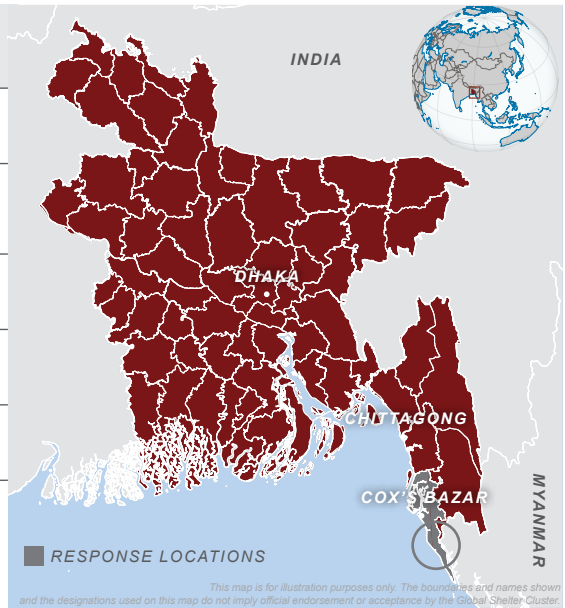


OVERVIEW BANGLADESH 2017–2018 / ROHINGYA CRISIS

CRISIS	Rohingya Refugee Crisis, Cox's Bazar, 25 August 2017–onwards
TOTAL PEOPLE AFFECTED*	260,000 households (1.3 million individuals)
TOTAL PEOPLE DISPLACED*	184,200 households (920,900 total Rohingya Refugees in Cox's Bazar)
TOTAL SHELTER NEEDS*	189,600 households (948,000 individuals)
RESPONSE LOCATIONS	Ukhiya and Teknaf sub-districts, Cox's Bazar district
PEOPLE SUPPORTED*	180,000 households (900,000 individuals).
RESPONSE ACHIEVEMENTS*	<p>180,000 households received Emergency Shelter Kits</p> <p>180,000 households received Upgrade Shelter Kits</p> <p>144,000 households received Tie Down Kits</p> <p>11,000 households received LPG stoves and cylinders</p> <p>145,000 solar lights // 48,000 solar torches distributed</p>

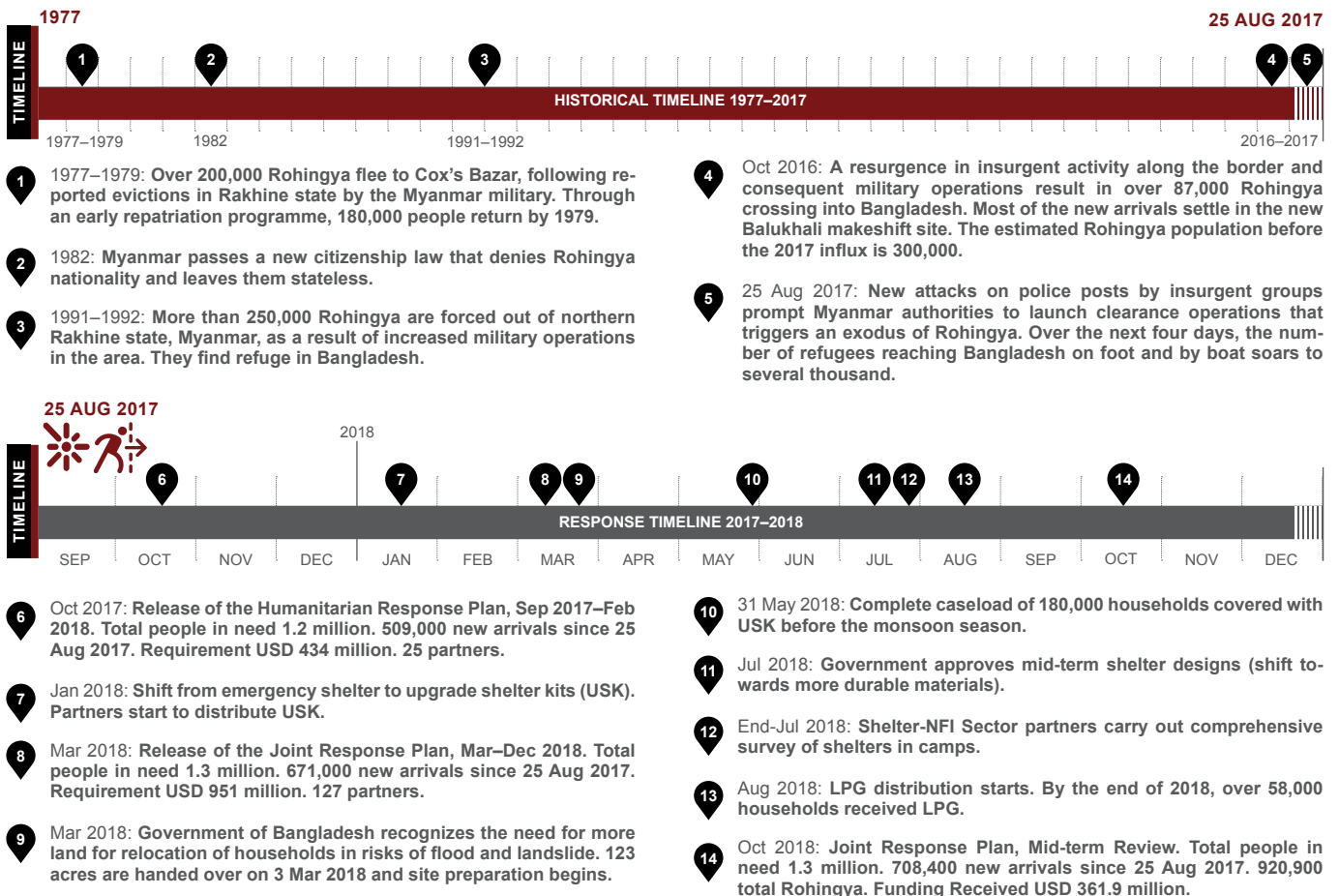


This map is for illustration purposes only. The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the Global Shelter Cluster.

* As of 31 Aug 2018. Joint Response Plan, Mid-term Review, Mar–Dec 2018. Figures include host communities.

SUMMARY OF THE RESPONSE

The humanitarian response to the massive refugee influx from Myanmar to Bangladesh was the largest single operation of 2017. For the Shelter Sector it was particularly challenging, due to the site conditions, congestion, limited shelter options and the extreme weather patterns. The Sector provided in-kind and technical assistance through different phases and an incremental approach to improve living conditions and safety within the settlements. In coordination with the Site Management Sector, the response also focused on site improvements and larger infrastructure works, as well as preparedness activities ahead of the monsoon season.



CONTEXT

The Rohingya, who numbered around one million in Myanmar at the start of 2017, are one of the many ethnic minorities in the country. Rohingya represent the largest percentage of Muslims in Myanmar, with the majority living in Rakhine state.

Migration between what is now Myanmar and Bangladesh started in the XIX century, although the first significant refugee influx took place in 1978, when an estimated 200,000 Rohingyas took shelter in Cox’s Bazar district and, over the next two years, gradually returned home. This mass displacement set the pattern for the next 40 years, as instability in Myanmar pushed tens of thousands to seek safety in the peninsula.¹

Some of the Rohingya who arrived in 1991 and 1992 remained in two registered camps. The government registration of Rohingya population stopped in 1992 and, since then, newly arrived Rohingya – referred to as “undocumented Myanmar nationals” – have been living in makeshift settlements or with host communities. Until 2017, the registered camps were home to only around 32,000 registered refugees, while another estimated 268,000 resided outside of these camps.²

BACKGROUND TO THE CRISIS

Prior to 2017, international and local partners supported the Rohingya refugees in the two official camps as well as in the makeshift camps requiring support. Agencies had limited capacity and funding to improve the shelter and infrastructure and raise the profile of the Rohingya displacement. Constructed from bamboo and in some cases mud and timber, the typical refugee shelter needed constant maintenance and a timely replacement schedule. Space issues meant that recognized standards were never met, and conditions dropped further in the makeshift camps.

On 25 August 2017, insurgents attacked army and police posts in Rakhine, resulting in widespread violence and mass displacement of civilians. In the following hours and days, Rohingya began to flee across the border to Cox’s Bazar. By 20 September, more than 420,000 people were estimated to have crossed into Bangladesh. This mass influx compounded the existing challenges around the provision of assistance to the Rohingya who were already in Bangladesh.

Despite Governmental agreements between Myanmar and Bangladesh, there were no formal return processes in 2017 or 2018. The international community did not support the return, as the safe and dignified conditions for this process had not yet been met.



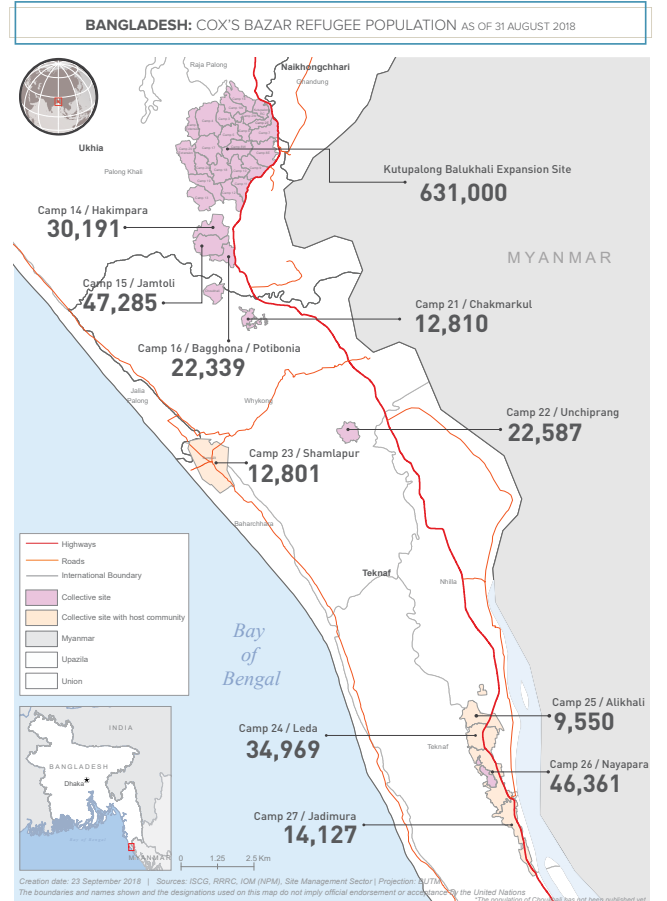
Thousands of refugees arrived daily at the Bangladeshi border after attacks to their villages in August 2017.



Access through the settlements was extremely challenging, mainly due to the harsh landscape and the scale of the influx.



Rohingya had been living for years in the same area, but the scale of the 2017 influx was unprecedented. The site was mainly inhospitable, with steep, sandy hills and low-lying, flood-prone areas unsuitable for habitation.



Refugees mainly settled in and around existing settlements. Map: ISCG.

SITUATION AFTER THE 2017 INFLUX

Those fleeing put an immense strain on infrastructure, services and the host population. Pre-existing settlements and camps (particularly Kutupalong and Balukhali) expanded with the new influx, while new spontaneous settlements also formed and continued to grow in the following weeks. Significant numbers of new arrivals were being absorbed into the local host community.³

The speed and scale of the influx resulted in a critical humanitarian emergency. August in Cox’s Bazar is very wet and humid and so adequate shelter and essential NFIs were a priority. The refugees arrived with very few possessions. In many cases, they used most of their savings on transportation and constructing a shelter, often out of sticks from small trees and bushes foraged from the surrounding hills, locally harvested bamboo and thin, unsuitable plastic sheeting.⁴ These were also supplemented by distributions from uncoordinated humanitarian actors. Initially settling in vacant plots, these hastily erected shelters were inadequate and offered little protection from the rain.

As more refugees arrived, overcrowding forced new arrivals to seek space in land that had not yet been gazetted by the Government of Bangladesh. Prior to the influx, the area around Kutupalong and Balukhali was characterized by undulating hills covered in sparse vegetation. Between these unstable sand hills are low lying basins which drain the whole area. The little vegetation was stripped for shelter materials and fuel and unplanned terracing for shelters cut, increasing risks of landslide and flooding. Due to the complex water catchment area and the lack of data on how the new terrain would react, these events were largely unpredictable.⁵



Bridges were erected by refugees and later upgraded to allow better accessibility across the site. Footpaths, stairs and roads all had to be created from scratch.



The site was completely transformed in just a few months. Less than a year before this picture was taken, this area was a natural reserve.

THE HARSH REALITY

Rarely has a combination of factors come together to create such an inhospitable living space for a displaced population. The lack of resources, no access, massive influx, a harsh landscape prone to weather-induced disasters, combined with a very vulnerable population, created probably the most challenging scenario Shelter and Settlement actors have dealt with.

The location, terrain and space available for the population was fundamentally unsuitable for habitation. Shelter interventions could not meet minimum standards and despite best efforts, were not able to properly withstand the weather conditions. During the first 17 months of the operation, despite no standards or guidelines being met, the response provided many lessons to be learnt.



Access in and around the site was extremely challenging. When it rained, steps became impassable and perilous. Improved access became a priority in early 2018, in preparation for the monsoon rains.



Drones allowed to better grasp the scale of the settlements and helped in the planning process. The unsettled green areas to the right were soon occupied.

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Refugees often used upgrade materials to build over old makeshift shelters.

SHELTER-NFI SECTOR STRATEGY

The immediate response from Shelter-NFI partners was to distribute bamboo, plastic sheets, rope and blankets. Stocks held as part of the regular programming were quickly exhausted and substituted by poor-quality, locally procured materials. Tarpaulins were replaced by thin and fragile black plastic.

With the arrival of more actors and materials, including airlifts, the Sector formulated its strategy.

PHASE 1 – EMERGENCY. Emergency shelter for survival and dignity. In the first months, the assistance was standardized through Emergency Shelter Kits (ESKs) – bamboo, shelter-grade plastic sheeting and rope. However, due to pipeline issues, many arrivals did not receive the bamboo. As the demand outstripped the supply, those who had already settled rarely received an ESK. After this phase, the standard of most of the shelters remained very basic.

PHASE 2 – UPGRADE. Shelter upgrades and localized site improvements in preparation for the upcoming monsoon and cyclone seasons. Upgrade Shelter Kits (USKs) contained bamboo poles, rope, shelter-grade plastic sheeting, tools and technical assistance.⁶ Quantity of materials were ascertained through piloting. These sizeable kits were a logistical challenge to get into the camp due to poor access. Another challenge was the availability of bamboo, especially during the start of the monsoon season,⁷ when bamboo cutting stops.

Full implementation of Phase 2 did not start until November, when partners scaled-up, pipelines filled and access improved. With limited resources and time, coupled with the limited land available for most households to expand, it was recognized that an incremental approach would be needed.



Makeshift shelters before the implementation of the upgrade phase of the shelter response were small, often fragile and highly vulnerable to weather hazards.



In phase 3, the Shelter Sector started to implement more durable solutions, such as Mid-Term Shelters.

It was imperative that the USKs were accompanied with technical assistance, training and information materials to ensure positive impact. The Sector Technical Working Group developed key messages in English, Bangla and Burmese and disseminated them through booklets and posters to be used in trainings.⁸

Although the USK was designed to carry out simple shelter upgrades, the quantity of bamboo was sufficient to construct a more traditional shelter and so communities would often collaborate and build over the top of the long row house structures. Communities mainly worked together to ensure upgrade was universal.

The USK target of 180,000 households set in JRP was achieved by the end of May 2018.

PHASE 3 – POST-MONSOON SEASON. This phase represented an incremental move towards the provision of more durable and dignified shelter solutions. Shelter designs and delivery modalities were developed based on analysis of the impact of the monsoon and resistance against the elements, durability of bamboo and the August 2018 shelter survey (including beneficiaries' preferences). The main modalities were Transitional Shelter Assistance and Mid-Term Shelters.



Shelter upgrades and localized site improvements (such as footpaths, stairs and drainage channels) were conducted in phase 2 to make living environments more adequate and protect households from the upcoming monsoon season.

SITE DEVELOPMENT STRATEGY

The site and population density did not allow to apply traditional site planning approaches, and so control of the physical environment and site improvement and development became an immediate priority. In the coordination architecture, these activities fell under the Site Management as well as the Shelter-NFI Sectors.⁹

The site development and improvement strategy focused on small-scale site improvements, site macro-planning, and infrastructure and engineering works, aiming to improve access and living conditions in refugee sites and adjacent host communities, and reduce vulnerability to natural hazards.

To support partners and refugees to conduct site improvements around their plots or groups of shelters, the Sector developed a neighbourhood toolkit and a catalogue of interventions, in collaboration with the Site Management Sector.¹⁰

DISASTER RISK MANAGEMENT

Disaster Risk Management and emergency preparedness activities were mainstreamed throughout the activities of site management support agencies, site improvement and site development partners. DRR techniques were also considered in shelter construction and heavily relied on the experiences of the local humanitarian and emergency network, particularly around post-disaster and cyclone resilient sheltering.

ENERGY AND ENVIRONMENT

The Sector, through the Energy and Environment Working Group, was successful in advocating for the use and roll-out of LPG. Over 11,000 households received LPG stoves and cylinders by the end of 2018. In 2019, partners were upscaling the LPG distributions to reach the entire target population by the end of the year. This fuel source limits the smoke in the shelters, conflicts with the host community related to the collection of firewood, as well as provides environmental benefits (reforestation).

Additionally, in 2018 partners started planting vetiver grass on the bare slopes of the settlements, to protect the hilly terrain from soil erosion, thanks to the plant's deep roots and the stiff, dense foliage that help reduce water run-off. Planting was conducted through cash for work involving refugees and host community members alike. By July 2018, over 500,000m² of land were covered.

NEEDS OF HOST POPULATION

In the first few months of the response, while the immediate needs of the Rohingya were being addressed, little attention was paid to the host community. There was little, if any, understanding or research about the impact of the massive influx on the already vulnerable host population. However, in the 2019 JRP all sectors articulated their strategy to assist the host population.



Millions of pieces of bamboo were needed for the shelter response, as well as the construction of community facilities, bridges and other site improvements. Bamboo was mainly transported by river from the Chittagong Hill Tracts area.

BAMBOO

Two-months after the initial influx, it became apparent that the only viable construction material was bamboo. Bamboo was economically viable, available and was familiar to the Rohingya. It was used as a shelter material, for communal buildings and infrastructure and access projects (bridges, steps, pathways).

In recognition of this, the Shelter-NFI Sector commissioned a study to understand the capacity of markets to supply bamboo for the response. The study confirmed that without a reliable and high-quality bamboo supply, the construction needs of the biggest refugee camp in the world could not be met.

Through the shelter kits, about 23 million pieces of bamboo were distributed, without considering the massive amounts used for communal buildings and infrastructure.

After the emergency phase, the focus was on strengthening and increasing the durability of existing shelters, which were built with untreated bamboo in direct contact with the ground, creating the perfect conditions for pests and rot, which will result in failure in heavy winds and rains.

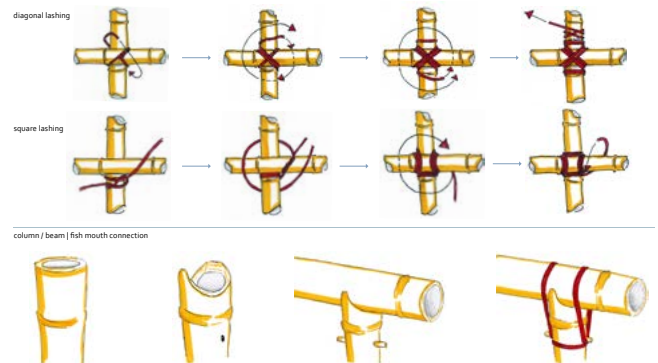
By the end of 2018, significant steps were taken to address these issues. A technical note and report were developed on the durability and treatment of bamboo in Cox's Bazar, technical specifications for bamboo treatment were agreed, and Sector partners achieved a better understanding of the whole bamboo supply chain and key recommendations for sourcing, procurement, handling, treatment and design.¹¹



Site improvements were mainly conducted through cash for work and included slope protection by terracing (above-left) and vetiver plantation (above-right).

ties | connections

have strong ties and connections in your shelter



To support training activities, the Sector developed key messages and illustrations on shelter upgrades, such as bamboo ties and connections.

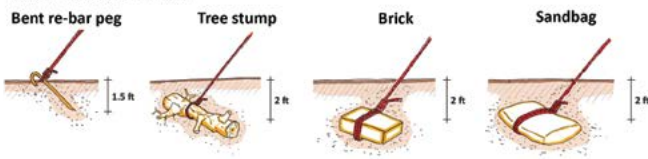
TIE DOWN KITS

In early 2018, attention turned to the impending monsoon and cyclone season and how the shelters constructed by the Rohingya themselves could be improved. Along with the USKs, it was agreed in April 2018 to supply Tie Down Kits (TDKs) to all households in an attempt to enhance the shelter's capacity to withstand high winds.

TDKs were viewed as a stop-gap measure to provide additional resources and technical information to help households prepare for strong wind and cyclone events.

Using a community-led design philosophy, the Sector endorsed two versions of kits, both based on the premise of using rope to literally tie down the shelter and anchor it to the ground. One option used steel pegs driven into the ground to counteract the lift forces, while the other relied on the weight of filled sandbags. Both options worked successfully, however post-distribution monitoring suggested that in several cases metal pegs were placed perpendicular to the ground rather than at the angle, decreasing their relevance. The sand bags were not buried as suggested and their lifespan was shorter than the one of the metal pegs. As of 31 August 2018, nearly 80 per cent of the households in need had received TDKs.

TIE-DOWN OPTIONS



The Site Management Engineering Project was instrumental in conducting large earthworks to modify the challenging landscape.



In the third phase of the response, Mid-Term Shelters were built on plots already prepared by site development partners.

MAIN CHALLENGES IN THE RESPONSE

There are few responses in recent history that faced so many challenges resulting from a unique combination of factors. The speed of the influx was unprecedented and with little warning, catching all existing agencies off-guard, especially as existing resources had been stretched over the monsoon season. Existing shelters already needed repair and rehabilitation due to Cyclone Mora in May 2017.

Access to the sites was challenging, with movement restricted to foot for most parts. As the rains continued into September, earthworks and road construction could not start. Although challenges with procurement, supply and quality of bamboo were identified early, the limited local shelter options amplified the need for a fast shelter response.

Perhaps the biggest challenge – apart from the lack of available land – was the site itself; unsuitable for any large-scale settlement without massive investment in earthworks and drainage, which once the refugees had settled became more and more difficult. The camps and sites remain congested, causing serious impact on the physical and psychological well-being of the refugees, especially of children, women, and people with disabilities.

All shelters and site improvements had to be robust enough to cope with potential significant monsoon rains and cyclones. This was further exacerbated by government restriction on durable solutions and construction materials.

SITE MANAGEMENT ENGINEERING PROJECT

In late 2017, construction of temporary vehicle access roads began across the fast-expanding makeshift settlement around Kutupalong and Balukhali. Early in 2018, some actors began engaging in small-scale site improvements; stairs, bamboo bridges and pedestrian pathways. A gap emerged in maintenance of the heavy infrastructure. The roads, primary drainage systems and slopes became an increasing concern, which led to three agencies joining to create an engineering project named SMEP.

In addition to the direct maintenance, repair and upgrade of infrastructure, SMEP was asked to prepare land for shelters identified at high-risk of landslide and flooding. With a limited window of opportunity, SMEP mobilized 100 heavy machines and more than 5,000 labourers to prepare about 390 acres of safe land for critical relocations.

Crucially, SMEP activities included the creation of fourteen operating bases across the Cox's Bazar district. Materials, labour, equipment and machines were pre-positioned to undertake inspection, repair and maintenance of critical infrastructure. The SMEP repair fleet grew to about 650 daily workers and 30 machines. Wherever possible teams carried out preventative work, however activities were largely responsive through the 2018 monsoon. Teams worked day and night to prevent collapse of slopes lining the main road being constructed by the army.

Activities of SMEP significantly reduced the potentially devastating impact of the monsoon. The outcome of this investment was unhindered access on the camp roads through the monsoon. Success was based on coordination and collaboration between partners; something that is too often lacking in many operations.

LOOKING FORWARD

As the rains faded and access improved towards the end of 2018, there was the opportunity to build on the lessons learnt over the last 15 months and implement Phase 3 of the shelter strategy. The better weather should allow a consolidation of the site improvement and development works to ensure the sites become more resilient to cope with the next monsoon and cyclone seasons. With site planning being scaled up, there was an opportunity to build more durable shelters, which follow minimum Sphere standards.

Data suggested that the weather in 2018 was mild, however history foretells us that at any time a catastrophic weather pattern could wreak havoc on the site and lead to significant loss of life. To ensure the robustness of shelter, the majority of bamboo used would need to be replaced within the following 20 months and new bamboo would have to be placed out of the ground.¹² As a base for more durable shelter, bamboo should also be treated. At the scale it was needed, this presented a major challenge.

One of the responsibilities of shelter partners was also to ensure the healthy and safe living space. Improving living conditions (increase in shelter size, privacy and ventilation) would need to go hand in hand with increased community-led and owner-driven approaches, as well as possibility of choice linked with marked-based shelter solutions.

While shelters may not withstand the cyclonic winds, the Shelter-NFI and Education Sectors were cooperating in developing learning centres that can also function as cyclone shelters.

TAPPING INTO ROHINGYA RESILIENCE

Reflections of a shelter officer in December 2017

“Every site visit revealed a new example of the resilience of the Rohingya. Access was extremely challenging, but we soon realized that if we dropped a truck full of bamboo next to a stream, the next day there would be a footbridge built without any guidance or input from our team.

Without detailed maps we would navigate by landmarks – prominent houses, a sequence of steps, a particularly steep slope – and so we would monitor the development of the houses. The majority were using their own materials – bought, loaned or swapped between their own community. Nothing was wasted and there was no lack of technical skills. It became apparent that our role as shelter officers was not to build anything – it was just to bring the materials in and let them rebuild their lives.

In one particular area, the people had transformed a pile of bamboo, tarp and rope into a community. Trees and gardens had been planted, a shop opened, drainage cut down the street, innovative sliding doors installed, intricate weaving to improve ventilation.

Families made the most of what they had and always had a friendly wave or gesture towards us, as we struggled to comprehend the scale of the crisis.

The experience reinforced my belief that solutions are found within a displaced community and that our role as international agencies is merely to support and learn.”



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To upgrade over 180,000 shelters, the Sector relied on the strong capacities of the refugee community. Materials and kits soon became homes.

LESSONS LEARNED

1. The Rohingya community has a strong capacity to construct their shelters. Shelter actors, aiming to improve their living conditions, have the role to deliver assistance following minimum standards and best practice. This includes the provision of materials, training and technical support to increase knowledge of DRR elements, as was the case in the USK approach.
2. Basic environmental considerations should be factored in the emergency response as early as possible.
3. Community-led approaches to shelter and settlement can foster social cohesion and enhance longer-term impact.
4. Coordination between sectors and integrated programming (at the agency level) is crucial to ensure impactful assistance.
5. Tap and connect immediately with the local or host country humanitarian and emergency response network. These resources can be used to provide immediate experience, technical staff and designs that can be adapted. In Bangladesh, the Shelter Cluster had been operational for many years, however their expertise was not leveraged during the first crucial months of the operation. Once the contacts were made, Bangladesh's experience of DRR proved invaluable and certainly saved lives.

ENDNOTES

¹ UNHCR 2018, Culture, context and mental health of Rohingya refugees, <https://bit.ly/2HDiF2M>. And ACAPS/NPM 2017, Rohingya influx since 1978.

² Joint Response Plan 2018.

³ Inter-Sector Coordination Group (ISCG), 21 Sep 2017.

⁴ Ibid.

⁵ ISCG contingency plan 2018.

⁶ See case study A.15 in this edition for an example of this phase.

⁷ Typically May/June to September/October.

⁸ First produced in late 2017, the IEC materials were revised and expanded for phase 3. <https://bit.ly/2SapiQ6>.

⁹ See case study A.14 for a discussion of early site planning approaches.

¹⁰ The catalogue is available at <https://bit.ly/2G9rRv7>.

¹¹ Humanitarian Bamboo Project: Inception Report Sept 2018. The use of Bamboo in the Rohingya camps in Cox's Bazar, <https://bit.ly/2DcMnh7>.

¹² Ibid.



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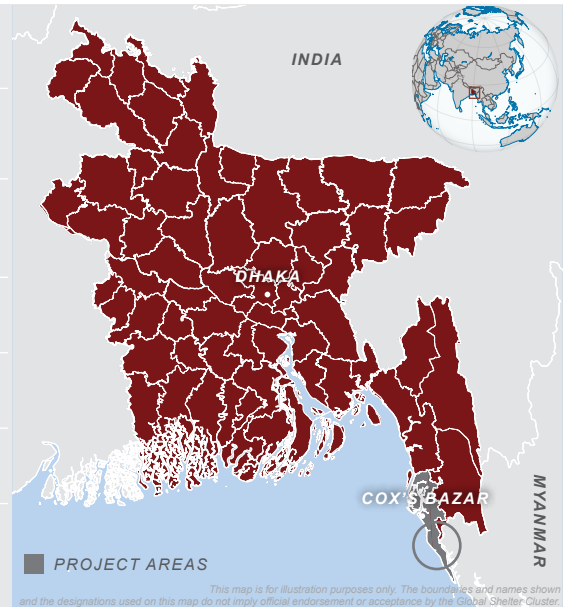
Looking forward, partners could build on the lessons learned to improve living conditions and safety in the largest refugee settlement in the world.



CASE STUDY BANGLADESH 2017–2018 / ROHINGYA CRISIS

KEYWORDS: Site planning, Coordination, Disaster Risk Reduction

CRISIS	Rohingya Refugee Crisis, Cox's Bazar, 25 August 2017–onwards
TOTAL PEOPLE AFFECTED*	260,000 households (1.3 million individuals), incl. host community
TOTAL PEOPLE DISPLACED*	134,200 households (671,000 new arrivals) 120,480 households (602,400 refugees) in KBE
PROJECT LOCATION	Kutupalong-Balukhali Expansion (KBE) Site, Cox's Bazar
PROJECT BENEFICIARIES	Over 120,000 households (600,000 individuals).
PROJECT OUTPUTS	Site planning for the KBE site
SITE DENSITIES**	10–20m² per person in fully developed areas



* Figures as of 25 Feb 2018. Joint Response Plan (JRP) for Rohingya Humanitarian Crisis.
** Typical planning figures are between 45m² and 60m² per person depending on the context. In exceptional circumstances, 35m² per person is acceptable.

PROJECT SUMMARY

In less than two months, over 400,000 refugees self-settled around existing refugee settlements in Cox's Bazar. This case study highlights the challenges site planners faced in the first six months working in this context. More refugees continued to arrive, secondary displacement increased, and agencies requested additional land to provide infrastructure and basic services. The case study chronicles the first attempts to map and understand the spontaneous settlements, identify additional land and design the first planned resettlement areas, to prepare for and mitigate the effects of the imminent monsoon season.

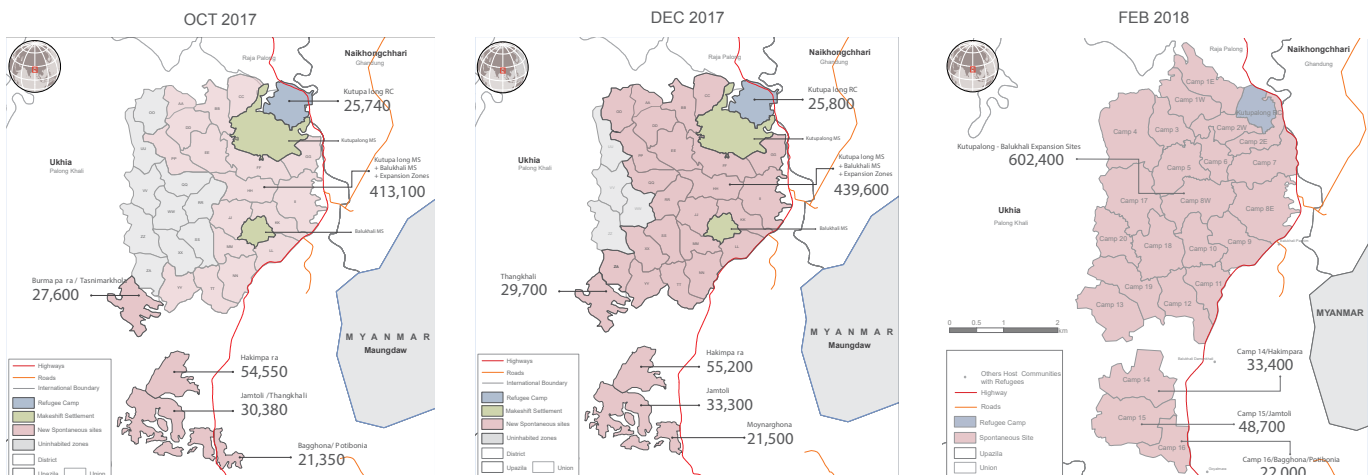


STRENGTHS

- + Early decisions were key to shaping the response.
- + Drones helped understand the site and terrain, and communicate to the government.
- + Disaster risk prevention specialists were brought in early.
- + Good inter-agency collaboration.

WEAKNESSES

- Site planners struggled to find an efficient technical forum.
- Resources were spread unequally across the entire site.
- Lack of an agreed zoning system caused confusion.
- The Macro Settlement Development Plan was not adopted.
- Refugees were not engaged in site planning early on.



After 25 August 2017, new refugee arrivals settled around existing settlements along the border with Myanmar. In six months, over 600,000 refugees were living in the Kutupalong-Balukhali Expansion site, occupying the whole expansion zone allocated by the government of Bangladesh (maps: ISCG).

BACKGROUND AND CONTEXT

For information on the 2017 influx and the Shelter-NFI response, see overview A.13.

Before the 2017 influx, no site planning, basic layout or erection of emergency shelters had started in the areas around the existing Rohingya settlements.¹

Starting in late August, in less than two months, over 400,000 refugees arrived in and around these settlements. One year later, the whole area was regarded as the largest refugee camp in the world, hosting 631,000 refugees.² The massive influx dispersed into the existing settlements and host communities along the border, with the majority heading to the largest existing refugee camp of Kutupalong and the make-shift settlement of Balukhali.

Given the scale and speed of the influx, actors on the ground focused on providing life-saving assistance for the most vulnerable and let others self-settle. As a result, when site planning teams from the lead agencies started to draw up the first plans, they were faced with an unregulated and organically growing camp. Refugees were leading the decision-making on where to settle, where to pave new footpaths and bridges, and how to provide shelter for their families.

The hilly site was prone to flooding and landslides, and this was exacerbated as the need to rapidly settle the refugees further destabilized the slopes, removed natural drainage and infiltration capacities, and increased the chances of intense flooding. This became particularly relevant with the approaching monsoon season.

This case study focuses on activities and decisions made in the first six months of the emergency. It includes the very first attempts by site planners to understand the extension of the Kutupalong-Balukhali Expansion (KBE) areas and the start of a formal process of site planning. This period can be broken down into four distinct phases, ending in February 2018 as works began to prepare the site for the monsoon.

PHASE 1 – UNDERSTANDING THE CONTEXT

In the first weeks, the rains and lack of road infrastructure made movement within the KBE site extremely difficult and time consuming. There were no maps of the expansion and no formal roads.

¹ Prior to August 2017, there were over 100,000 Rohingya refugees living in the KBE area. The existing sites were planned, to a certain extent.

² As of 31 Aug 2018. JRP Mid-term Review.

Understanding the scale of the camp was difficult, as new arrivals were pushing the boundaries further north and south at alarming speed, with the most significant expansion to the west towards the national forest reserve. A breakdown of the area to enable better inter-agency coordination prompted the creation of the first “zones”.

Combining these maps with early population figures paved the way for the first estimates of densities and, more importantly, forecast potential population capacities. The maps also revealed the urgent need to improve access. The “Army Road” was commissioned, following the western border of the first expansion zone at the time. Another key decision taken was the rapid creation of the Transit Site alongside the existing “highway” and close to the Kutupalong Registered Camp.

The focus of this phase was on settling the new arrivals and assisting the most vulnerable with their immediate needs. A lack of staff and partners called for flexibility in roles and, as a result, site planners were drawn into other duties and field assignments, such as assisting with urgent relocations. In hindsight, it would have been better if site planners had focused more on the bigger picture, without getting too involved in field operations.

The majority of settlements grow organically and are shaped by the physical environment and the locations of key infrastructural elements. So, decisions made during the first few months of the emergency have ramifications for years. It is important to be balanced when evaluating the urgency of decisions and the growth of settlements whilst understanding their long-term impact.



Prior to the establishment of the transit centre, refugees self-settled on improvised plots using whatever material they could find, as agencies did not have time to plan in advance of people settling.



ZONE OO IN OCT 2017 BEFORE THE EXPANSION

PHASE 2 – THE BASICS

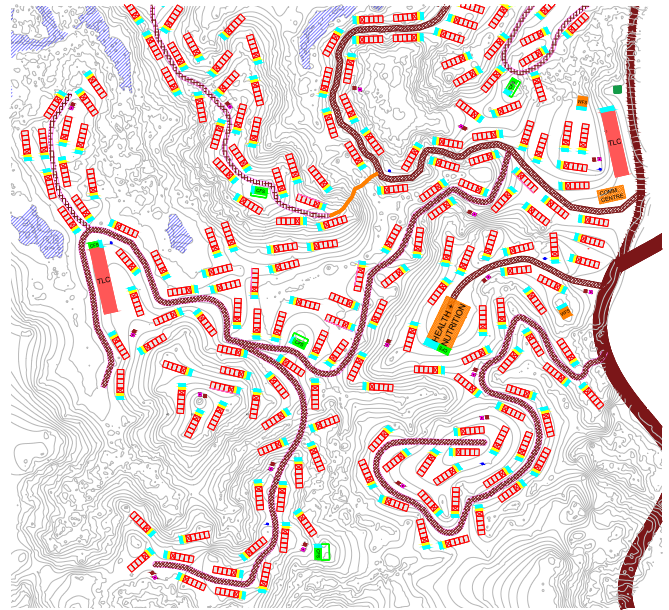
Following the production of the first maps, density calculations and an open channel of communication with the government, an additional 1,000 acres of land was released to the humanitarian community to accommodate the new arrivals and reduce population densities around the existing sites. The issuing of the new land enabled site planners to prepare in advance of refugees settling. For the first time in two months, land was surveyed and formal site plans were drawn up using international humanitarian standards and following contextualized best practice. However, it was still a race against time, as the unsustainable densities in existing settled areas were forcing refugees to spontaneously expand into the new land.

One of the very first areas in the expansion (labelled OO) was largely designed before refugees settled. Crucial land was reserved for schools, clinics and community buildings, while areas prone to landslides and flooding were demarcated as unsuitable for shelters.

As the understanding of the topography, geology and drainage patterns improved, the original zonal maps became more detailed. General consensus within the humanitarian community led to the use of the same base map, employing the notation of AA, BB, CC, etc., dividing the camp into zones ranging in size from 45 to 150 acres, each corresponding to approximately 20,000 refugees.³ This sub-division was widely adopted by the Inter Sector Coordination Group (ISCG) and partners on the ground, yet, it was crucially not adopted by the Government’s Office of the Refugee Relief and Repatriation Commission (RRRC), the Army and the refugees themselves, who were all using different zoning systems. There was a significant failure to communicate and coordinate between stakeholders, resulting in confusion and delays as key groups could not “talk the same language”.

This phase was chaotic, with new actors and funds coming in, and activities being geared up. With the needs outweighing the resources, an efficient and coordinated response was needed. However, spatial communication issues (due to lack of maps and agreed notation) rendered coordination challenging. Agencies were unable to effectively follow-up on cases and track resources, and time was lost in the field as assessments could not be compared, because the exact locations could not be specified. GPS was not commonly used by agencies and geo-referenced data reporting was not standardized. This led to duplication, such as distribution in the same areas.

³Based on average population of AA–NN in October 2017.



Site planners started to draw the first plans following minimum agreed standards in October 2017, and some of the expansion zones were prepared in advance of refugees settling (Plan: Phoebe Goodwin / UNHCR).



In the initial phase of site planning in the field, drones were used to identify prime land for communal facilities, that was demarcated by teams on the ground.



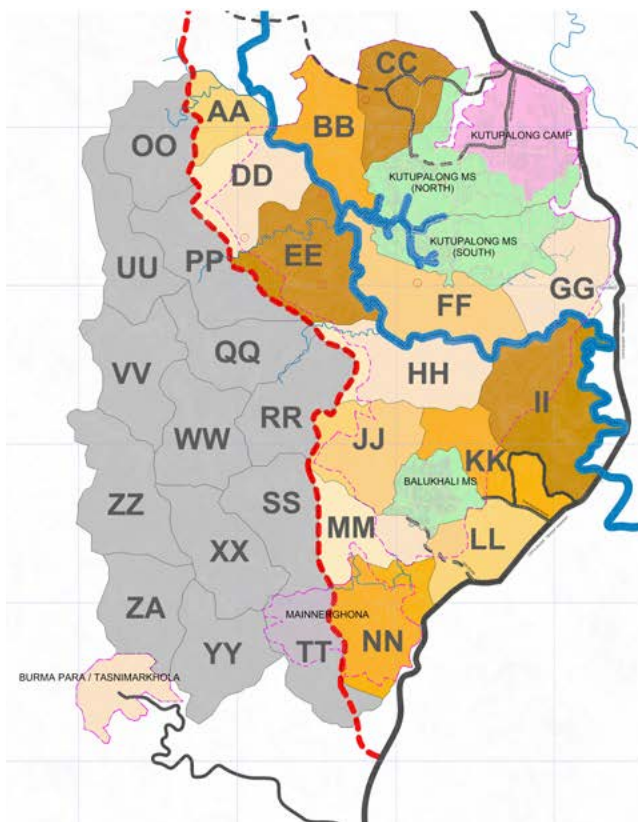
Access to the site was challenging and agencies fenced the west side of the zone to prevent uncontrolled expansion towards the natural reserve area.



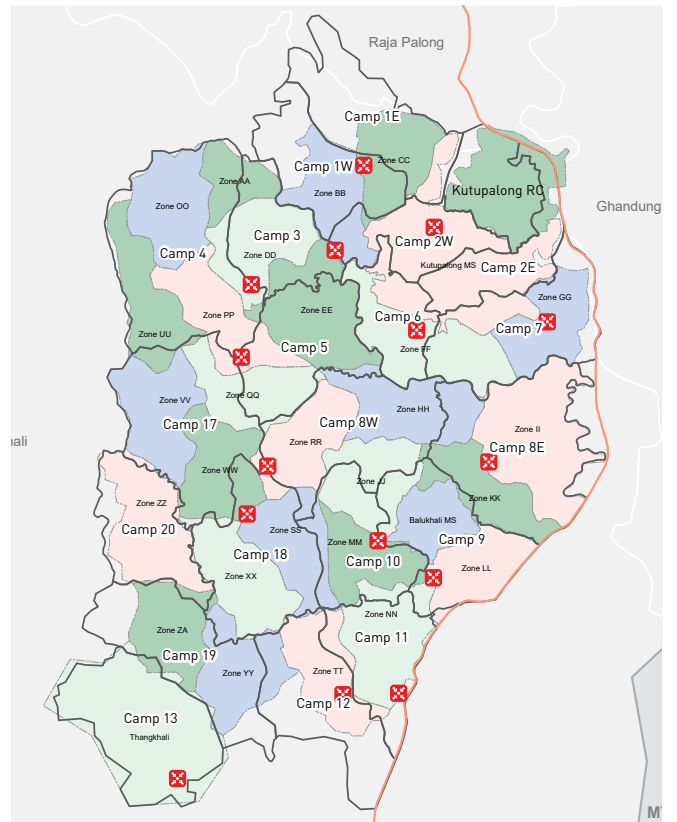
ZONE OO IN AUG 2018 AFTER THE EXPANSION



Drone image of zone OO after refugees settled, in February 2018. Densities were lower here than in other parts of the site, and services were relatively well distributed. However, this also meant that assistance was not evenly spread throughout the site, as other areas remained very dense and lacked services (Source: NPM, 14 Feb 2018).



The army road was opened along what used to be the western border of the KBE site at the time it was designed, before the further expansion in the grey zones. The humanitarian community used the notation AA–ZZ for about four months, to divide zones of comparable size (Source: ISCG, 30 Sep 2017).



The government, humanitarians and refugees were all using different zoning systems, which created confusion and caused coordination challenges. To address this, the Site Management Sector conducted a lengthy exercise to adopt a joint approach between the government’s “camp” system and the international community’s zones (Source: ISCG, 12 Feb 2018).

PHASE 3 – EXPANSION AND MSDP

The groundbreaking work undertaken in zone OO was now replicated by all parties involved in site planning, to varying degrees. The use of drones facilitated the collection and sharing of geo-referenced, visual information. Standard Operating Procedures for partners to engage with the site planners were created. For the first time, sectors took an active role in the site to ensure that there was land allocated for their ambitious and often unrealistic funding proposals. This hectic period was a “land-grab” by agencies who planted flags, marked out land and constructed facilities without due diligence or understanding the specifics of the site. Resources were concentrated on green-field areas where construction was seen as an easy win, rather than attempting to negotiate land for services in areas already settled. In a notable example from one area of the expansion zone, there was no space for shelters as all land was reserved for community buildings.

This prompted the development of a Macro Settlement Development Plan (MSDP), with the aim to compile and analyse all data into a single geo-spatially referenced “live” document that would zoom out from an isolated zonal plan perspective to a holistic macro scale across the whole site. The MSDP was intended to be a live planning and advocacy tool to allow decision makers to plan for the future, striving for an equitable distribution of and access to relevant services and infrastructure. Using a series of themes, including health, WASH, roads and bridges, infrastructure and environment, it was designed to have government ownership and to act as single repository for all the site planners to feed into.

The MSDP demonstrated that, in a matter of weeks, the whole KBE site would exceed planning densities and so additional land would be needed, especially if decongestion of the areas surrounding the original camp was to be attempted. Densities of less than 10m² per person were creating conditions comparable to the worst urban slums in Dhaka and, due to poor access to life-saving services in many areas, the Health Sector’s warnings were becoming more and more vociferous.

Although well-conceived, the MSDP largely failed to fulfil its potential due to issues of coordination and ownership. The ad-hoc and untested coordination platform was unable to grasp the need for this tool and lift it above the confusion of inter-sectoral coordination. If the MSDP had gained traction, it would have enabled improved planning for the location of key facilities and infrastructure, which have a direct impact on long-term development of the settlement.

PHASE 4 – PLANNING FOR THE MONSOON

By the end of 2017, the last of the new arrivals settled and the MSDP was updated with new themes. Planning was shifting away from the immediate allocation of land and provision of life-saving services to the medium and long-term perspectives. Exposure to the situation of the camp and a familiarity with the landscape resulted in an intergovernmental organization specialized in disaster preparedness being commissioned to undertake a landslide risk analysis of the main KBE site. Flood risk analysis was conducted by the lead agencies working on site planning.

It immediately became apparent that the monsoon rains starting in May/June, coupled with the annual cyclone seasons, could trigger a second wave of displacement, with resulting landslides and flooding potentially causing significant damage and loss of life. As the initial results of the analysis were released, coordinated actions were taken to mitigate against the natural hazards.

The unique nature of the context has underlined the importance of site planning for the long-term safety of the refugees. It has highlighted the need to strengthen the role of site planners and elevate their voices within the coordination platform, as informed and early decisions will improve coordination and, in the long run, significantly improve the lives of those affected by displacement.



Without an agreed site plan or camp management structure in place, new arrivals started to level ground for shelter and self-settle.



The additional 1,000 acres were quickly occupied in the span of a few months. Given the scale of the site, a macro-settlement approach was needed to identify the strategic location of facilities and plan for the future growth, infrastructure and likely scenarios.

STRENGTHS, WEAKNESSES AND LESSONS LEARNED

WEAKNESSES

- Partly due to the confusion created by the unorthodox co-ordination structure used in the Rohingya response, partly due to the unfavourable location and terrain, **site planning teams struggled to find an efficient technical forum** and “be heard” by the Inter Sector Coordination Group. Various bolt-on technical working groups were formed to try and bring those involved in site planning together. **These working groups often lacked focus and output due to unclear terms of reference**, as there was no precedent.

- Although one zone was planned in advance and more focus put on ensuring minimum standards there, this meant that **resources were spread unequally across the entire site**.

- **A lack of agreed naming and zoning system resulted in confusion**, wasted resources and delayed further key processes, such as a unified address system.

- **The Macro Settlement Development Plan largely failed**, as it was not adopted by the inter-sectoral coordination body.

- **Refugees were not engaged in site planning decisions early on**. This was partly due to the localized site management structure lagging behind the growth of the settlement, and the government camp officers being involved only in 2018.

STRENGTHS

+ **Early decisions were key to shaping the response**, such as the building of the “Army Road” bisecting the camp and the development of the transit centre on private land.

+ **The use of drones proved vital** to not only understand the scale of the sites and the terrain, but also to communicate to the government and international community the need for intervention.

+ Recognizing that – with the coming of the monsoon season – the refugee crisis could morph into a physical disaster, **specialists in disaster risk prevention were brought in early** to advise and contribute to the planning.

+ **The lead site planning and site development agencies worked jointly** to formulate contextualized standards, develop the macro settlement development plan and conduct hazard mapping within the site.



Major infrastructure (such as the Army road and culverts) was needed to convert a forest land into a liveable settlement.

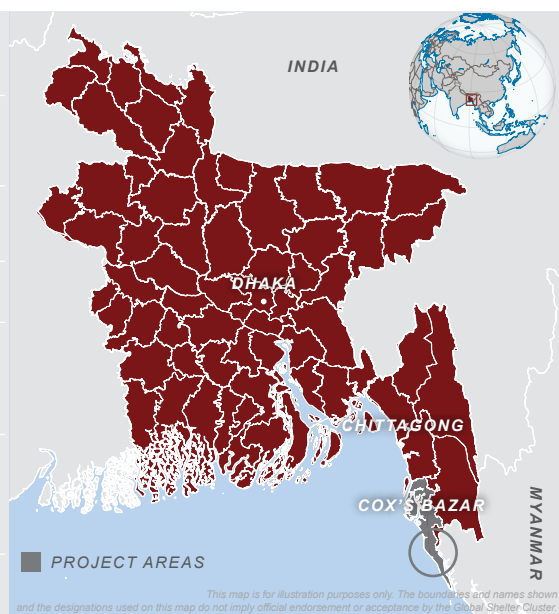
LESSONS LEARNED

- **Demarcation and sub-zones need to be agreed and finalized by all parties as soon as possible.** This process should start immediately, with authorities (military, line ministries, etc.) taking leadership and ownership of the decisions, then trickling down through the humanitarian structure. There is a need to quickly understand the communities’ pre-existing structures, as adoption will be quicker if actions are aligned to such social systems. There is often no time or perceived need for wider consultation. A single body of site planners should be given authority and trust, with a clear timeline for finalization. Delays will cause significant interruptions in service delivery. There must be a wider roll-out to communities and actual physical demarcations on the ground, so that refugees can orient and base themselves within appropriate spatial parameters, leading to location addresses.
- **Macro settlement development planning must start immediately.** A unit within the site planning department should start looking at the macro scale of settlement development from the outset. It is important to identify where and how refugee settlements can integrate with host communities and share/enhance existing infrastructure and services. This responsibility must be clearly entrusted to a lead agency who has the skill-set, unless the host government has shown willingness and capacity to take on such a task. The role of the government is crucial, especially when requiring additional land. But the planning will lose relevance unless it keeps pace with the speed of the emergency and humanitarian agencies’ demands for land (e.g. hospital, logistic hubs, etc.).
- **Site planners must plan for a variety of possible scenarios, to understand what the site will “look like” 3, 6, 12, 24, 48 months into the future.** Site planners have a role to help interpret the topography, geomorphology, geography, natural hazards and the subtle interplay between the physical site and its socioeconomic development. They can also foresee the spatial impacts of population growth within refugee settlements. Key site planning interventions conducted early could allow for positive expansion and diversification of livelihood opportunities for refugees, increasing their independence and self-dignity. Site planners should have the authority to raise such issues to senior management, so they can be heard with equal value to other sectoral or organizational priorities.
- **Bold decisions must be taken early and with “no-regrets” philosophy.** Decisions related to densities or to where key services are provided will have long-term ramifications and impacts, affecting the residents for years to come. When relocations are part of a well formulated site plan that allows for longevity and natural growth, short-term disadvantages are largely rewarded with the significant improvement of refugees’ living conditions. The longer people reside in an unsafe or inappropriate location, the more resistant they are to secondary displacement.

CASE STUDY BANGLADESH 2017–2018 / ROHINGYA CRISIS

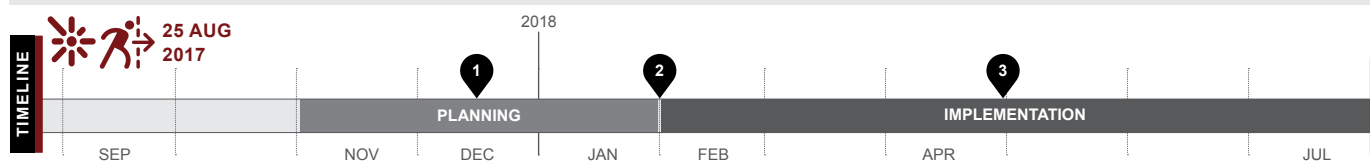
KEYWORDS: Shelter upgrades, Training, Coordination, Scale and coverage, Common pipeline

CRISIS	Rohingya Refugee Crisis, Cox’s Bazar, 25 August 2017–onwards
TOTAL PEOPLE AFFECTED*	260,000 households (1.3 million individuals), including host community
TOTAL PEOPLE DISPLACED*	134,200 households (671,000 new arrivals)
SHELTER NEEDS*	180,000 households (900,000 individuals)
PROJECT LOCATIONS	Kutupalong-Balukhali Expansion site in Ukchia sub-district; Unchirang, Shamlapur, Leda and Alikhali sites in Teknaf sub-district – Cox’s Bazar district
BENEFICIARIES	43,789 households (208,237 individuals). These included 3,777 female-headed HH, 370 youth-headed HH and 291 HH with persons with disabilities
PROJECT OUTPUTS	43,789 households received Upgrade Shelter Kits (USKs), were trained and upgraded their shelters and surrounding site conditions 52,987 additional USKs procured and distributed by Sector partners through the common pipeline 304 staff trained with Shelter-DRR Training of Trainers 106 Rohingya carpenters trained on carpentry
SHELTER SIZE**	14m² on average. This programme aimed to reinforce/upgrade existing shelters, not build a new shelter
SHELTER DENSITY**	3.4m² per person on average
MATERIALS COST	USD 155 per household (incl. USD 103 for materials, USD 12 for tools, USD 40 for support costs)
PROJECT COST	USD 208 per household



PROJECT SUMMARY

This project provided shelter upgrade kits, training and technical assistance to help recently arrived refugees in Cox’s Bazar reduce their shelter vulnerability to potential heavy rains and winds. It was part of the second phase of the shelter response, following the emergency distributions after the massive influx in 2017. To meet the scale of needs, resources were carefully allocated to provide shelter materials, tools and technical assistance, and mobilize the community for shelter upgrade and localized site improvements. The organization also provided coordination services and established a common pipeline, which contributed to reaching the Sector target of 180,000 households before the monsoon season.



- 1 Dec 2017: Emergency phase distributions completed.
- 2 29 Jan–4 Feb 2018: First ToT and distribution of USK conducted.
- 3 30 Apr 2018: First incident due to monsoon weather reported (327 existing shelters damaged).

* Figures as of 25 Feb 2018. 2018 Joint Response Plan (JRP) for Rohingya Humanitarian Crisis, <https://bit.ly/2pKNJmb>.
 ** Shelter/NFI Sector Cox’s Bazar, Shelter Survey, August 2018, available at <https://bit.ly/2BBWXrh>.

STRENGTHS

- + Coordinated approach allowed to reach Sector targets.
- + People-driven shelter upgrading at scale.
- + The project fostered a sense of ownership over the shelters.
- + Effective resource allocation in the short timeframe.

WEAKNESSES

- Insufficient quantities of materials in the kit.
- Limited durability of untreated bamboo.
- Bracing was not favoured by beneficiaries.
- Local languages should have been used more in trainings and IEC.



CONTEXT

For information on the 2017 influx and the Shelter-NFI response, see overview A.13.

The Cox's Bazar district is affected by numerous hazards on an annual basis, such as tidal surge, landslides, flash flooding and cyclones. Heavy rain can commence in April and last through October. Cyclones make landfall in Bangladesh almost every year. There are two cyclone seasons; May–August and October–November.

SITUATION BEFORE THE CRISIS

For decades before 2017, multiple movements of Rohingya from Myanmar to Cox's Bazar occurred. Upon times of influx, ad hoc emergency shelters were built, typically with bamboo and plastic sheeting, leading to commonly reported issues of leaking roofs, lack of privacy and overcrowding.¹

SITUATION AFTER THE 2017 INFLUX

By the end of December 2017, the Shelter-NFI Sector had carried out comprehensive distributions of acute emergency shelter kits (primarily tarpaulins and rope) and non-food items. The refugees had constructed their own shelters with these items and other materials either gathered or procured on the local market. Continuous new arrivals settled in spontaneous sites over a hilly terrain prone to flood and landslides, increasing the need for humanitarian assistance. Additionally, with the rainy season fast approaching, there was a sense of urgency to continue strengthening preparedness measures and raising awareness among the refugee population regarding potential storms, landslide and flood risks.

As the quality of most emergency shelters after the first phase of the response was very basic, the Sector moved to a second phase focusing on shelter upgrades and localized site improvements, in preparation for the upcoming monsoon and cyclone seasons.

¹ACAPS/NPM 2017, Review: Rohingya influx since 1978, <https://bit.ly/2NgsGmH>.

COORDINATION AND COMMON PIPELINE

The implementing organization led the Shelter-NFI Sector with dedicated staff and support from a national NGO. Project staff contributed to joint efforts led by the Sector coordination team and participated in inter-agency assessments to better understand the needs of the new arrivals in terms of shelter and site improvements; and what had already been done by refugees who arrived in 2016 and earlier.

Based on field observation and best practice identified in the sites, the organization also supported the Sector's technical working groups in developing the Upgrade Shelter Kit (USK), providing complementary Information, Education and Communication (IEC) materials, and technical guidance for localized site improvements. Disaster Risk Reduction (DRR) messages were also developed within these materials and the subsequent trainings, which were rolled out by a dedicated training officer who provided support to all Sector partners.

One of the most impactful processes led by the organization in support of the Sector was the establishment of a common pipeline for the USK materials and for some selected NFIs. This was a central repository of Shelter-NFI supplies managed by the organization to procure, store and distribute materials for 96,776 kits to 18 Sector partners, with the coordination team providing oversight.

Project staff also provided assistance and human resources with two key market surveys looking at the impact of the crises on the local bamboo market and how cash could be used in shelter and NFI interventions.²

PROJECT GOALS

In the short time leading up to the monsoon season, the organization focused its efforts on training on shelter-DRR and the distribution of USKs, aimed at lessening the shelter vulnerability to potential strong rains and winds, as well as informing the refugees about the risks of other natural hazards.

²The report is available at <https://bit.ly/2DSohlC>.



The project assisted over 43,000 households directly and managed a common pipeline to reach an additional 53,000 with shelter upgrade kits before the monsoon season.

TARGETING

As the entire refugee population – and primarily the new influx – had high shelter-related vulnerabilities, the Shelter-NFI Sector decided to do blanket distribution to all the 900,000 individuals or 180,000 households in need prior to the monsoon season. The procurement and distribution of 180,000 USKs were assigned across Sector partners, with the lead agencies and other large international organizations taking on the bulk of the work. The organization was responsible to cover at least 40,000 households in eight sites and to procure additional 60,000 kits for the common pipeline, to be accessed by Sector partners. A few other organizations used their own resources to cover the remaining caseload.

IMPLEMENTATION AND TRAINING APPROACH

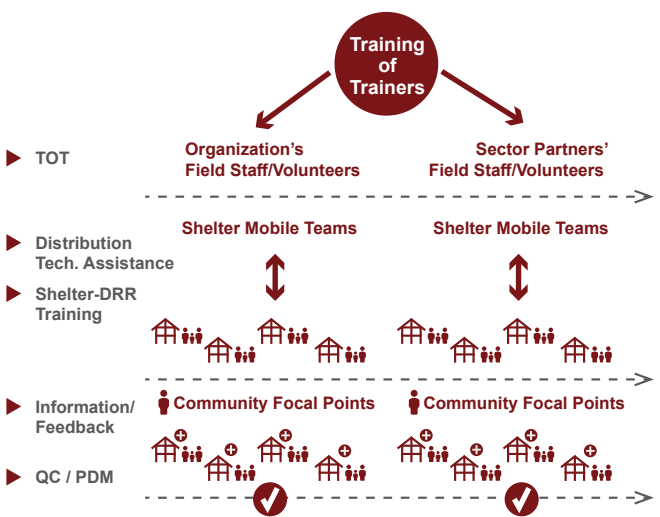
To implement the project at scale in the limited timeframe, the organization established a team of 8 international staff, 12 national staff and 160 field assistants. In order to ensure an effective knowledge transfer and implementation of upgrades at the household level, the trainings were conducted using a cascade approach.

A series of Trainings of Trainers (ToTs) was conducted for shelter field staff and community mobilizers (from both the organization and partners) on shelter-DRR knowledge and facilitation skills. ToTs covered key messages on strengthening roofs, walls, foundations and drainage around the shelter via demonstrations and practical examples, to enable participants to learn by doing.

Trained trainers and community mobilizers carried out hands-on awareness sessions to show beneficiaries how to use the items in the kits and how to apply simple DRR measures to conduct shelter upgrades and localized site improvements. These sessions were followed by the distributions on the same day.

Over 100 Rohingya carpenters were identified and trained on shelter-DRR key messages and were then mobilized across the refugee communities. Their role was essential in the awareness sessions and in showing technical interventions to households during the upgrades.

The organization also identified community representatives who acted as information sources and communication focal points between the refugees and the organization, so that updated information, feedback and continuous technical advice could be provided.



A cascade training approach was used to reach the ambitious targets in the short timeline, coupled with continuous technical assistance.

For vulnerable individuals, the organization provided support for transportation, site preparation and shelter set-up through cash for work.

TIME CONSTRAINTS

To upgrade 40,000 existing shelters before the monsoon season commenced in less than four months, the key components of this project – namely community mobilization and household trainings – were planned balancing the need for quality and the time constraints. Training participants were limited to maximum 25 households per session, with a duration of two hours per session. By conducting several ToTs, multiple training teams were deployed and delivered trainings in each site simultaneously.

PROCUREMENT AND LOGISTICS

Given the scale and urgency of the response, the procurement and logistics for the kits, maintaining the common pipeline and ensuring quality control were extremely challenging.

Shelter-grade tarpaulins were procured via various sources, including the organization's regional stockpile, international procurement and in-kind donations. Emergency procurement procedures were used to shorten lead times and additional logistics staff were brought in to support the process.

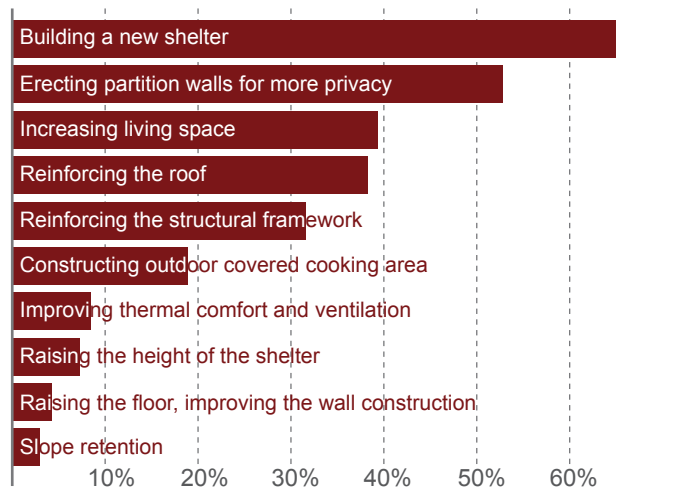
Bamboo procurement was particularly challenging. A specialist was deployed to address bamboo supply chain issues and travelled to assess several suppliers with confirmed stocks.

Two large logistics hubs were set up close to the refugee settlements. From these, trucks were arranged to deliver the kits to main distribution points within the sites.



The procurement and logistics for the bamboo required for 100,000 kits needed a large dedicated team and the application of expedited procedures. Because of time constraints, bamboo was untreated and often harvested hurriedly.

USE OF THE ITEMS IN THE KIT



This chart shows how USK items were utilized according to the respondents of the shelter survey, who were asked what their top three uses of the kits were.

IMPACT OF TRAINING AND TECHNICAL ASSISTANCE

Post-distribution monitoring indicated that over 99 per cent of the shelters had some sort of improvement after receiving the materials and training. Yet this finding is not surprising given the poor shelter conditions prior to the distributions and the total lack of shelter materials in the settlements. Further, the Sector shelter survey showed that training and technical assistance were well received by refugees, with 99 per cent of those who received it considering it useful or very useful. 97 per cent of the surveyed households also stated that they would like to receive either more training or more technical assistance. During focus group discussions, respondents identified three main learning elements from the training: tie down of the roof, anchoring and improvement of foundations, and making strong connections. On the other hand, bracing was considered less relevant.³

³ Shelter survey, August 2018.



By involving refugees throughout the implementation, the project helped generating a sense of ownership over the shelters and their surrounding environment.

WIDER IMPACTS

The coordinated response with Sector partners enabled to achieve full coverage at scale. By setting up the common pipeline, developing IEC materials and offering ToTs in coordination with the Shelter-NFI Sector, this project contributed to achieving shelter upgrades for over 180,000 households as a joint Sector-wide effort.

The communication, mobilization and training components of this project promoted a sense of ownership towards refugees' own shelters and the surrounding environment, facilitating further maintenance and upgrade works even after project completion. DRR and technical skills learnt in the training were also used in other interventions, such as the improvement of mosques and community buildings.



Although the training and technical assistance were well received, many refugees thought the materials in the kits were not enough and generally did not consider bracing as relevant.



To reach over 43,000 households in about four months, resources were well allocated with a combination of in-kind and technical assistance. Hands-on sessions with maximum 25 participants were conducted for refugees on the day of the distribution. The training was generally welcome and allowed over 99 per cent of beneficiaries to make improvements to their shelters.

STRENGTHS, WEAKNESSES AND LESSONS LEARNED

WEAKNESSES

- **Insufficient quantities of materials.** Under the guidance of the Sector's technical working group, the kit composition was optimized for upgrading existing shelters and not for building a whole new shelter. Quantities of materials were agreed considering the resource limitations among Sector partners and realistic procurement lead times. However, there were complaints from beneficiaries and Sector partners that the USK contents were not enough.

- **Limited durability of untreated bamboo.** Bamboo can be a durable construction material if selected and treated properly. Due to the time pressure, various types of bamboo were procured, often harvested too early and untreated. Further, bamboo posts were inserted directly into the ground, exposing the bamboo to mold and termite attacks. It was recognized that the assistance provided under this project would not be a durable option, requiring a further phase of shelter assistance.

- **Bracing was not favoured by beneficiaries.** Thanks to the training and technical assistance, most of the key messages on shelter-DRR techniques were implemented by the refugees, except for bracing. This was mainly due to cultural preference and the limited number of available bamboos, as well as the limited covered space (as bracing reduces internal space if bamboos are installed inside the shelter frame).

- **Language in trainings and information materials.** The ToTs were conducted in a mix of English and Bangla. For a better understanding of the contents, Bangla should have been used in most of the ToT curriculum. Additionally, IEC materials should have been produced with two languages together – Rohingya language for refugees and Bangla for staff.

CONTENTS OF THE UPGRADE SHELTER KIT

Items	Qty	Unit cost (BDT)	Unit cost (USD)	Total cost (USD)
Shelter Materials				
Tarpaulin (4x6m)	2	2,014	24.00	48.00
Bamboo (large)	4	300	3.58	14.30
Bamboo (small)	60	40	0.48	28.61
Sand bag (polyprop.)	30	20	0.24	7.15
Tie wire	1	40	0.48	0.48
Rope (thick), 25m	1	120	1.43	1.43
Rope (thin), 30m	1	72	0.85	0.85
Nails, 3', 0.25kg	1	45	0.54	0.54

STRENGTHS

+ **Coordinated approach.** The project was well coordinated under the Shelter-NFI Sector, which as a whole was able to deliver standardized assistance to over 180,000 households within the planned timeframe.

+ **People-driven shelter upgrading at scale.** The project primarily aimed at facilitating learning and knowledge exchange towards refugee populations to enable shelter upgrade for a very large population. Through a people-centred approach, the three main components of the project (training, community mobilization and distribution) were interwoven, complementing each other.

+ Thanks to the high involvement of the refugees, **the project fostered a sense of ownership over the shelters.**

+ **Effective resource allocation.** In light of the short project timeline and the scale of needs to be covered before the monsoon season, available resources were well allocated. Materials in the USK were maximized in terms of viable procurement lead time, and as many field staff as possible were hired and trained to achieve the targets of training and community mobilization.

Items	Qty	Unit cost (BDT)	Unit cost (USD)	Total cost (USD)
Household Toolkit (1 kit for 5 HH)				
Claw hammer	2	150	1.79	3.58
Hand saw	2	120	1.43	2.86
Pliers	2	180	2.15	4.29
Machete	2	220	2.62	5.24
Shovel	2	200	2.38	4.77
Hoe	2	300	3.58	7.15
Digging post	2	340	4.05	8.10
Bamboo Basket	5	120	1.43	7.15
Neighbourhood Toolkit (1 kit for 100 HH)				
Wheelbarrow	2	2,850	33.97	67.94
Sand bag (polyprop.)	500	20	0.24	119.19
Shovel	5	200	2.38	11.92
Hoe	5	300	3.58	17.88
Digging post	5	340	4.05	20.26
Bamboo basket	10	120	1.43	14.30
Steel pan	10	250	2.98	29.80

LESSONS LEARNED

- **Balancing resources.** Resource allocation was of paramount importance in project design (i.e. cost per household, duration of training, human resources). As Sector lead agency, it is crucial to **reach consensus on the resource allocation strategy in coordination fora** (such as technical working groups and strategic advisory group), in order to lead a Sector-wide joint response. Discussing implementation challenges – such as logistics and procurement – within the Sector benefits the development of a realistic and effective strategy.
- **Utilizing skills and expertise of affected people.** Communities were found to have not only unskilled workers, but also skilled individuals in carpentry and other techniques. Although this project took a people-driven approach (complemented with technical assistance), **Rohingya carpenters could have been more involved** even in the planning process, i.e. the development of the IEC materials and the training curriculum.