISCG decision-making fora and secretariat to support better extreme weather, seasonal variation and disaster risk management in the refugee response.

As staff turnover has emerged as one of the key challenges to managing and progressing on extreme weather and disaster risk management within the response, capturing and collecting lessons learnt for future reference is key. As part of its ECHO-funded support to ISCG, UNDP has already conducted one round of lessons learnt reviews regarding the spring cyclone season, the findings of which has fed into the September 2018 cyclone preparedness review, review of the contingency plans and will feed into the JRP 2019 process. As the 2018 monsoon season has now come to an end, a second round of lessons learnt interviews is being planned, with the end product to be a Monsoon Season Lessons Learnt report.

### What the Lessons Learnt exercise is:

The 2018 Monsoon Season Lessons Learned Exercise aims to capture knowledge and experience acquired by humanitarian actors during their operations preparing for and working in the monsoon environment in the Rohingya refugee camps. The purpose is to provide a reference document for planning for the 2019 monsoon season, ensure that advocacy is evidence-based, and identify gaps in preparedness which need to be addressed in advance of the 2019 monsoon.

### What the Lessons Learnt exercise is not:

The 2018 Monsoon Lessons Learned Exercise is not a performance review of sectors or agencies. It is not meant to duplicate previous lessons learned exercises following individual events during the monsoon but builds upon these and provides an opportunity to reflect on the season as a whole. It is not meant to place undue burden on sectors or agencies which have already conducted an internal monsoon lessons learnt exercise but provides an opportunity for those sectors or agencies to share their lessons learnt more broadly.

### Methodology

The lessons learnt will be collected through KIIs and document review, as well as FGDs on selected topics. Key points noted will be shared back to KIIs after the interview, while the draft report will be shared to the sector coordinator group and ETF before finalization. The exercise and write-up will be facilitated by one national and one international member of staff in UNDP Cox's Bazaar's DRR Technical Advisory Unit.

### Key Informants

Humanitarian sector coordinators, ISCG secretariat, key operational UN agencies, IFRC and partner national societies, NPM, SMEP, UNDSS, NGO platform, REACH, ECHO, DFID.

### Timeline

The lessons learnt exercise and report is expected to be completed by 14<sup>th</sup> November 2018.

## Annex 2: Key Informant Interview Guide - Cyclone Preparedness Lessons Learnt

Thank you for taking the time to let us interview you. This should not take more than 30 minutes of your time, unless there are specific topics which you would like to go in-depth on which are key to your sector.

We're working with a definition of the spring cyclone season as lasting roughly from mid-April till mid-June.

As there was no cyclone during the 2018 Spring Cyclone season, this interview will focus on the preparedness work, the two occasions on which the CPP flags were raised in the camps (rightly so on 29<sup>th</sup> May; wrongfully on 9<sup>th</sup> June), and other weather phenomena associated with this season, such as thunderstorms, wind bursts and high temperatures. This lessons learnt review is meant to result in a short report to be shared with both the humanitarian community and the government.

1. Could you please state your designation, the duration of your mission in Cox's Bazaar so far, and your role in the natural disaster preparedness and response work of your sector/agency.
2. As far as you are aware, when did your sector/agency first begin preparations for the 2018 spring cyclone season? Was this too early or too late? (If not mentioned in answer to the above: As far as you are aware, was your sector/agency consulted in the development of the December 2017 draft of the cyclone contingency plan?)
3. What were the key actions taken and processes initiated within your sector/agency in preparation for the 2018 spring cyclone season? (If it is unclear whether the respondent is talking about cyclone or monsoon preparedness, ask follow-up question.) Were these actions and processes completed by mid-April? If yes, what enabled this; if no, what were the barriers; if mixed, what was what?
4. Which intersectoral actions, platforms and processes did your sector engage in, in preparedness for the 2018 spring cyclone season? In your opinion, which of these intersectoral a/p/ps were productive, and which were not? Why?
5. How did the workload associated with the cyclone preparedness affect other processes and work in your sector/agency?
6. Was your agency/sector's work or outcomes for the Rohingya affected by any of the weather phenomena associated with the season - thunder storms, high temperatures, and/or gusts of high winds? How would you change planning for spring 2019 considering this experience with regular weather conditions during this season?
7. As mentioned, the CPP flags were raised twice during the season. In your opinion, what actions need to be taken to ensure that both Rohingya and humanitarian agencies are fully aware of the cyclone early warning system? What can your agency/sector do to support this?
8. In your opinion, what are the most important processes and actions which need to be followed up on to ensure adequate preparedness for the Autumn 2018 cyclone season? Are there any processes/actions which should be reconsidered or pursued differently?
9. What - if any - support does your sector/agency require from the ISCG Emergency Coordination Cell, Heads of Sub-office and/or disaster management technical specialists to push forward on these actions and processes?

10. Is there something I have not asked you about, which you would like to highlight or stress in terms of lessons learnt from preparedness for cyclone and operations during the cyclone season? Are there any specific agencies or NGOs in your sector who you believe should be interviewed as part of this process.

This last question is not related to the cyclone preparedness work, but since I have you here I would like to ask if you have any feedback on how UNDP can improve its disaster technical advice services to the humanitarian community. This answer will be taken down on this separate sheet and can be done anonymously if you would like it to; we welcome and value all constructive criticism and suggestions.

11. Do you have any feedback on what UNDP could have done better or differently to support the humanitarian community, your sector/agency in preparedness for the 2018 spring cyclone season?

Thank you. Once interviews are done, key lessons learnt will be presented to the EMPRTF, ISCG, the meeting of the sectoral coordinators, and Heads of Sub-Office meeting. The final report will be made available in the beginning of August.

### Annex 3: Interviewees, Cyclone preparedness lessons learnt key informant interviews, Aug 2018

CwC coordinator interim (WHO),	Carolyn Davis
Education sector co-coordinator,	Jacklin Rebeiro
ETS Coordinator,	Min Sun
ETS coordinator interim,	Haider Baqir
Former ETS coordinator,	Michael Dirksen
Food Security coordinator interim (FAO),	Peter Agnew
GBV sector coordinator,	Saba Zariv
Health sector IMO,	Patricia Thornhill
Health sector IMO,	Rosie Jeffries
Logistics sector coordinator,	Lucy Styles
Nutrition sector coordinator,	Ingo Neu
Protection sector officer (coordination),	Maria Ferrante
Former protections sector officer,	Hanane Fellahi
Shelter sector coordinator,	Hani Chatila
Former Shelter sector coordinator,	Victoria Bannon
Site Management sector co-coordinator,	Kate Holland
WASH sector coordinator,	Bob Bongomin
Former WASH sector co-coordinator,	Ewan Chainey
American Red Cross,	Achala Navaratne, Harun-al Rashid
BBC Media Action,	Shafaat Ahmed
IOM Communications with Communities,	Virginia Moncrieff
IOM Needs and Population Monitoring,	Benedetta Cordaro
IOM Site Management,	Clementine Favier
ISCG Field Coordination team,	Naim Talukder
OCHA Bangkok,	Daniel Gilman
UNHCR Site Management,	Paer Westling
Translators Without Borders,	Ben K. Noble
WFP,	Sudip Joshi

## Annex 4: Key Informant Interview Guide - Monsoon Lessons Learnt

Thank you for taking the time to let us interview you. This should not take more than 30 minutes of your time, unless there are specific topics which you would like to go in-depth on which are key to your sector.

We're working with a definition of the monsoon season as lasting roughly from 15<sup>th</sup> June to 7<sup>th</sup> October (when the BMD website announced that the monsoon had withdrawn from Bangladesh).

The interview will focus on preparedness and response efforts in humanitarian sectors with particular attention to episodes of heavy rain: e.g., July 24 - 26.

This lesson learnt review is meant to result in a short report to be shared with both the humanitarian community and the government.

[Show the ToR, if not already seen. Also show the ISCG monsoon lessons learned if relevant.]

Please state your designation, the duration of your mission in Cox's Bazaar so far, and your role in the natural disaster response work of your sector/agency

1. Which rain, flash flooding and landslide mitigation and preparedness activities were undertaken in your sector before the start of the season in mid-June?
2. How did the impact of the monsoon affect operations in your sector - did it cause any disruptions, delays, damage or implementation challenges compared to the dry season?
3. (If applicable: What disruptions, delays or damage affected your sector/agency's capability to implement your core activities? Were there any notable events?)
4. What key actions were taken and/or what processes were initiated in your sector to manage the impacts and maintain operational continuity during the 2018 monsoon season?
5. (If applicable: did the sector manage to follow up on lessons learnt identified after the initial rains in June?)
6. What are the key best practices and lessons learnt during this monsoon that must be considered in planning for the 2019 monsoon?
7. Are there remaining gaps or weaknesses in preparedness or mitigation which must be addressed before the beginning of the 2019 monsoon?
8. In your experience, were the pre-monsoon risk assessments accurate in determining geographical areas and severity of landslide and flash flood risk? On a scale of 1 to 10?
9. Which sources did you consult for weather forecasting information during the monsoon period? On a scale of one to ten, how accurate did you find them?
10. Is there something I have not asked you about, which you would like to highlight or stress in terms of lessons learnt from operations during the monsoon season? Are there any specific agencies or NGOs in your sector who you believe should be interviewed as part of this process?
11. While this interview has focused on the monsoon, we are just a few weeks out from the Cyclone Titli. Do you have any observations on Cyclone Titli which you would like to share, so we can follow up on them in the Cyclone Lessons Learnt Review?

Thank you. Once interviews are done, key lessons learnt will be presented to the Emergency Task Force, ISCG, the meeting of the sectoral coordinators, and Heads of Sub-Office meeting. The final report will be made available at the end of November.

## Annex 5: Interviewees, Monsoon lessons learnt key informant interviews, Oct-Nov 2018

ETS Coordinator,	Min Sun
Food Security sector coordinator,	Stella Atiti
Food Security sector IMO,	Habia Hasan
Health sector IMO,	Rosie Jeffries
GBV sector coordinator,	Saba Zariv
Logistics sector coordinator,	Andriy Nechay
Nutrition sector coordinator,	Ingo Neu
Protection sector officer (coordination),	Maria Ferrante
Shelter sector coordinator,	Hani Chatila
Site Management sector -coordinator,	Oriane Bataille
ACTED,	Timon Bulthuis (focus group)
Danish Refugee Council,	Lama El Batal (focus group)
IOM Site Management,	Bruce Spires (focus group)
UNHCR Site Management,	James Macharia (focus group)
UNHCR Site Management,	Richard Hannah (focus group)
Action Against Hunger (ACF),	Md. Abdul Malek
BBC Media Action,	Shafaat Ahmed
BRAC,	Hasibul Mannan, Shuvo Sk
Danish Refugee Council,	Tom Stork
OXFAM GB WASH,	Zulfiqar Ali Haider
SMEP,	Damon Elsworth, Aloysius James

## THE UNDP DISASTER RISK REDUCTION AND RECOVERY MANDATE

Nearly half of the countries where UNDP works are prone to conflict, disasters, political instability and economic shocks. UNDP assists countries that are addressing sudden and slow-onset events that destabilize economies and communities by supporting their governments as they move out of the crisis response phase and into the planning and implementation of longer-term recovery activities.

UNDP's mandate to conduct operational activities in disaster mitigation, prevention and preparedness was laid out by the United Nations General Assembly in 1997 and an additional mandate to ensure inter-agency recovery preparedness was added by the United Nations Emergency Relief Coordinator in 2006. Within the scope of these mandates, UNDP has provided sound leadership in the field of disaster risk reduction and recovery for many years, which includes leadership in assessment, planning, programming, coordination and capacity building. UNDP champions the need to credibly address Early Recovery in humanitarian contexts and chairs the Cluster Working Group on Early Recovery. In Bangladesh, UNDP chairs the standing national Early Recovery cluster with Government and co-chairs the Shelter cluster with IFRC.

In Bangladesh, UNDP is a long-standing partner of the Government of Bangladesh in implementing comprehensive disaster management and recovery programming. Prior UNDP disaster risk management activities in Cox's Bazaar include disaster preparedness planning, flash flood and cyclone risk reduction, community-based landslide risk management, and cyclone and flash flood shelter recovery.

In the Rohingya Crisis response, UNDP serves as technical advisor on disaster risk, preparedness and risk reduction to the ISCG and the humanitarian community. As part of its Cox's Bazaar sub-office, UNDP maintains a Disaster Risk Technical Advisory Unit. Support for the core activities of the unit come from the European Commission, while additional technical support has been provided by RedR Australia, Swiss Agency for Development and Cooperation SDC and MSB (the Swedish Civil Contingencies Agency).

### For more information, please contact:

The Disaster Risk Management in Cox's Bazaar project  
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**DISASTER RISK  
REDUCTION  
CONSORTIUM**