

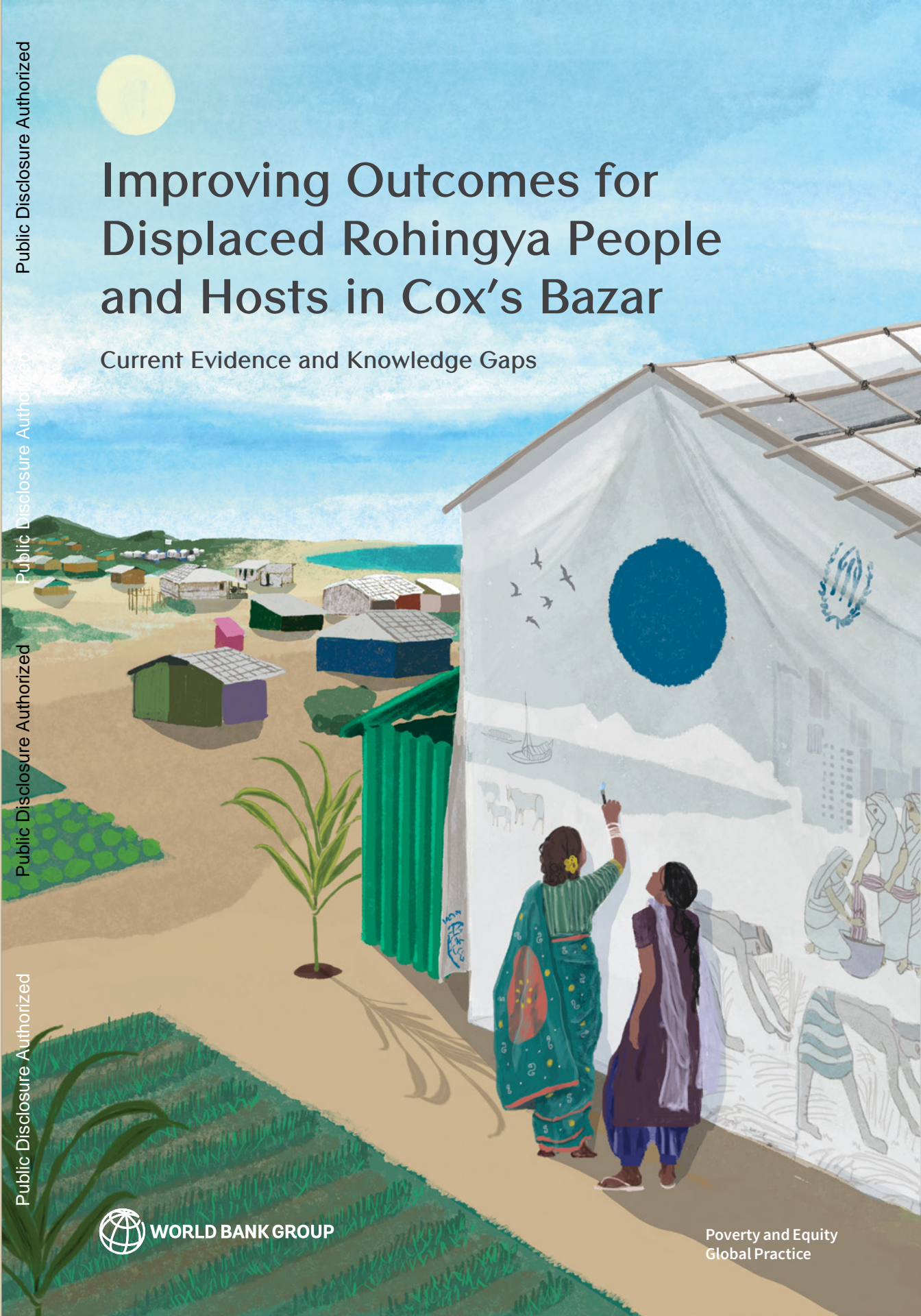
Improving Outcomes for Displaced Rohingya People and Hosts in Cox's Bazar

Current Evidence and Knowledge Gaps



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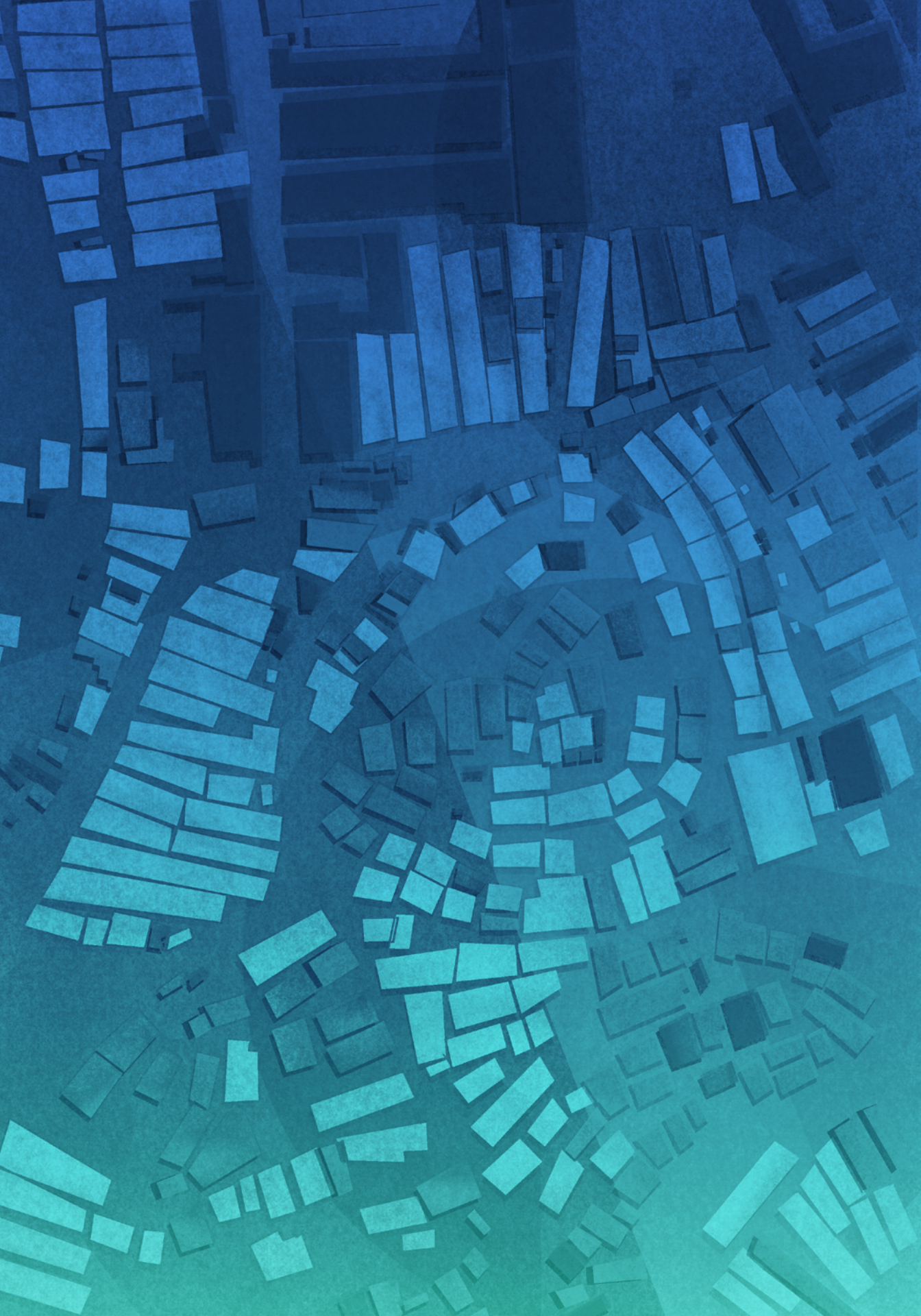
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Executive Summary

Background and Objective

Since August 2017, more than 725,000 Displaced Rohingya People (DRP) have crossed into Bangladesh from Rakhine State in Myanmar. The influx has resulted in a protracted humanitarian crisis, as hundreds of thousands of DRP have settled into largely makeshift camps in the Cox's Bazar (CXB) district. The DRP remain almost entirely reliant on humanitarian assistance for food, shelter, education, and healthcare. Bangladeshi host communities (HC) in the affected areas faced difficult economic conditions before 2017, and the arrival of Rohingya may have exacerbated some of these challenges.

Currently, as the crisis in CXB extends due to uncertain plans for Rohingya repatriation, a review of available evidence is needed to inform the ongoing humanitarian response and guide subsequent analytical research on inclusive development outcomes for both DRP and host communities. In addition to implementing humanitarian programs in the Rohingya response, several organizations, including the World Bank, are generating knowledge products to improve the results of humanitarian action in CXB and advance longer-term development goals. The literature generated thus far is heterogeneous in approach, methods, and quality. To date, no study exists that synthesizes the findings from these studies to provide an overview for policy makers and researchers.

This paper aims to identify knowledge gaps through a rapid evidence assessment of literature on the CXB region, the DRPs, and the HC. By mapping the current evidence and knowledge gaps around improving outcomes for the DRP and HC, this paper intends to provide national stakeholders, development agencies, and their partners with a holistic picture of the analytical work taking place on the ground and to indicate further research that may be needed during the ongoing humanitarian and development response.

Methodology

Given the complexity of the topic and the thematic and methodological diversity of studies to date, this review uses a combination of methods to assess the evidence base. It combines features of a quick scoping review and a rapid evidence assessment. The study explores currently available literature on multiple facets of the humanitarian response in CXB. Since it is addressing an ongoing, complex, and multidimensional crisis, the review has reached beyond academic journals and electronic databases to include analytical works that are not yet published in these outlets. All documents considered for inclusion in this review were assessed based on a checklist that assigned scores for research questions, methodological rigor, sampling, data collection, analysis, and results.

A total of 89 studies were included in the final analysis. These were grouped under nine themes and eight sub-themes. Themes were not pre-defined but emerged empirically from the content of the included studies. For example, articles examining topics in health—including infectious diseases, water and sanitation, nutrition, and others—were grouped together, while documents primarily discussing economic welfare outcomes were considered as a separate group. Grouping the articles under the most dominant or frequently occurring topics allowed for analysis of evidence gaps. This report discusses both the main findings from included studies and key gaps detected in the existing literature.

Table 1: Inclusion and Exclusion Criteria for Candidate Studies

Inclusion	Exclusion
<ul style="list-style-type: none">• Studies focused on the DRP and/or HC in Cox’s Bazar• Studies relying on some formal methodology, including quantitative, qualitative, or mixed-methods techniques• Studies including analysis of micro, macro, or qualitative data using recognized scientific principles	<ul style="list-style-type: none">• Studies reaching conclusions based on perceptions (e.g., opinion pieces)• Studies that do not include a discussion of research methods employed• Studies focused on DRP beyond the geographic boundaries of Bangladesh• Studies written in a language other than English or Bangla

Key findings

Gaps in evidence

Gaps in the literature were identified across several strands and themes. While many studies focused on the DRP, evidence representing host communities was found to be scant across the board. The review identified several areas that need further attention from researchers to clarify conditions and inform action on the ground. These topics include COVID-19 prevention, malnutrition, mental health, protection from physical and sexual violence, and the provision of basic services such as water, sanitation, and hygiene (WASH). The need for stronger evidence surrounding economic welfare and outcomes was also identified. Further analysis of such evidence gaps will allow critical, empirically informed perspectives to steer national policy towards the region, while encouraging the production of evidence relevant to the CXB development agenda.

The remainder of this summary is structured according to the themes used to group and analyze studies. The discussion under each theme first highlights the main positive findings, then briefly characterizes theme-specific evidence gaps.

Health

Infectious diseases: The likelihood of contracting infectious diseases increases exponentially in congested camp settings. The available studies show high incidence of measles, diphtheria, diarrhea, and acute respiratory infections in the DRP camps. However, there is little evidence on the prevalence of these diseases in the host community. The government has rolled out mass vaccination efforts in the camps. While this program appears to have been partially effective, it was unable to completely stem the spread of infections. In addition, while COVID-19 has had lower mortality rates in South Asia than in Europe and the Americas, rapid analyses and simulation studies from early in the pandemic suggested that the novel coronavirus had the potential to overwhelm health systems in Cox's Bazar. Further examination is required of how preventative efforts were carried out to curtail infections, given the high risks associated with humanitarian contexts.

While the review found stronger evidence on infectious diseases than on any other topic related to the CXB crisis response, knowledge gaps on threats of contagion persist. This is particularly relevant when it comes to the deeper examination of spill-over effects on host community members, with regard both to infection rates and behavioral change uptake in response to public-health programs and campaigns. There are also gaps in assessing whether culturally conditioned behavioral patterns among the DRP may be complicating the uptake of health services like immunization in the camps. Available assessments also fail to examine the risk factors surrounding certain diseases and health conditions in ways that could inform prevention strategies for both populations. More evidence is required to

understand how the presence of humanitarian aid in the region guided strategies to slow down infectious diseases in the camps and surrounding areas.

Water, sanitation and hygiene (WASH): Evidence on WASH in the host community shows that the majority of households are using unimproved sanitation and shared water sources. Host households living closer to DRP camps are more likely to access poorer facilities. Among the HC, a greater share of households living in close proximity to camps report using shared water sources. Inside the camps, high population density places significant pressure on WASH facilities. Seasonal factors exacerbate these strains. For instance, dry seasons limit water availability, while monsoon compromises the groundwater through salinity. The state of accessible latrines and hygiene in and outside the camps is reported as critical. Lack of effective sanitation measures gives rise to household contamination with *E. coli* and outbreaks of waterborne diseases such as diarrhea. Rohingya girls and women particularly report challenging circumstances regarding distance, wait times, and safety when accessing water points, latrines, or designated bathing areas and when using latrines at night.

While there is some evidence on the efficacy of WASH interventions, evaluations to date have been limited in number and scope. Gaps remain in assessing whether a capital-intensive WASH strategy (e.g., installing new facilities) versus strategies that are information and labor intensive and require a large and sustained workforce to implement (e.g., health education and promotion), will lead to better development outcomes for DRP and hosts. Inconsistencies mark the data on how WASH assets and activities impact overall health and nutrition outcomes in both populations. Further studies are required on the provision of menstrual hygiene services for DRP women. Available evidence does not yield a consistent picture of the preventative methods (e.g., handwashing) being used to mitigate COVID-19 risks and impacts in DRP camps and surrounding communities; firm conclusions and recommendations cannot be made. There is also a general lack of information related to waste management in and around the camps. This has the potential to play a critical role in controlling spread of infectious diseases and deter further environmental impact.

Nutrition and food security: Cox's Bazar shows a high prevalence of acute and chronic child malnutrition, compared to the Chittagong region and Bangladesh as a whole. Humanitarian agencies have scaled up efforts to combat malnutrition in DRP camps, but results are mixed, mostly due to operational bottlenecks and cultural practices that appear to impede progress. Although consumption patterns of Rohingya households were found to be similar to hosts', Rohingyas' food consumption remains largely supplied through humanitarian aid. Currently, food rations and vouchers are used to distribute food aid in the camps. Food consumed by the DRP consists mainly of cereals, vegetables, fish, spices, and sweets. Some reports mention DRP purchasing other foodstuffs using stipends from cash-for-work programs, bartering, or sometimes selling items received through humanitarian aid. Voucher programs for DRP have been shown to be successful, promoting dietary diversification among beneficiary households.

While some studies indicated that DRP routinely barter using food aid, more research is needed to understand the motivations for barter as food assistance has transitioned to a voucher modality. Evidence is also scant on the efficacy of communication programs designed to improve nutrition and feeding practices among adults and children. As women are largely reliant on permission from their husbands for decisions that affect household nutrition and health, a better understanding of men's perspective on these issues is needed to improve outcomes of interest.

***Sexual and reproductive health (SRH):* SRH-specific knowledge and access to related services are low among both DRP and HC.** According to UN agencies, prior to their arrival in Bangladesh, a large proportion of Rohingya women and girls were subjected to sexual violence, leaving thousands pregnant. Multiple constraints continue to limit women's access to reproductive health services in the camps. This includes a lack of obstetric services. Rohingya women in camps often prefer to deliver children at home rather than in facilities, adding an additional layer of complexity to SRH access. Given the high prevalence of child marriage and low use of contraceptives, birth rates are generally high among the DRP. Currently, only large-scale national surveys like the Demographic and Health Survey (DHS) and Multiple Indicator Cluster Survey (MICS) provide some data on HC reproductive and maternal health. However, these surveys are unable to provide an in-depth analysis of SRH perceptions and behavior in this population.

Evidence on SRH needs and preferences in both communities is limited. In general, cultural norms among DRP and HC make discussing sex and sexuality difficult. There are inconsistencies in the data regarding the number of Rohingya women and girls who have faced sexual violence, as well as the prevalence of sexually transmitted infections among the DRP living in camps. Some studies discuss cultural and religious barriers to reproductive health (e.g., rejection of contraception and high rates of adolescent pregnancy in both populations). However, there is a lack of evidence and analysis on how to overcome the challenges of effective SRH service delivery.

***Mental health:* To date, studies on mental health and psychosocial factors are limited for DRP and non-existent for the host population.** According to UN agencies, harsh camp living conditions—combined for many with the lingering effects of personal and collective trauma—compound mental stress and anxiety among Rohingya. Reported levels of mental distress among DRP are high, and only limited programming is available to address community mental health needs. Encouragingly, among DRP who were able to access mental health services, beneficial effects have been documented. However, there is limited analytical work focusing on mental health and psychosocial factors among the Rohingya and even less for the host population dealing with the influx. Studies that document intervention outcomes among people with poor baseline mental health are notably lacking. Nor have any broad-based, population-representative studies yet analyzed delivery bottlenecks in mental-health services for DRP, particularly Rohingya women and children who have suffered sexual violence.

Disability inclusion

Available evidence on disability inclusion and access to relevant services is entirely focused on DRP, neglecting hosts. In the DRP camps, reports note limited availability of disability-friendly essential services such as WASH. In terms of healthcare and provision for assistive medical devices, most DRP surveyed were unaware of these services. People with disabilities are almost entirely reliant on their family members to acquire food and non-food items and for support with basic needs, such as going to the toilet or bathing. The relative absence of evidence on this theme also underscores the need to document livelihood development, mental health, and related topics among persons with disability in DRP camps. There is also a lack of data examining the intersectionality of gender and disability to ensure inclusive programming, particularly with regard to dignified access to key facilities. Generally, data are lacking on disability among the host community. This also concerns data disaggregated by age groups, particularly in the case of children with disabilities and special needs (e.g., learning disabilities).

Gender-based needs

Gender-based violence (GBV): Though GBV is a source of major concern among both DRP and the HC, more evidence is needed to inform policy makers. Rates of early child marriage, considered a form of GBV, are high both in the DRP camps and among the HC. The UN and human rights organizations report that many Rohingya women and girls survived sexual and physical violence prior to arriving in Bangladesh. However, given the reluctance to share such experiences, the actual numbers of victims is unknown, and the few available sources offer inconsistent estimates. Evidence shows that the services needed to address GBV, such as clinical management of rape and case management in the camps, are inadequate. However, more data is required to draw accurate conclusions about the level of GBV that may be taking place and the adequacy of justice mechanisms to address such issues among the HC and DRP.

Women's leadership: Gendered social norms affect women and girls from HC and Rohingya communities, constraining all facets of their lives, including their ability to make decisions, propose solutions, and lead. Current leadership infrastructure among DRP is centered on the “majhi” (traditional leaders) system. This excludes women from decision-making positions. Evidence is needed to shed light on the relationship between effective women's leadership among DRP and hosts and mitigation of GBV.

Economic welfare outcomes

While agriculture remains the largest source of income among the HC, the DRP are generally restricted to paid volunteer work opportunities within camp settings. However, it is notable that agriculture has remained the principal economic sector in the district after the influx. More than half of HC households reported agriculture-related employment as

their main source of income. For DRP, livelihood options are restricted and regulated within the camps, and the majority of households are almost entirely reliant on humanitarian aid, including food aid, to meet their essential needs. However, there is very little analytical work available on the various aid initiatives and modalities (e.g., voucher programs) and their impacts. Employment in the camps is largely sustained by humanitarian programs. DRP men are largely employed in non-agricultural wage labor (primarily public works), while women run small-scale agricultural activities (many of which are home based such as poultry rearing). It is important to note that some evidence points to DRP participation as consumers in local markets outside the camps. Some sources report Rohingya bartering with food aid, particularly towards the beginning of the influx. Evidence generated later in the crisis suggests that, since the introduction of voucher programs, the significance of bartering has decreased, due to the diversification of DRPs' nutritional baskets enabled by vouchers.

There are substantial gaps in understanding how the HC has been impacted economically by the presence of Rohingya and the crisis response. Beneficial impacts include the creation of new jobs in transport, aid work, and accommodation, due to the influx of humanitarian assistance. Recently, the ban on cash-for-work programs in camps and the COVID-19 lockdown have been reported as reducing labor force participation among DRP, though evidence is limited. There have also been reports of decreased labor participation among HC during the pandemic. Gaps remain in understanding the current situation and whether DRP labor and food markets are actually competing with HC markets (e.g., through lower wages and prices).

Environmental sustainability

Expanding camp settlements, population growth, and other human activities continue to raise pressure on natural resources in Cox's Bazaar. The Rohingya camps in Cox's Bazar are situated near the protected areas of Teknaf Wildlife Sanctuary, Inani National Park, and the Himchari National Park. The evidence on environmental sustainability examined in this report shows that these areas have already suffered severe deforestation as camps have expanded. Damage has occurred through forest clearance for construction coupled with the use of trees for firewood. More recently, the Government of Bangladesh, together with international organizations and NGOs, has begun promoting reforestation around the camps to help mitigate the risks. However, evidence on the impact of environmental and waste management practices in and around the camps are extremely limited. More research is needed to better quantify the environmental costs already incurred, gauge the potential medium- to long-term impact of camp settlements on local ecosystems, and develop strategies to limit and reverse damage.

Education

There are several barriers to school participation and progression for both DRP and HC. Evidence from CXB host communities shows that secondary and higher-secondary

school enrollment rates here lag behind national averages, with financial constraints constituting the main obstacles to enrolling in and completing education. Rohingya children are restricted to learning centers operated by various NGOs with mixed results for educational outcomes. DRP and HC male children often fail to enroll in school or subsequently drop out in order to support their families through work. Girls lose schooling opportunities because of cultural norms, a disproportionate burden of caregiving and domestic work, and other gender-based barriers, including early marriage. High drop-out rates also reflect the perceived lack of value in schooling, lack of support programs such as school feeding, and issues of safe mobility for girls. Evidence is lacking on how education and vocational skills programs can be made more inclusive and effective for Rohingya and host youth.

Digital connectivity

Contrary to Government regulations banning the use of mobile phones among the DRP due to perceived security threats, limited data suggests that the level of utilization remains high. However, some evidence, reported utilization of these services is high. Among DRP, the most frequently used service on the internet is reported to be Facebook – largely used by male youth to gather information and news. However, little more is known about communication issues in the camps. The review found a lack of data on the relationship between quality of life and access to communication devices in camps. No data were available on the impact of mobile usage in camps and surrounding host communities.

Security needs

The DRP continue to be exposed to violence in the camps, largely driven by gang activities. Available reports suggest that Rohingya fear GBV, human trafficking, criminal activities, and inter-communal violence in and around the camps. There are growing tensions between HC and DRP communities, driven by concerns about land access and use; perceived and actual disparities in aid distribution and public services; broader resource competition; and perceptions of power. Research to date has not adequately analyzed the efficacy of protection and justice mechanisms within the camps. Detailed analysis of safety concerns is lacking that could clarify within-camp dynamics and how they may impact the HC. Security concerns for both populations have increased since March 2021 when a fire broke out in one of the Rohingya camps, displacing over 45,000 people. While the origin is still unclear, analyses of the fire's deadly impact should be undertaken by local authorities and humanitarian organizations to improve safety and security of both camp residents and neighboring local community members.

Conclusion



Overall, the evidence examined suggests that (research) coverage of the host community is largely underrepresented across all themes studied in this review. The majority of studies focused on DRP, while only a few articles were available presenting needs or impact assessments for HC members specifically. Outside of Bangladesh's most recent Household Income and Expenditure Survey (2016-17) and the Cox's Bazar Panel Survey baseline and follow-ups (2019-ongoing), there is a general lack of sufficiently disaggregated data on the HC. This severely constrains efforts to fully assess the local economic impacts of the DRP influx and the accompanying humanitarian effort and to address HC needs. The review identifies several areas where, despite efforts, further research is needed to guide policy and implementation. These include infectious disease prevention (including COVID-19), malnutrition, provision of basic services such as WASH, mental health, and protection from physical and sexual violence.

Thematic summary of findings

	Thematic areas	Key evidence from literature	Gaps in evidence
Health	Infectious diseases	<ul style="list-style-type: none"> • Camps are at higher risks of infectious diseases such as measles, diphtheria, diarrhea and acute respiratory infections. • Disease prevalence persists despite mass vaccination efforts • COVID-19 a potential new threat. 	<ul style="list-style-type: none"> • Lack of data on prevalence of diseases in HC, or any spill-over from the camps and vice versa. • How COVID-19 prevention methods have been implemented in the camps and surrounding HC areas. • Factors driving low uptake of immunization among the DRP merit further investigation
	WASH	<ul style="list-style-type: none"> • Majority of DRP and HC households use unimproved WASH facilities • State of accessible WASH facilities in and outside the camps are reported as unsafe, particularly for girls. 	<ul style="list-style-type: none"> • Despite its importance to control disease outbreaks, waste management systems in and around the camps are not examined • Mitigation strategies of COVID-19 risks and impacts in DRP camps and HC.
	Nutrition and food security	<ul style="list-style-type: none"> • The DRP primarily rely on humanitarian assistance for food • Consumption patterns of Rohingya households are comparable to the HC • High prevalence of malnutrition still reported among both DRP and HC children. 	<ul style="list-style-type: none"> • Lack of evidence on the efficacy of communication programs promoting nutrition and feeding practices among HC and DRP. • Though the DRP routinely barter food aid, more research is needed to understand the motivations for barter as food assistance has transitioned to a voucher modality
	SRH	<ul style="list-style-type: none"> • SRH-specific knowledge and access to related services are low among both DRP and HC. • Barring information from two national level surveys (DHS and MICS), granular information for the HC are absent. 	<ul style="list-style-type: none"> • Understanding of the prevalence of sexually transmitted infections among the DRP camps is lacking. • There is a lack of in-depth analysis of SRH perceptions and behavior among both the DRP and HC.

Thematic areas		Key evidence from literature	Gaps in evidence
Health	Mental health	<ul style="list-style-type: none"> Despite significant presence of mental distress among DRP, programs addressing mental health needs of the DRP, particularly for women and children, are limited. 	<ul style="list-style-type: none"> Evidence is lacking on the mental health and psychosocial factors among the DRP and HC dealing with the impacts of the influx. Studies examining bottlenecks in delivering mental-health services for the DRP are unavailable.
	Disability inclusion	<ul style="list-style-type: none"> Evidence on disability inclusion and access to relevant services is entirely focused on DRP, neglecting hosts completely. 	<ul style="list-style-type: none"> Documenting livelihood development, mental health, and related topics among persons with disability in DRP camps. Data disaggregated by gender, age groups, particularly in the case of children with disabilities and special needs across both populations.
Gender-based needs	GBV	<ul style="list-style-type: none"> Child marriage rates high across both DRP and HC. 	<ul style="list-style-type: none"> Evidence regarding numbers of victims of sexual violence among DRP women. Justice mechanisms available for HC and DRP women to address GBV including child marriage.
	Women's Leadership	<ul style="list-style-type: none"> Gendered social norms affect women and girls from HC and Rohingya communities. DRP leadership follows “majhi” (traditional leaders) system which excludes women from leadership roles. 	<ul style="list-style-type: none"> Evidence is needed to shed light on the relationship between effective women's leadership among DRP and hosts and mitigation of GBV.

Thematic areas	Key evidence from literature	Gaps in evidence
Economic welfare and local impacts of the influx	<ul style="list-style-type: none"> While agriculture remains the largest source of income for the HC, the DRP are generally restricted to paid volunteer work opportunities within camp settings. Some evidence points to DRP participation as consumers in local markets outside the camps. 	<ul style="list-style-type: none"> There are substantial gaps in understanding how the HC has been impacted economically due to the presence of the DRP and the subsequent crisis response. Better understanding of the current situation is needed to understand whether DRP labor and food markets are actually competing with HC markets (e.g., through lower wages and prices). Lack of data and methodology for attribution of costs associated with hosting the Rohingya, including environmental costs
Environmental sustainability	<ul style="list-style-type: none"> Expanding camp settlements, population growth, and other human activities continue to raise pressure on natural resources in Cox's Bazaar 	<ul style="list-style-type: none"> A better understanding is needed of the impact of poor waste-management in camps and neighboring HC on environment.
Education	<ul style="list-style-type: none"> Higher-secondary school enrollment rates among HC in CXB are below national averages. DRP children restricted to learning centers in the camps. Girls are more likely to drop out of schools than boys. 	<ul style="list-style-type: none"> Evidence on how education and vocational skills programs can be made more inclusive and effective for both Rohingya and host youth.
Digital Connectivity	<ul style="list-style-type: none"> Mobile phone and internet use for the Rohingya has been banned since September 2019 by GoB. Despite the ban, prevalence of mobile phone and internet usage is high in the camps. 	<ul style="list-style-type: none"> Detailed data on mobile phone use among DRP and HC in surrounding camp areas.
Security needs	<ul style="list-style-type: none"> The DRP fear GBV, human trafficking, criminal activities, and inter-communal violence in and around the camps. 	<ul style="list-style-type: none"> Analysis of safety concerns that could clarify within-camp dynamics and how they may impact the HC.

Introduction

Since August 2017, more than 725,000 Displaced Rohingya People (DRP) have arrived in Bangladesh's Cox's Bazar district from Myanmar (World Bank 2020c). The mass exodus of Rohingya has been widely attributed to the Myanmar government's refusal to recognize Rohingya as citizens, followed by widespread violence against this community, including reports of organized rape, murder, and arson of homes and villages (Iacucci et al. 2017; Inter-Agency 2018; UNDP and UN Women 2018). While the most recent displacement of Rohingya is the largest to date, smaller-scale migrations have occurred at regular intervals since the 1970s. There were an estimated 300,000 DRP already living in Bangladesh prior to the 2017 influx (UNHCR 2018).

The Rohingya who have sought refuge in Bangladesh continue to face several chronic challenges. A study from 2011 reported that 45 percent of Rohingya in the Rakhine State were food insecure, lacked sufficient employment opportunities, earned low wages, faced high health expenditures, and struggled under high debt burdens (Poe 2011; A. R. Chowdhury et al. 2018). While a significant proportion of Rohingya children aged five to 17 had never received any formal education, most of those who did attend school never advanced beyond the primary level. Prior to displacement, the majority of Rohingya children were not immunized, and a high prevalence of malnutrition and other serious health conditions was observed in the community (Severijnen and Steinbock 2017; A. R. Chowdhury et al. 2018).

The DRP are almost entirely reliant on humanitarian assistance for survival. Since the influx, the DRP have been distributed across 34 camps, predominantly in the Teknaf and Ukhiya sub-districts of Cox's Bazar. The DRP residing in camps depend on humanitarian

assistance for food, shelter, education, and healthcare (Green and Blanford 2020). Nearly 13 percent of DRP children under five years are acutely undernourished, while a third are suffering from chronic malnourishment (Sanduvac 2017). A 2019 needs assessment found that widespread extreme outcomes among DRP had been avoided through the outstanding efforts of humanitarian actors. However, Rohingya in CXB still struggle to meet basic needs for food, health, education, and access to livelihoods, as they did prior to displacement. Rohingya continue to face economic and movement restrictions, exacerbating the dependence on humanitarian assistance (Ground Truth Solutions, 2019b). Concerns about security continue to play a large role in their lives, and reports state fear for safety has increased after a recent fire that broke out in the Rohingya camps in March 2021 (ISCG 2019c; UNICEF 2021).

In the Cox's Bazar sub-districts where DRP are most concentrated, Ukhiya and Teknaf, HC economic conditions were difficult before 2017. Post-influx, Bangladeshi hosts are outnumbered by Rohingya approximately three-to-one in these areas (Green and Blanford 2020). The Bangladesh Bureau of Statistics (2017) identified Cox's Bazar pre-influx as one of the country's "lagging districts". Agriculture is the largest economic sector in the CXB district. In 2019, the most frequently reported source of income among hosts in Teknaf and Ukhiya was skilled wage labor in agriculture (33 percent), followed by small business (28 percent) and agricultural production and sales (16 percent). Housing conditions and access to infrastructure and basic services are poor for the HC, with a low rate of ownership of high-value durable goods. Overall, while many hosts were vulnerable beforehand, the DRP influx has raised additional concerns, including fledgling public services, environmental degradation, and overburdened infrastructure. This has been at least in part brought on by a high influx of humanitarian organizations who have set up semi-permanent bases in the region. These factors have been attributed to as factors escalating tensions between the Rohingya and HC (ISCG 2019b).

The DRP are completely reliant on aid which is coordinated under the Government of Bangladesh and humanitarian agencies. Multiple international NGOs and UN agencies contribute to humanitarian and development work in CXB. But coordination is primarily ensured by the Inter-Sector Coordination Group (ISCG), a central linking body for humanitarian agencies serving Rohingya in Cox's Bazar. Participating agencies are organized into 12 thematic sectors¹ and sub-sectors (e.g., Protection, Health, WASH) as well as working groups that focus on cross-cutting issues (e.g., Gender in Humanitarian Action, Communicating with Communities). A number of organizations are working to mitigate the fallout from the crisis on various fronts.

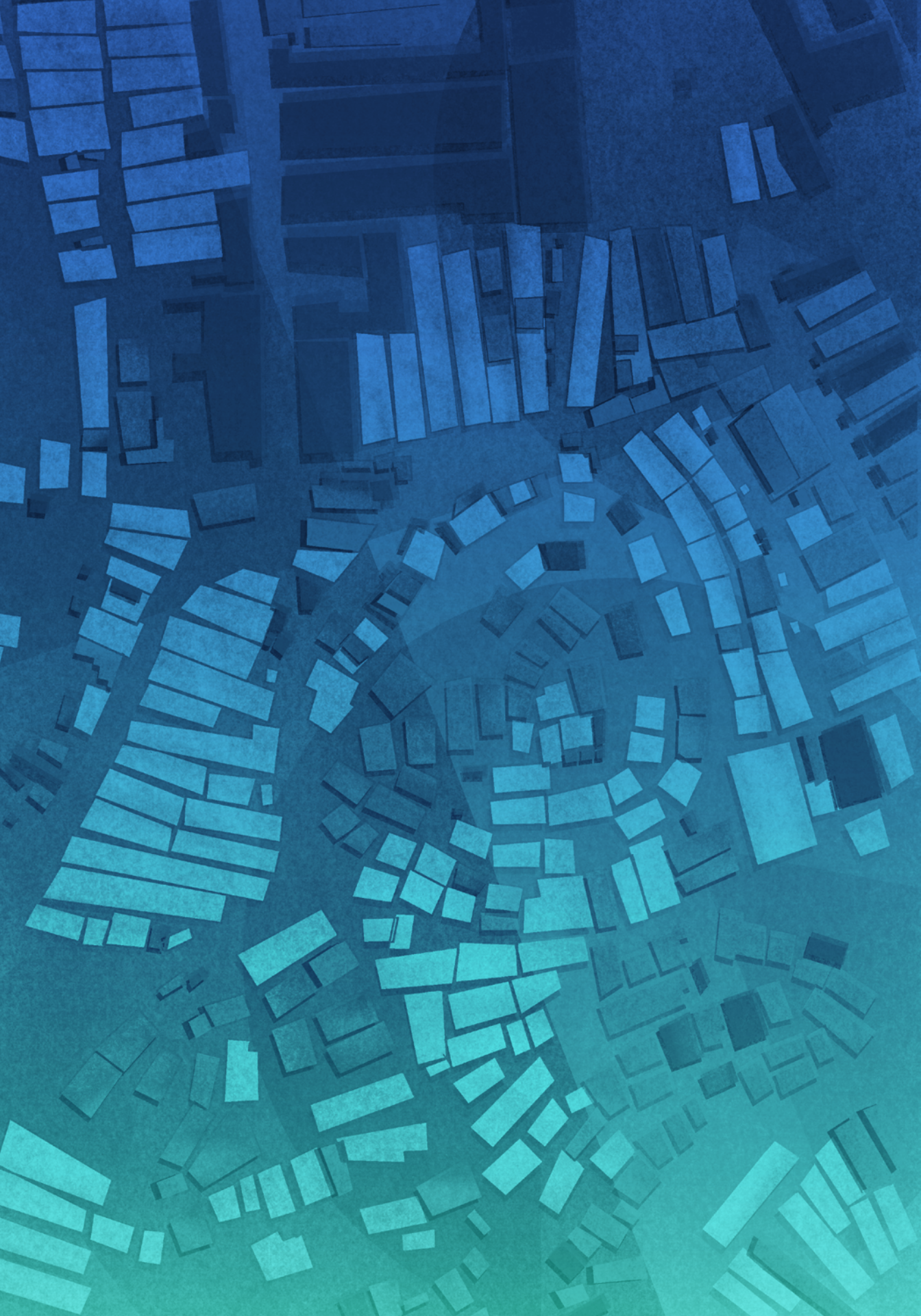
¹The ISCG is a coordination body consisting of international and domestic agencies responding to the refugee crisis and led by the International Organization for Migration. In Cox's Bazar, it is organized into 12 thematic sectors including Health, Nutrition, Food Security, WASH, Protection, Gender, Education, Host Communities, Emergency Telecommunications, Shelter, Inter-Sector Coordination, and Site Management.

In addition to implementing programs, many humanitarian and development organizations working in CXB are generating knowledge products to improve service delivery and inform policy. No review and evaluation of these materials has yet been produced. The body of evidence emerging from government agencies, multilateral institutions, humanitarian organizations, and academic researchers engaged in Cox's Bazar is heterogeneous in the methods used and the quality of outputs. The regional development agenda can benefit from a rapid evidence assessment of the findings from such studies to date to distil relevant information and inform policy decisions.

This paper attempts to identify knowledge gaps by reviewing existing literature focused on the Cox's Bazar region, the DRP, and the HC. Standard literature search and filtering strategies were used to identify publications addressing the relevant subjects and extract a series of overarching themes that serve as organizing concepts. Following the peer-reviewed literature search, selected experts and organizations were contacted to identify additional analytical work not yet available in online databases.

Nine themes and eight sub-themes were identified under this review. These include health (subdivided into infectious disease; water, sanitation and hygiene; nutrition and food security; sexual and reproductive health; mental health; eye health; and palliative care); disability inclusion; gender-based needs (e.g., addressing gender-based violence and women's leadership); economic welfare outcomes; environmental sustainability; education; communication; protection needs; and the accountability of humanitarian organizations. These themes reflect the topics that appeared most frequently across the literature examined. Under each theme, this paper provides an overview of the available evidence, then goes on to highlight areas within each of the themes that can benefit from further attention and research.

This paper is organized as follows. Section 2 outlines the methods guiding the evidence assessment. Section 3 provides a narrative analysis of the evidence obtained under each theme. Themes are presented in an order based on the number of studies assigned to each theme. Section 4 summarizes the gaps identified in the available literature. Conclusions are drawn in section 5.



Methodology

Collecting and evaluating evidence on an unfolding crisis poses methodological challenges. The Rohingya crisis is particularly complex, given the multidimensional nature of the events, the number of players involved, and a relatively short time-horizon. Traditional literature reviews focusing exclusively on academic journals and databases can fail to capture materials of value for situation analysis and response in crises. The present study seeks to minimize such losses of information by combining strategies from different standard review approaches including quick scoping reviews and rapid evidence assessments.² The resulting search process has included two distinct components: an initial online literature review seeking peer-reviewed publications, complemented by a secondary outreach strategy in which field experts and stakeholders were solicited to provide additional sources from the grey literature. The initial phase involved a search of academic databases³ for published articles relevant to the DRP, HC and the CXB region, using the inclusion and exclusion criteria listed in Table 1.

² A rapid evidence assessment (REA) is a type of evidence review that aims to provide; an informed conclusion on the volume and characteristics of an evidence base, a synthesis of what that evidence indicates and a critical appraisal of that evidence. A quick scoping review (QSR) is a type of evidence review that aims to provide an informed conclusion on the volume and characteristics of an evidence base and a synthesis of what that evidence indicates in relation to a question. Adoption of quick scoping reviews and rapid evidence assessments for the purpose of this report is based on guidelines from Collins et al. (2015).

³ Academic databases used included SCOPUS, Web of Science, Econ Papers, Econ Lit, Emerald, SSRN, Ideas-Repec, and Google Scholar.

This review and the search criteria in large part are guided by thematic sectors established under the Intersectoral Coordination Group (ISCG). These themes formed the basic framework for the taxonomy of search strings used to explore online databases.⁴ The studies identified are then compared against the inclusion and exclusion criteria to distill the evidence base to provide a realistic and grounded picture of the situation. Details of the search terms and the snowballing techniques used to compile literature are presented in Annex 2.

For the initial phase of the search, via electronic databases, the study iterated and selected specific search strings determined a priori. The review team then added theme-specific search terms in selected databases to prevent any relevant studies being excluded. Thirty-eight peer-reviewed journal articles were identified in this phase.

The second phase of the review involved reaching out to stakeholders in the field to identify literature not collected in the prior step. Through snowballing, the review team consulted relevant experts to discuss specific publications, topics, and thematic areas. This approach yielded 57 additional studies, including working papers, needs assessments, baseline and follow-up reports, policy briefs, and rapid assessments.

The screening and final selection of studies involved two stages. The first screened studies based on pre-defined inclusion and exclusion criteria (Table 1), while the latter utilized a quality scoring mechanism developed specifically for this review (Annex 1). In the second stage, studies were assessed for quality of evidence based on a checklist assigning scores for features such as research questions, data collection, analysis, overall methodological rigor, and results.⁵ A total of 95 studies initially collected for the review were evaluated using the evidence assessment instrument. Each study received between 0 and 7 points. Studies receiving high (6-7) and moderate (3-5) scores were included in the final review, while those scoring less than 2 points were excluded.⁶ All studies were graded independently by two members of the research team. In cases where initial scoring diverged, results were discussed within the team and a final consensus score determined.

⁴ Taxonomy for search engines refers to classification methods that improve relevance in vertical search (Vicient, Sánchez and Moreno 2013).

⁵ The development of the evidence assessment was guided by a note published by DIFD on assessing the strength of evidence (DFID, 2013).

⁶ Articles and reports that scored between five and seven points included a great deal of information that was useful in understanding the evidence in context of the influx and included a larger sample size, weighing them as more representative.

Table 1: Inclusion and Exclusion Criteria for Candidate Studies

Inclusion	Exclusion
<ul style="list-style-type: none"> • Studies focused on the DRP and/or HC in Cox's Bazar • Studies relying on some formal methodology, including quantitative, qualitative, or mixed-methods techniques • Studies including analysis of micro, macro, or qualitative data using recognized scientific principles 	<ul style="list-style-type: none"> • Studies reaching conclusions based on perceptions (e.g., opinion pieces) • Studies that do not include a discussion of research methods employed • Studies focused on DRP beyond the geographic boundaries of Bangladesh • Studies written in a language other than English or Bangla

The grading exercise identified a total of 89 studies for inclusion in the final review (see Figure 1). The overwhelming majority the studies reported results using quantitative methods, followed by qualitative and mixed methods (see Figure 2). Given the rapidly evolving situation surrounding the crisis and the rapid nature of the assessment, the inclusion and exclusion criteria were designed to be inclusive of studies that met the minimum requirements as outlined earlier. Using the scoring method developed in the evidence assessment instrument (see Annex 1) was key in ensuring the inclusion of studies that met the minimum requirements. For instance, the remaining six articles scored below three points and did not possess the characteristics that would have made them appropriate for the review (e.g., failed to provide sampling details, lacked overall methodological rigor, or showed other substantive flaws). Included articles were published between December 2017 (reflecting the start of the latest Rohingya influx) and July 2020, when this review was conducted. All studies considered in the review including relevant details used for scoring purposes are listed in Annex 4.

Included studies were examined, grouped, and synthesized using narrative analysis. The process aimed to organize the breadth of the available literature through a thematic lens. Each article was reviewed to extract relevant findings and grouped under an emerging framework of themes informed by article content and keywords, including “health,” “gender,” “education,” and “environment,” among others.⁷

⁷ Narrative analysis allowed for categorization of each article under the appropriate themes based on the topics discussed and evidence presented in each study. For instance, reports that discussed health-related outcomes like infectious disease were grouped or, if necessary, sub-grouped according to more micro-level groups under the larger theme.

Six studies included in the review were assessment reports conducted across multiple sectors (e.g. WASH, health, livelihoods, and others). These studies were intended to capture outcomes across diverse sectors and indicate potential interactions. In the body of the current paper, findings from multi-sectoral reports are distributed across the relevant thematic headings. When classifying studies thematically (Figure 1), the review team placed these multi-sectoral reports in a stand-alone category.

Figure 1: Thematic Categories

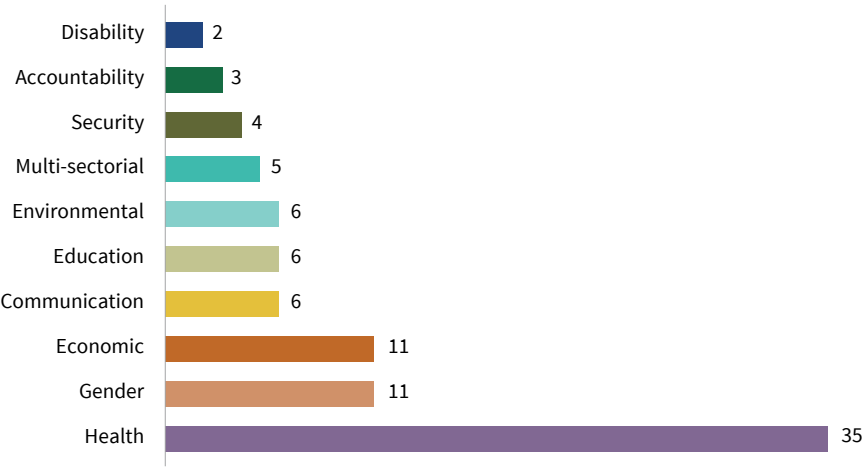
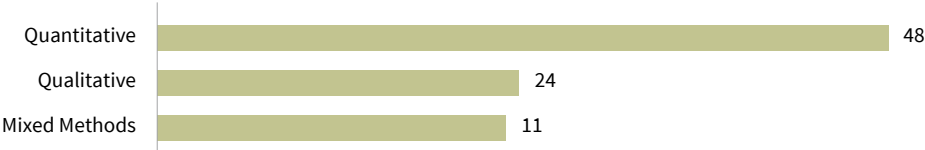


Figure 2: Types of studies



Findings by Themes

In the methods used and the quality of evidence generated, the studies incorporated in this review reflect the challenges of generating research and evidence during a humanitarian crisis. Many of these studies also demonstrate the valuable, practice-relevant results that research in frontline contexts can yield. The available studies, combining elements of quantitative and qualitative approaches, have for the most part been conducted by organizations operating on the front lines of the Rohingya response. The urgency and complexity of the crisis have favored the publication of rapidly executed, mixed-methods studies. Mixed-methods approaches may facilitate triangulation of data and help orient program implementers to areas of unmet need.

Of note, the majority of papers obtained for this review derived their population samples from UNHCR databases. UNHCR maintains the official database of both officially registered and unregistered DRP. Thus, while the researchers who produced the papers discussed here worked independently, they had to engage with UN agencies in order to access camp and HC populations for their studies.

The subsequent sections of this paper outline the evidence found under each of the nine themes and eight sub-themes identified for the review. As noted, the findings discussed below are based on a total of 89 papers and include topics in health, disability inclusion, gender-based needs, economic welfare, environmental sustainability, education, communication, protection needs, and the accountability of humanitarian organizations.

3.1 Health

Health studies are examined under a series of sub-topics: prevention and surveillance of infectious diseases; water, sanitation and hygiene; nutrition; mental health; sexual and reproductive health; and a mixed category of “other health topics,” which includes studies of eye health and palliative care. Topics in the health space have been the most widely studied among the themes covered in this review. An especially large number of studies have been devoted to disease prevention and surveillance-related issues.

3.1.1 Prevention and Surveillance of Infectious Diseases

Control of communicable diseases is a major concern for the DRP response, as for other humanitarian efforts. A large proportion of deaths in many conflict and displacement situations are attributed to the spread of infectious diseases (Geneva Declaration Secretariat 2008). Studies note that several factors can increase displaced people's risks of exposure to infectious diseases during transit and while they live in camp settlements. Malaria, for instance, is a significant problem in Bangladesh, and highly endemic in the CXB region, particularly the border areas where many DRP camps are currently located. Combined, Cox's Bazar and the Chittagong Hill Tract districts report over 90% of Bangladesh's malaria cases and 80% of the country's deaths due to the disease (National Malaria Control Programme, 2015). However, only one study examined malaria in CXB, and it focused only on the Rohingya population.

While malaria is known to be endemic, there is a lack of evidence specifically around prevention and surveillance of the disease, with even less evidence available on host communities in comparison to DRP populations. The only included study examined malaria antigens and anti-malarial antibodies as indicators of infection status and exposure rates among DRP children. Because exposure to malaria antigens at a young age has the potential to induce a decades-long, or even life-long, antibody response, Lu et al. (2020) set out to investigate whether there were any positive case of antigens in two DRP camps; however, no cases were found at the time of sampling. Yet, this indicates that timely surveillance of active malaria infections is still required both in the camps and surrounding host communities living in the most endemic areas, particularly in monsoon seasons, when infections increase.

Other factors associated with camp sites—including overcrowding, poor water and sanitation conditions, and lack of vaccination—often accompany emergency situations and can lead to increased incidence of diseases such as diphtheria, cholera, hepatitis E, and diarrheal diseases (F. Chowdhury et al. 2020). Airborne diseases such as measles, tuberculosis, and acute respiratory infections (ARIs) are also endemic to Bangladesh and are a concern among the Rohingya and host populations in Cox's Bazar (Summers et al., 2018). While access to affordable, accessible and timely health services is cited as a major challenge for displaced people within the camps, the issues are more acute for DRPs situated outside camp boundaries (Finger et al. 2019).

Measures to control outbreaks

As the new arrivals began to settle around existing camps, cases of measles, diphtheria, diarrhea, and respiratory infections were reported, followed by immunization campaigns. Although the outbreaks spilled over to the host community, the unregistered recent arrivals appeared to have higher morbidity rates (Finger et al. 2019; Summers et al. 2018; Chin, Buckee and Mahmud 2020). A study by Chin, Buckee, and Mahmud (2020) stated

that the Bangladesh Ministry of Health and Family Welfare and international partners conducted seven immunization campaigns between 2017 and 2018 to control ongoing and future outbreaks. However, evidence on the efficacy of these campaigns is mixed; while the number of measles and diphtheria cases detected in the camps decreased through 2018, spread of these diseases had not ceased entirely.

High incidence rates of cholera are also reported in the camps, although there have been vaccination campaigns. Summers et al. (2018), studying the population across Kutupalong Camp, Nayapara Camp, and makeshift settlements,⁸ reported on the efficacy of vaccination campaigns against cholera. Their findings suggested high rates of the disease despite efforts. With the exception of unregistered DRPs in Kutupalong Camp, coverage with at least one dose of oral cholera vaccine was high. However, the authors note that a single vaccine dose provides only up to 40 percent protection from the disease. In addition, the camps are overcrowded, with poor hygiene and sanitation. These factors may contribute to high incidence rates. On the other hand, a study by Chowdhury et al. (2020) highlighted the positive immune response to the oral cholera vaccine among recipients in the camps. This was largely comparable to the responses seen among Bangladeshi participants of different age groups and to results observed in other cholera-endemic countries. Both articles suggest the need for frequent mass cholera vaccine administration in the camps, as well as rigorous surveillance. The need to prevent spill-over of the disease into the HC calls for timely prevention methods.

Mass vaccination campaigns were also conducted in response to the high incidence of acute respiratory infections (ARI), associated morbidity, and an ongoing diphtheria outbreak. A cross-sectional study by Oishi and Alam (2020) also investigated the risk factors associated with ARI among children under 10 years in Rohingya camps and found that about 21.6 percent of 259 children included in the study had symptoms of ARI. The study identified malnourishment, especially inadequate protein intake among children, and overcrowding in camps as main risk factors. Respiratory infections are exacerbated by smoke inhalation, and all study participants reported having indoor wood-burning cooking facilities, creating a congested area and poor ventilation in the household. Considering the dire living situations in DRP camps, further studies should be conducted to learn more about behavioral and other risk factors associated with respiratory diseases and other health conditions, so that better preventative methods can be designed.

⁸ Three cross-sectional population-representative household surveys were conducted in Kutupalong (October 22–28), makeshift settlements (October 29–November 20), and Nayapara (November 20–27). Sampling frames included all households in each area regardless of whether they were registered with UNHCR. In Kutupalong and Nayapara, households were selected using simple random sampling. Because of the large population residing in the makeshift settlements, households in these sites were selected using multistage cluster sampling; the Inter Sector Coordination Group provided block populations.

Prevention coverage

Despite repeated campaigns, a cross-sectional study of vaccination coverage and sero-prevalence among Rohingya children observed that immunity gaps persisted among children living in the camps. Feldstein et al. (2020) found this particularly true for diphtheria, which requires serial vaccinations to achieve maximum protection. The researchers concluded that rapid scale-up and strengthening of routine immunization services is needed to reach young children and deliver missed doses to older children. These measures are critical to close immunity gaps and prevent future outbreaks. Another example concerns a measles outbreak in 2017: while Chin, Buckee and Mahmud (2020) found that vaccination campaigns achieved high coverage, they speculated that future measles outbreaks were still likely. This is due mainly to the fact that, historically, Rohingya populations have low vaccination coverage rates, while the birth rate among the DRP population is very high, which rapidly replenishes the susceptible population.

Such findings emphasize the necessity of consistently implementing preventive interventions like vaccination and maintaining ongoing real-time surveillance. For instance, a study that employed real-time analysis of the diphtheria outbreak in November 2017 showed how transmission dynamic models and forecasting techniques can provide insights into the epidemiological processes underlying disease outbreaks. Real-time modelling enabled feedback of key information about the potential scale of the epidemic, resource needs, and mechanisms of transmission to decision-makers at a time when such information was otherwise largely unavailable. Authors claim that, within a month after diphtheria broke out in the camps, their model was able to generate reliable forecasts that helped support decision-making on operational aspects of the response. For example, the forecasts led MSF to increase staffing to respond to the outbreak, employing a strategy of surge staffing for international staff and expedited recruitment of national staff doctors and nurses. It was also decided to categorize hospital beds into two severity levels depending on clinical signs and to treat mild cases in the community, which helped ensure that the available number of beds was never exceeded. Stocks of diphtheria antitoxin,⁹ antibiotics, and other supplies were increased (Finger et al. 2019).

Threats of novel coronavirus

At the time of this review, threats linked to the emerging novel coronavirus pandemic led several groups on the ground in CXB to conduct rapid assessments. These exercises aimed to evaluate the situation and anticipate potential impacts on HC and DRP. But just over a year after the first cases of coronavirus were reported around the world, out of almost 30,000 tests conducted in the Rohingya camps to date, only 400 cases of COVID-19

⁹ A global shortage of diphtheria antitoxin existed at the time, due to concurrent outbreaks in Yemen, Venezuela, Indonesia, and Haiti.

have been confirmed, resulting in 10 deaths (Donovan and Yaesmine 2021).¹⁰ While the medical reasons behind the relatively small infection rates are yet unclear, it is likely that the presence of humanitarian aid has assisted in deploying a rapid initial intervention. Notwithstanding, data from the currently deteriorating situation is unavailable. This has allowed for coordination between health programs and provided capacity building for all health care workers in Cox's Bazar. WHO, together with the Ministry of Health and Family Welfare (MoHFW) and the Refugee Relief and Repatriation Commissioner office (RRRC), continues to provide leadership, coordination, supportive supervision and collaborative support to all health partners and sectors responding to the COVID-19 emergency. So far, 745 government workers and 1,320 humanitarian health care workers have been trained in CXB. The strategy in the region has been focused on reducing transmission risks to contain first infections both in the host and DRP communities (World Health Organization 2020).

Rapid analysis reports on coronavirus have emerged from the ISCG and its partners, including the UN, Care International, and UK Aid. Many of these analyses present simulated transmission rates that suggest extreme scenarios. One assessment found that a large outbreak of COVID-19 was highly likely in this population, even under a low transmission scenario; 65 percent of the simulations produced an outbreak of at least 1,000 infections with a single introduction. The report implies that an outbreak in the camps would not only overwhelm existing health systems, but also that the transmission rates would be higher in the camps than outside in the host communities (Truelove et al. 2020). However, the numbers reported by the WHO show the opposite, while reflecting swift preventative measures that were taken to ensure low transmission through containment of first infections. While the impact of COVID-19 in the DRP camps (as well as the greater country and South Asian region) has not been as severe as in many settings in Europe or the Americas, more evidence is required on the exact preventative and other measures taken thus far, in order to draw further conclusions about the spread of infections and effective disease control strategies in this context.

A rapid gender analysis of COVID-19 in the camps, conducted by the ISCG Gender Hub (Toulemonde 2020), stated that women and girls would be disproportionately affected. The report bases its analysis on gender norms and roles in both DRP and host communities that arguably make women and girls more vulnerable to becoming infected. For instance, women are often expected to be primary caregivers and therefore are at high risk of exposure to other persons infected by the coronavirus. However, the actual impact of the pandemic on DRP and HC women has not been determined, and more evidence is required to draw concrete conclusions.

¹⁰ Reported as of 18 March 2021.

Availability and quality of evidence on infectious diseases

The evidence on infectious diseases in DRP camps is the most robust found on any health-related topic for this review. This reflects the availability of survey data and the use of larger sample sizes. That said, the available data is mainly centered on DRP camp residents and fails to provide a holistic picture of how infectious diseases may spill over into host communities (or, alternately, may move from host areas into camps). This is a critical topic to examine in light of COVID-19. A multi-sectoral anticipatory impact and needs assessment suggested that the COVID-19 pandemic will place increased strain on existing healthcare workers and the area's health system as a whole, compounded by a shortage of healthcare workers, PPE, and other resources (Needs Assessment Working Group Bangladesh 2020). More extensive examination of these impacts is required to understand likely effects on the DRP and HC.

Studies on infectious disease provide more quantitative data than the other types of studies examined for this report. However, even regarding infectious diseases, substantial gaps in evidence remain. For example, the study examining coverage of the oral cholera vaccine among Rohingya children by Summers et al. (2018) observed that cholera incidence had declined in the camps, but failed to provide a robust account of the various factors that may have contributed to the change. Few studies are available that examine problems with specific health programs and interventions. Studies have also generally failed to present evidence on behavioral traits or other factors that may be driving the spread of infectious diseases in some instances (e.g., the relationship between improved WASH facilities and the performance of children's immunization programs in reducing ARI and diarrheal disease). In general, evidence is scant on behavioral and other risk factors surrounding key diseases or conditions among DRP or HC. Cross-sectional surveys can be undertaken to assess disease immunity and inform future vaccine strategies, like the one conducted by Estivariz et al. (2020) in April–May 2018 among DRP to assess polio immunity and inform vaccine campaigns. Lastly, while this review includes several articles addressing the early stages of COVID-19 in CXB, they are mainly based on needs analyses. They examine the anticipated impact of the virus on the DRP and host communities but fail to present concrete figures documenting the situation in the camps and neighboring communities. Thus, the evidence does not demonstrate a fully consistent picture, and data remains insufficient to draw conclusions about infectious disease prevention and surveillance in the camps.

3.1.2 Water, Sanitation and Hygiene

The influx of the Rohingya population into Cox's Bazar district has put significant pressure on essential services and infrastructure. The majority of both DRP and HC households are using unimproved sanitation and shared water sources. The state of accessible latrines and hygiene in and outside the camps is also reported as critical. But more

evidence on WASH-related outcomes is required, including menstrual hygiene services for women and the implications of the coronavirus for local service provision and facilities.

While HC households report access to drinking water, access to basic sanitation and hygiene is poor. MICS survey data shows that, nationally, 98 percent of Bangladeshi households have access to basic drinking water, but only 64 percent to basic sanitation and 75 percent to basic hygiene facilities. Similar to the national average, the survey reported that 96 percent of the population in Chittagong enjoyed access to improved sources of drinking water; 66 and 69 percent, respectively, had access to basic sanitation and basic hygiene.

The cumulative effects of high population density in the camps, environmental vulnerability, and the unplanned nature of DRP settlements led to an acute water, sanitation, and hygiene (WASH) crisis following the influx of displaced Rohingya (Kurkowska, Montangero, and Cippà 2019). The WASH Sector Strategy led by REACH suggested the need for immediate interventions related to kitchen, handwashing, and sanitation facilities for families residing in temporary houses. As the situation progresses to the next phase, humanitarian agencies are in the process of implementing a medium-term WASH strategy which focuses on improving the quality of infrastructure and community participation. The advent of COVID-19 has exacerbated WASH-related challenges faced by the DRPs, who were already having to adjust their lives in congested and resource-constrained camps. A growing body of work focuses on understanding the current state and effects of WASH-related interventions.

Access to WASH facilities

Waterpoints in the majority of DRP camps and certain HC areas are comprised of shared tube-wells. According to the CBPS briefs, 89 percent of HC households used shared tube-wells as their primary source of drinking water. Similarly, a survey of 3,567 DRP households showed they mainly used shared tube wells as well (REACH 2018b). Nonetheless, a very small percentage of the DRP reported using unprotected drinking water sources. The surveyed DRP households reported that women and girls were primarily responsible for collecting water. The commute to and from water points was less than thirty minutes for the majority of the respondents. However, the average waiting times at water points were reported to be more than 30 minutes for more than ten percent of the population. One in five households carried out water treatment and all households had at least one container for storage purposes (REACH 2018a; REACH 2018b; REACH, 2019b; REACH 2019c).

Along with limited access to proper sanitation in the camps, Rohingya households must share these facilities with other camp dwellers. Based on the Cox's Bazar Panel Survey (World Bank 2019a), 75 percent of the population living inside the camps report having limited access to sanitation facilities. Houses in camps do not have access to attached or private WASH facilities. Rather these facilities are shared among several households. One-third of the population (34 percent) reported sharing latrines with more than 25

households, while only 4 percent of camp households reported having a private latrine. The limited access reported by camp residents is directly driven by the high incidence of sharing these facilities.

In comparison, fewer host households must use shared waterpoints and sanitation facilities. Only 50 percent of all host households report using shared water and sanitation facilities, while 39 percent of hosts have access to basic (improved) sanitation (Cesar et al. 2019d). An assessment of the HC conducted by REACH (2019d) revealed that problems accessing latrines were reported by 30 percent of households. The most commonly reported problems were that the latrine was not safe (11 percent) and not clean (10 percent).

Some studies showed that the availability and quality of WASH services are determined in part by the seasons. Porter (2019) highlights that dry seasons limit water availability, and equal water pressure is not available across all the taps during this season. Furthermore, in Bangladesh, when the monsoon season sets in, the groundwater can become compromised due to the intrusion of a high volume of saltwater (Sikder 2010). Evidence suggests that substantial rainfall limits access to WASH facilities. For instance, at the onset of the crisis, which occurred during the monsoon, the state of WASH was particularly serious, with more than 90 percent of DRP household water sources contaminated by *E. coli*. One-third of the latrines that were installed became unusable in less than a year due to the heavy rainfall (Loy 2017).

Poor hygiene and sanitation conditions, along with seasonal effects, can further increase the vulnerability of camp residents who utilize makeshift infrastructure. These factors also affect hosts living in areas with poor WASH facilities. An assessment by the WASH Sector partners, UNICEF and REACH (2019) further confirmed the interrelated effects of poor hygiene and sanitation conditions. It warned of contaminated drinking water in camps and reported that the probability of an outbreak of water-borne diseases increased exponentially due to these circumstances. Similarly, IOM (2018a) found that in almost all camps where toilets were close to the water points, there were also outbreaks of diarrhea.

WASH for better health outcomes

Data revealed that the main sanitation facilities used by DRPs were communal latrines, followed by shared household latrines (REACH, 2018a). While most adults defecated in latrines, around 65 percent of children under the age of 5 defecated in open spaces. Dumping of household waste in non-designated open areas was highlighted as a concern for one-third of the households. More than half of surveyed households reported access to latrines as a challenge, and the most common problems associated were overcrowding, travel time, and the latrines being clogged. There are also significant issues surrounding safety around latrines. A high proportion of adult women report feeling unsafe using latrines at night (REACH, 2018b; REACH 2019b; REACH 2019c; REACH 2019d).

Water chlorination is a commonly used method to provide safe drinking water and a preferred solution in emergencies. Sikder et al. (2020) assessed the impact of bucket, in-line, and piped water chlorination programs on the quality of drinking water. The results indicated that the majority of stored water in the bucket and piped water chlorination households met the *free chlorine residual criteria* and the *E coli criteria*. Multivariate analysis, however, suggested that none of the interventions met international standards completely. The study also underscored the importance of taking into account beneficiary preferences and iterated that the pros and cons of each water source chlorination program must be understood and customized during implementation.

WASH activities are positively correlated with maternal and child health. Chowdhury et al. (2018) reported that a high proportion of women of reproductive age washed their hands with soap. However, a modest proportion of the population also reported using only water, ash, or earth. WASH-related illnesses such as cough, fever, difficulty in breathing and loose stools were found to be prevalent among Rohingya children. More than one-third of women were able to access menstrual hygiene material, though a quarter reported that not enough was provided to them through the aid distribution channels. Reusable menstrual underwear, reusable pads, or pieces of cloth were the most-used hygiene materials. Qualitative interviews confirmed these findings. Many Rohingya women reported learning about menstrual hygiene management for the first time after their arrival in Bangladesh (WASH Sector, UNICEF and REACH 2019). While one of the most effective ways to contain the spread of disease and infection is through effective sanitation measures, more evidence is required to understand how this can best be promoted in the camps and surrounding HC communities.

Improving WASH facilities in camps

It is important to note that, since the first camps were built for the incoming Rohingya in 2017, follow-up REACH WASH surveys show marked improvements (REACH 2019d). In the most recent survey, from 2019, nearly all households reported using improved water sources for drinking, while a moderate proportion used them for non-drinking purposes. Nearly three-quarters of the respondents reported shorter lines at the water points. Less than half of the respondents still faced challenges in accessing or collecting water. In terms of sanitation, the majority of the men and women surveyed reported using communal latrines. Adult women and a moderate proportion of girls aged between five and 17 years, however, continue to face some challenges. The fundamental problems they highlighted in their ability to access latrines were too many users, no gender separation, and lack of security. However, unlike baseline data, the last follow-up survey reveals that more men face challenges in accessing bathing facilities than women. Community consultation in installing WASH-related facilities was also becoming common (REACH 2019c; REACH 2019d).

From what little evidence is available on waste management, it is clear that disposal of human and other waste is done in a non-systematic way in and around the camps. However, additional studies on the impact of poor waste management needs to take in to consideration how it could negatively affect efforts to contain spread of infectious diseases (e.g. corona, diarrhea, etc.) as well as other potential environmental impacts. . Some notable improvements have been made concerning hygiene. Nearly 90 percent of the households reported owning soap, while an equivalent proportion reported washing their hands every day. Hsan et al. (2019) confirm the high self-reported frequency, among Rohingya respondents, of washing hands before eating and feeding a child and after going to the toilet or touching dirty objects. Women, in general, are more likely to wash their hands in comparison to men.

WASH-related activities are strongly correlated with health outcomes. Much-needed improvements in the WASH space have been noted over time through several studies. However, while the evidence available is credible and provides a consistent picture of the situation in the DRP camps, there is still a lack of substantive studies on several specific WASH-related topics that are only briefly touched on in the existing studies. For example, one area that requires further examination is in the provision of WASH and menstrual hygiene services; the existing evidence demonstrates that, among DRP women, there was already a lack of menstrual hygiene knowledge before the influx into Bangladesh from Myanmar. However, there is a lack of evidence on whether the newly acquired knowledge and behavior change have been maintained by the beneficiaries of programs providing such interventions. Data is lacking on the ultimate impacts of WASH assets and activities on health and nutrition outcomes among the DRP, as well as HC members.

3.1.3 Nutrition and Food Security

In the camps, food delivery is overwhelmingly supported by humanitarian aid, and the pre-dominant modality of delivery is through an e-voucher modality. Current data, particularly from the Cox's Bazar Panel Survey (World Bank 2019), shows that overall consumption patterns for both hosts and displaced Rohingya indicate broad access to a range of basic food groups, and higher than minimum-requirement levels of caloric intake per capita per day. The only comparative evidence on HC nutrition, other than the CBPS (World Bank 2019), comes from the first two rounds of the Refugee Influx Emergency Vulnerability Assessment study carried out by the WFP in 2017 and 2018, stating that the proportion of the host community members reporting acceptable diet remained consistent over time (70 percent).

At the beginning at the influx, however, WFP and the Food Security Sector partners (2017) found that, on average, DRP men and women skipped up to two meals a week. The proportion of DRPs reporting acceptable diet dropped from 67 percent in 2017 to 56 percent in 2018 (measured using self-reported data). However, it was noted in the report that the drop may have been by sampling decisions to include older unregistered DRPs,

along with small-sized households, female-headed households, large households with a high dependency ratio, and new arrivals; these groups were said to have the highest rates of poor and borderline food consumption.

Early in the response, substantial numbers of DRP were borrowing food from friends and neighbors, especially large households whose rations were being stretched further. OXFAM (2017) noted that, other than NGO distributions, 18 percent of households identified food assistance from friends/relatives as a top-three food source. In addition, 59% of households identified borrowing/taking food on credit as one of their top-four food sources, with over one-third claiming this as their third-most-common option, after NGO support and market purchase.

With the introduction and expansion of e-voucher programs by WFP and other organizations, studies show that nutritional status, particularly among Rohingya children, has improved, in comparison to the early days of the influx. A recent study by Hoddinott et al. (2020) showed how the receipt of electronic vouchers (e-vouchers) versus food rations impacted the nutritional status of Rohingya children. The receipt of e-vouchers instead of food rations was linked with the linear growth of children between the ages of 6 and 23 months. This was because it allowed the households the flexibility of purchasing items beyond what was provided by the humanitarian organizations, allowing for dietary diversity and better nutritional uptake. Improvement on nutritional status due to use of the e-voucher modality was also confirmed by CBPS, where DRP consumed 10 out of the 12 basic food groups in the week (similarly reported among HC), thanks to greater access to a wide range of food groups, thus diversifying their nutritional basket.

Three years into the crisis, factors linked with WASH are observed to be strongly correlated with outcomes related to malnutrition, as well as the lack of access to firewood that DRPs use to cook. WFP (2019a) reports that many DRPs responded to a shortage of firewood by not consuming food that requires more fuel; consuming undercooked food; or avoiding meals altogether. However, further evidence on the lack of access to firewood and correlation to malnutrition is required for both DRP and HC populations.

Child nutrition

Poor household food consumption can adversely affect children's nutritional outcomes. MICS data shows that, nationally, 34 percent of Bangladeshi children aged 6-23 months receive the recommended minimum diet diversity, and 27 percent have a minimum acceptable diet. This indicates a poor transition from breastfeeding to a healthy diet, which places children at risk for stunting, wasting, and other malnutrition-related illnesses.

Findings from the MICS also show low national rates of early initiation of breastfeeding (47 percent). Among the DRP in CXB, Azad et al. (2019) report that the proportion of children who were breastfed within one hour of birth was comparable to that of the host

community. Burell et al. (2020) studied Save the Children's experiences with supporting wet nursing, relactation, and artificial feeding for non-breastfed infants under six months in the context of the DRP response. They reported that wet nursing was successful in only 40 percent of cases. Moreover, they found gaps in operational guidance to support non-breastfed infants with wet nursing and relactation in emergency settings. Sarker et al. (2020) studied challenges facing the implementation of maternal and neonatal health programs in the Rohingya camps. Some of the critical bottlenecks hampering effective implementation involved poor staff retention, overlapping services, weak referral systems, a complex health information system, and lack of security.

A large proportion of both Rohingya and HC children aged 6 to 59 months are stunted. This proportion reached about one-third in 2018, according to WFP. Stunting is also noted as the most common form of malnutrition among children in Bangladesh. Nearly a quarter (23%) of children under five years of age are underweight for their age, which means they are suffering from a composite form of undernutrition that can include elements of stunting and wasting (MICS 2019). Data from the MICS in Chittagong shows 27 percent of children are moderately to severely stunted, and 12 percent are moderately to severely wasted.

Regarding nutrition for DRP children, most parents did not know that there is a system to monitor children's nutritional intake and growth development (Abdullah et al. 2018). Parents were mainly aware of illnesses among their children, but most thought that monitoring growth is not required and not important. Using three rounds of population-representative cluster surveys, Leidman et al. (2020) report that, in combination with poor literacy regarding nutrition among DRP, poor dietary diversity is generally also the result of lack of food, particularly after the monsoon season. The study noted that DRP receive fortified blended biscuits containing micronutrients during post-monsoon seasons, when aid groups substantially increase their distribution of this product. However, the authors do not cite evidence of measurable benefits from this intervention for children's nutritional status.

Several studies have been designed to better understand the current state of nutrition services in the DRP response and identify effective service-delivery mechanisms. However, despite improvements over time, malnutrition remains acute. Given the challenges associated with malnutrition, humanitarian agencies have scaled up their efforts. However, the results have not been as satisfactory. While the evidence provided is credible, more studies focused on identifying critical program-level bottlenecks need to be conducted, along with investigations into social and cultural norms that might be hindering the effectiveness of some programs. Currently, food rations and e-vouchers are used to distribute food aid, and recent evidence has suggested a beneficial effect of e-vouchers on the growth of infants aged 6-23 months. However, more consistent data is required to understand the causal links (if any), whereby e-vouchers outperform food rations in impacting nutrition. Communication strategies used to reach mothers and their families with information on appropriate IYCF need to be assessed to understand if current approaches require adjustment, especially from a cultural perspective. The attitude of men

towards the health and nutrition of their children and partners need to be understood to include them appropriately in discussions surrounding the overall nutrition of the household. Further evidence in these areas can help provide a consistent picture to draw more concrete conclusions about the status of nutrition and food security among DRP and host community members.

3.1.4 Sexual and Reproductive Health

In the context of humanitarian crises, the sexual and reproductive health (SRH) needs of displaced people are often under-prioritized in favor of emergency services or other concerns deemed more essential. Prior to their arrival in Bangladesh, the majority of DRP women and girls were subject to sexual violence in Myanmar (Ahmed & Hasan-ul-Bari 2018). It was reported that an estimated 40,000 of the newly arrived Rohingya women and girls were pregnant, resulting from what the UN authorities believed was mass sexual violence and rape they faced in Myanmar (UN News 2017). Ensuring emergency obstetric services in the camps is essential to prevent maternal morbidity and mortality.¹¹

Maternal and child health and family planning

Aiming to reduce maternal mortality, a Minimum Initial Service Package (MISP) health intervention led by UNFPA was planned to be implemented in the camps (UN News 2017). However, at the time the article was written, multiple constraints still limited women's access to reproductive health services, including facility-based births. While there was one facility offering comprehensive emergency obstetric and newborn care inside the camp, it was not open 24 hours a day. Women often had to go through multiple steps to access adequate care. This might include first making their way to a clinic, then finding an ambulance, then arriving at a hospital. Multiple referrals were also found to be the norm, sometimes resulting in hours of delay before a woman arrived at a facility capable of managing an obstetric complication. On a similar note, no standardized emergency transport protocols existed in the camps. Challenges with availability of supplies and appropriate medical staff have been noted in some facilities, limiting provision of care when women arrived at health facilities (Parmar et al. 2019). These findings were further corroborated in a qualitative study among midwives in Cox's Bazar (Rani and Basri 2018).

In Myanmar, the Rohingya faced repressive restrictions, including limitations on the number of children they were allowed to conceive. Homebirths were commonplace, so that parents would not be reported and penalized; the practice of homebirths is still continued in the camps (Parmar et al. 2019). A recent review by Sarker et al. (2020) further confirms this, stating that only 1 in 5 pregnant mothers sought delivery care from the

¹¹ A review examining maternal mortality among DRP stated that in the first year of the influx, (between September 2017 and August 2018), 52 out of 82 pregnancy-related deaths within the camps were maternal deaths (Parmar, et al. 2019).

health facilities in the camps for varying reasons, including prohibition from the family and distrust of facility-based services.

Evidence suggests that birth rates among the Rohingya are significantly high, due to high rates of child marriage and limited contraceptive use (Aniul et al. 2018). Child marriage is very common among Rohingya, leading to a higher number of births over the lifetime. A large number of Rohingya respondents also reported believing that Islam prohibits the use of contraception as it may encourage immoral behavior. Similarly, children are considered to be economic assets and there is a general preference for large family sizes.

SRH knowledge among DRP and HC

SRH knowledge like family planning and STI prevention among Rohingya is very low, due to strict religious and cultural norms. A common misperception identified among the Rohingya is that contraception use may cause infertility and even death. Respondents also reported that husbands and mothers-in-law are the two most important actors in decision-making regarding contraceptive use and reproductive health service seeking behavior for women and girls. Knowledge about STI and HIV was limited among the respondents, and misinformation about HIV transmission mechanisms was also prevalent (Ainul et al. 2018). However, the study does not specify more data regarding adolescent birth rates, beyond the qualitative data showing high rates of child marriage, limited use of contraceptives, and high birth rates in the camps.

Adolescent and unmarried Rohingya and HC girls are the least likely to have access to SRH knowledge and services. Generally, MICS data shows Bangladesh's adolescent birth rate (among women aged 15-19) to be 83 percent nationally and 82 percent in Chittagong. Since this data only concerned married adolescents, it further implies that a large proportion of the women who participated in the MICS were married early, between the ages of 15 and 17. This is further confirmed by data from BDHS (2018); the legal age of marriage for women in Bangladesh is 18, but a large proportion of marriages still take place before the woman reaches her legal age. BDHS found that 59% of women age 20–24 were married before age 18. Complications related to pregnancy and childbirth are among the leading causes of death worldwide for adolescent girls age 15 to 19. Preventing adolescent pregnancy not only improves the health of adolescent girls, but also provides them with opportunities to continue their education, preparing them for jobs and livelihoods, increasing their self-esteem and giving them more say in decisions that affect their lives. Yet, too often, adolescent girls lack access to appropriate sexual and reproductive health services, including modern methods of contraception (MICS 2019).

Evidence suggest that Rohingya girls reported acquiring SRH information (e.g. puberty, menstrual hygiene, etc.) primarily from their mothers, elder sisters or close friends. Secondary and intermittent sources include a few NGOs working on in the camps to provide SRH knowledge to Rohingya girls through their health workers and educators

(Guglielmi, Muz, et al. 2020). While many NGOs are tasked with distributing hygiene kits (soap and sanitary pads), many respondents reported irregular distribution of these products. Some girls reported receiving them, while many had not received anything in the preceding eight to nine months. This suggests a crisis in the supply of such materials, further corroborated by other sources (Rani and Basri 2018; Parmar et al. 2019).

Prior to their displacement, most female Rohingya reported using pieces of cloth to manage their periods, but since arriving in Bangladesh, they have access to a greater variety of menstrual hygiene materials via aid distributions—often for the first time (REACH 2019). Participants in a survey by REACH expressed a preference for reusable pads. However, not all women reported knowing how to properly use all distributed materials. Further, distribution of preferred materials is reportedly not always consistent or timely, and women do not always have the resources available to access materials independently (WASH Sector, UNICEF and REACH 2019). Furthermore, the GAGE and ODI report quoted an NGO worker who explained that a major shortcoming in provision of SRH information for adolescents is that they are only given a “little idea about contraception, not in detail.” This places them at further risk of failing to avail the right services at the right time, with potentially serious consequences.

There is still a lack of data on HC around SRHR, and national data like the MICS presents information that refers only to married women (aged 15-49 years). Questions regarding fertility and family planning were not asked to unmarried women aged 15-49 years. Overall, the evidence on sexual reproductive health lacks consistency as there are a few major gaps identified in the literature. There is a lack of credible reporting around the number of Rohingya women and girls having experienced rape and sexual abuse in Myanmar or Bangladesh. Till date the actual numbers are unknown, however it is thought to be high because as with other humanitarian crises, it is known that women and girls are at an increased risk of sexual and gender-based violence, sexually transmitted infections (STIs) including HIV, unintended pregnancy, and maternal death and illness. In general, more examination is required of not only those who faced major sexual violence but also surveillance of STIs in the camps and potential spill-over effects into the HC. Furthermore, since it is reported that the use of contraception is limited among Rohingya, it could be a major contributing factor to prevalence of STIs and HIV in the camps. Concrete conclusions cannot be drawn until more credible evidence is obtained to demonstrate a consistent picture in terms of sexual reproductive health of the DRP as well as host community members.

3.1.5 Mental Health

The crisis for the Rohingya began much earlier than the time of the displacement, as news events and historical evidence suggest they have been facing persecution, violence, and forced displacement since 1977 (Human Rights Watch 2000). The events escalated in August 2017, when the Myanmar military employed a massive offensive strategy intending to remove the Rohingyas from the state of Rakhine. The byproducts of the offensive included massacres

and killings, village looting, and sexual violence. The widespread physical, mental, and sexual violence that the Rohingya population was exposed to as a result of the military offensive led to the mass exodus of Rohingyas from Myanmar to Bangladesh. In Bangladesh, the Rohingya camps were established rapidly and in an unplanned manner, and the DRPs faced day-to-day challenges ranging from securing a living space to meeting basic needs, limited privacy, lack of security, and scant employment opportunities. This has resulted in immense mental pressures and trauma that the DRPs must endure every day.

DRP psychosocial wellbeing

Living in conflict-torn and dire situations, evidence points to the psychosocial wellbeing of Rohingya as poor. As a baseline, the IOM (2018b) carried out an assessment of camp residents to evaluate the status of their mental health and psychosocial wellbeing. Across all age groups, a high proportion of the DRPs reported feelings of sadness (47 percent), anxiety (29 percent), grief (27 percent), stress (21 percent), and fear (six percent). The respondents reported having sleeping problems due to repressed memories of the violent displacement and highlighted the heightened state of stress in the camps. Moreover, concerns about future uncertainty and wellbeing were also instrumental. For instance, children reported being unable to concentrate in school; some of the participants were symptomatic of somatic pains such as sore muscles and headaches. The report suggests that the key factors driving the reported feelings are lack of basic needs, loss of a family member, a previous life-threatening experience, identity crisis, poor health, lack of mobility and protection.

Relative to unmarried older girls, married girls are 150 percent more likely to report feeling psychological distress (Guglielmi, Jones, Muz, Mitu, et al. 2020). This may be, to some extent driven by “deeply entrenched social norms”, where the husband does not acknowledge the wife’s needs or the needs of the children. At the community level, there is a strong prevalence of generalized fear brought on by the interaction of cumulative identity crisis, mobility restrictions and economic constraints (Guglielmi, Muz, Mitu, Uddin et al. 2020).

HC psychosocial wellbeing

MICS data suggests that, across Bangladesh, adolescents are exposed to high levels of physical and emotional violence. These conditions are also likely to exist in CXB host communities. About 22 percent of children aged 10-14 years under the survey experienced severe physical punishment, 84 percent experienced physical aggression, and 86 percent were exposed to some form of violent discipline. For instance, of the 15,000 children under the survey in Chittagong (age 1-14 years), almost 91 percent said they experienced violent discipline methods (MICS 2019). Thus, much work remains to be done to protect children from physical and emotional violence, which has the harmful consequence that carries forward into adult life. However, regarding evidence on mental health interventions, though there is some literature, it is focused primarily on programs

that are DRP-centric and are not expansive. While necessary for all, mental health-related programs are particularly relevant for maternal mental health outcomes and linked to child survival and deaths, particularly with the backdrop of physical and sexual violence faced by many women (Corna et al. 2019).

The current state of knowledge on the mental health of the DRP is extremely limited, and corresponding data on host community members was unavailable. While interventions for psychosocial support and counselling are reported as available for DRP, half of respondents in a study by Corna et al. (2020) reported not being aware of any mental health support services. Those who were able to access such services reported a positive impact on overall mental wellbeing. While some national data from the MICS and ODIGAGE shows very poor mental health among Bangladeshi youth, no regionally specific data could be found on HC populations and their psychological well-being. Concrete conclusions cannot be drawn on these topics till more comprehensive and credible data emerges regarding these populations.

3.1.6 Other Topics in Health

While evidence gaps persist concerning numerous health topics among DRP and HC, recent publications discussed two in particular, as areas where the current health response needs to be substantially reinforced – eye health and palliative care. Suffering from a range of serious illnesses continue to go unchecked in the context of the crisis.

Eye health

Studies found common eye ailments like blindness and cataracts among DRP. Assessing prevalence of eye problems among Rohingya children, a cross-sectional survey found that the most common eye-related ailments among infants were watering from the eye (14.8 percent), followed by visual inattention (5.1 percent) (Hussain et al. 2020). Another report found that the prevalence of blindness was higher among Rohingya than hosts by 3 to 6-fold in each 10-year age cohort between 18 and 59 years of age. Cataract surgery requirements were also higher for the Rohingya population (4.67 percent) than the host population (1.8 percent) (M. Ahmed et al. 2020).

Palliative care

A high proportion of ill individuals requiring palliative care reported that effective pain treatment was not available in camps. In addition, 60 percent of respondents said they were forced to stop taking medication or access medical supplies due to the high cost (Doherty et al. 2020). Earlier, a 2018 study carried out by Doherty and Khan for Ukhiya camp had established that the available health infrastructure did not cater for palliative care at all, even at the host community level. It seems that this remains true in the findings from Doherty et al. in 2020.

The common thread found in these studies is a major gap in treatment, surgeries, or even access to trained caregivers for such illnesses. However, there is some evidence to suggest that addressing such health problems can improve the resilience of displaced communities (IFRC 2017). In terms of eye health, recently collected evidence indicates a sizeable burden of vision impairment among adults and children in the camps and the surrounding areas where the host population resides. Simultaneously, the lack of attention placed on issues like eye health or palliative care must be further examined, to identify and overcome the main barriers to provision of these pertinent services. Large studies need to be designed to document the scale of these health problems. Studies are particularly needed that may reveal causal linkages between improvements in these health domains and overall population resiliency.

3.2 Disability Inclusion

There is a lack of analytical evidence on disability inclusion, both in the camps and the host community, beyond the provision of WASH facilities. This emphasizes the general lack of disability-friendly policies and programs across both populations. Globally, a little more than one percent of the billion people with disabilities are forcibly displaced as a result of persecution, conflict and human-rights violations annually (UNICEF 2018b). In crisis-affected communities, persons with disabilities are often the most marginalized and continue to represent cohorts with mortality rates between two to four times higher than others (UNICEF 2018b). The UN Convention on the Rights of Persons with Disabilities requires all humanitarian assistance and protection efforts to follow a rights-based and participatory approach in their policies and programming to ensure inclusivity of the disabled. Contrary to the Convention, however, evidence suggests that humanitarian aid organizations are not yet sufficiently inclusive of the disabled, resulting in preclusion from access to essential services (UNICEF 2018b).

Disability among DRP

The evidence under this theme did not provide any data on persons with disability in the host community, and studies were focused exclusively on the DRP. The German organization Arbeiter-Samariter-Bund (ASB) and the local NGO Center for Disability in Development (ASB 2017) carried out an assessment to investigate whether existing humanitarian programs were inclusive of the disabled. Authors first highlighted that humanitarian organizations have generally been unable to accurately collect information on the prevalence of persons with disabilities disaggregated by gender and age as recommended in the Humanitarian Action Minimum Standards. Despite this non-compliance with measurement protocol standards set for such situations, the report suggests that the proportion of disabled persons in the DRP population may be between three and four percent.

Evidence shows disabled persons among DRP are still facing challenges to access basic services in the camps, including appropriate healthcare facilities. The ASB study revealed that all 27 of the elderly and persons with disabilities interviewed lacked access to specialized health services, including assistive medical devices, and in fact were unaware of their existence. None of the respondents requiring accessible toilets were able to avail the facilities, especially considering most facilities available were located some distance away from living areas. All disabled individuals who appeared in the interviews were reliant on their family members to acquire food and non-food items and, in most cases, support them with their basic needs such as going to the toilet and bathing. The report also highlighted the need for culturally appropriate and accessible psychosocial support services to address the trauma endured.

Access to disability-friendly WASH facilities including drinking water, bathing, and latrines poses barriers for DRP. A subsequent study conducted by REACH Initiative (2019a) focused on how effectively persons with disabilities living in the Rohingya camps were able to access education and WASH facilities. In addition, reporting a prevalence rate of between 5 and 14 percent of households having at least one disabled member, the study concludes that individuals with disabilities faced difficulties accessing all WASH-related services, from water points and latrines to bathing facilities. Additional challenges for those who were able to access the facilities included long waiting times in lines, long distances and difficult terrain.

Children with disabilities may face major challenges living in the camps and are more likely to fall behind on education. In education, children in the three to five and five to 14-year age groups with functional difficulties attended learning centers with much less frequency than their peers, irrespective of reported ability levels. The issue was found to be most acute for children aged from three to five years. Parents highlighted issues such as bullying at learning centers as an additional hinderance to education. Only 26 percent of staff surveyed at learning centers during this assessment reported receiving training on supporting children with disabilities, and only 14 percent of assessed facilities were wheelchair accessible.

Evidence on disability inclusion is limited to these two studies. The data provided is not consistent enough to draw concrete conclusions. This also emphasizes the general lack of disability-friendly services and disability inclusion in ongoing humanitarian programs. This includes key domains such as education and WASH services in the camps; little improvement appears to have been achieved between the first study, conducted in 2017, and the second in 2019. However, the more recent assessment can provide an estimate of disability prevalence. Larger-scale studies must be undertaken using appropriate data collection methods and measures based on other country models or international standards. More needs assessments and analysis can also help inform effective implementation of humanitarian programs beyond just education and WASH.

The general absence of evidence on this theme also shows the need to examine areas like livelihood development and mental health of persons with disability living in Rohingya camps. Additional research is required to inform programmatic decisions to increase the regularity of support, introduce more targeted and/or expansive services, or enable community-centered approaches. The intersectionality of gender and disability must also be examined more to ensure inclusive programming particularly with regards to dignified access to key facilities. In addition, data aggregated by age groups, particularly in the case of children with disabilities and special needs (e.g. cognitive disabilities), needs to be collected to effectively inform early child development and education programs in the camps.

3.3 Gender-Based Needs

Evidence on gender-based needs is tilted heavily towards DRP populations, with scant research to date among HC. Host women and girls also face high risks associated with gender-based violence (GBV), and many lack agency due to rigid social and religious norms. Far more emphasis is placed on the need for justice mechanisms and increased leadership for Rohingya women and girls in order to decrease their vulnerability to being further marginalized in their current situation. Women and girls, who make up nearly half the global population of forcibly displaced people, are almost always differently and disproportionately affected by situations of violent conflict, like the one faced by the DRP in Myanmar (UN Women 2015).

Many women and girls in times of crisis endure extreme hardships as a result of pre-existing gender inequality and discrimination. This includes increased insecurity, restricted mobility, sexual exploitation and abuse, and gender-based violence (GBV). Thus, humanitarian programming needs to be based on accurate understandings of how gender and other inequalities affect women's and girls' daily lives and their status in the community (Lafrenière, Sweetman and Thylin 2019). Rohingya women and girls arriving from Myanmar have already been traumatized, with many having endured sexual violence and extreme brutality. More than half of the DRPs in Cox's Bazar are women and girls who need reproductive health and other assistance after facing horrific sexual violence.

Gender-based vulnerabilities

It is critical to contextualize and understand the structural discrimination faced by Rohingya women in various aspects of the lives, wellbeing, and rights, from before leaving Myanmar up to their current situation, as part of a forcibly displaced population. To identify the grounds on which they are methodically discriminated against, authors Bentil and Adu (2020) applied intersectionality theory to the ordeal of Rohingya women in Rakhine State. The paper revealed multi-faceted structural discrimination embedded in social and cultural structures; religion and ethnicity (e.g., organized sexual violence); and legal,

political and economic structures. Thus, these structures or conditions exacerbate the burden of Rohingya women as well as children. While all Rohingya were faced with limitations such as restrictions on the number of children they were allowed to have and their choice of marriage partners, women faced the double burden of injustice from the state, as well as domination through cultural and religious norms (Bentil and Adu 2020). As a result, even after escaping from Myanmar, Rohingya women continue to be vulnerable in Bangladesh. Another report alleged that potential rising tensions between the Rohingya and the host community could disproportionately affect women and again make them vulnerable to brutal violence (UNDP and UN Women 2018; Karin, Chowdhury and Shamim 2020).

Lack of healthcare in camp settings particularly impacts DRP women. For example, with regard to the current novel coronavirus pandemic, a rapid gender analysis conducted by the ISCG Gender Hub (Toulemonde 2020) states that an outbreak in camps and host communities would disproportionately affect women, girls, and other vulnerable populations. Gender norms and roles in both DRP and host communities are likely to limit the ability of women and girls to protect themselves from the virus, and, if not adequately considered, these issues will have a significant impact on prevention and response efforts. Furthermore, the analysis found that special attention to reduce risks must be accorded to older women, women with existing medical conditions, and to pregnant women with a lower immunity status.

Evidence shows that Rohingya women are among the most vulnerable groups in the camp settings. A study by Nelson, Saade and Greenough (2020) aimed to create a gender-based vulnerability index and explore geospatial and thematic variations in gender-based vulnerability of Rohingya living in the camps. In the context of the Rohingya crisis, vulnerabilities include food insecurity, interpersonal violence, diseases, and natural hazards. But by using pre-existing and open source data, the authors found that security and health-related variables are the most significant drivers of gender-specific vulnerabilities as well as low security and low education.

The study sought to identify the DRP settlements where women and girls are regarded as most vulnerable, based on existing data from humanitarian agencies. It aimed to create a statistically-grounded, spatial understanding of gender-based vulnerability in the camps. It was found that, of the settlements, 24.1 percent were ranked as ‘most vulnerable,’ with 30 highly vulnerable clusters identified predominantly in the northwest region of metropolitan Cox’s Bazar. This finding shows that more relevant and better targeted program design and resource allocation may be required in these camps in order to reduce risks for women and girls that increase their vulnerability. For example, the study also noted a major lack of women-friendly spaces in DRP camps and so agencies can focus on providing these space in the camps ranked as most vulnerable. In addition, agencies who take a holistic approach to gender-focused aid can hone in on such gaps and a more composite vulnerability analysis, while researchers can utilize the outlier analysis of this gender-based vulnerability index for sampling purposes of future studies (Nelson, Saade and Greenough 2020).

3.3.1 Gender-based violence

Both DRP and HC girls and women are at high risk of facing gender-based violence (GBV) in the forms of physical and sexual violence like sexual harassment, assault, and even early child marriage. Incidence of these forms of GBV is reported to be high in both communities. GBV can cause physical, emotional, and mental injuries; unwanted pregnancies; and sexually transmitted diseases—all of which can have far reaching consequences. As previously noted, many Rohingya women and girls survived sexual and physical violence prior to fleeing Myanmar and remain vulnerable to violence in the camps. As many are reluctant to report such experiences, it is unclear exactly how many women and children were affected by this violence (Parmar et al. 2019). Even now, in the camps, it is reported that sexual harassment remains a significant risk for Rohingya girls and women (Guglielmi, Muz, Mitu, Uddin et al. 2020). Furthermore, Ahmed and Hasan-ul-Bari (2018) report that the relevant services needed to address GBV, such as clinical management of rape, prevention and management of sexually transmitted infections, post-menstrual regulation¹² care, and case management in the camps are inadequate.

Forms of GBV

In a study by Monash University, among Rohingya girls who reported physical violence and mistreatment, the majority of incidents occurred within the household. Approximately one in four adolescent girls aged between 10-14 (24 percent) and nearly one in ten adolescent girls aged 15-19 (nine per cent) reported being hit or beaten in the past month, with 87 per cent of those cases occurring in the home. For younger adolescent girls, nearly three-quarters of the perpetrators were their parents (at 74 per cent). In the case of older adolescent girls, the perpetrator was more likely to be either a current or ex-husband (Gordon, Jay and Lee-Koo 2018).

Early child marriage (ECM) is a common occurrence within the Rohingya community and often considered a form of gender-based violence. This is due to the fact that many parents feel ECM lowers the chances of their daughters' being subject to physical or sexual assault, despite overwhelming evidence suggesting otherwise (UNICEF 2018). Ainul et al. (2018) report that strict rules dampened the rates of ECM while the Rohingya were living in Myanmar. In the absence of such regulations and monitoring, ECM has increased significantly among this cohort. As a result, this form of gender-based violence in the camps can easily persist and continue to rise. This scenario does not vary significantly from the host population. Bangladesh has one of the world's highest rates of child marriage where over one-fifth of girls are married before the age of 15 while nearly 60 percent by 18 years (Ainul et al. 2018). In Chattogram, nearly a third of girls aged 15–19 are already married, typically

¹² Menstrual regulation (MR) is the procedure of regulating the menstrual cycle when menstruation is absent for a short duration up to 12 weeks (Rana et al. 2019).

to significantly older men in a different part of the country (Guglielmi, Jones, Muz, Mitu, et al. 2020). Despite the similarities, Melnikas et al. (2020) report that the HC participants perceived the presence of the Rohingya as encouraging both polygamy and child marriage in their communities, leading to tension among the two groups.

An ISCG (2017) report shared evidence of women and men resorting or coerced into negative coping mechanisms as a result of economic insecurity and lack of livelihood opportunities, including survival sex, human and drug trafficking, forced marriage, exploitative labor, among others. Findings by Aniul et al. (2018) suggest that there is a strong perception among the host that Rohingya girls are involved in transactional sex with Bangladeshi men in and around the camps. However, in the same study the majority responded that trafficking, forced/transactional sex are not prevalent in camps. Only a few mentioned that they had heard of such incidents happening in a different camp at the time of their arrival. Some exceptional cases were highlighted when asked about trafficking and transactional or forced sex (e.g. unknown men asking parents to “sell their daughters”) – but they reported these instances to be mostly occurring at the onset of the crisis and may have reduced over time due to increased security measures in the camps.¹³

In a setting of political uncertainty and lack of protection, violence and abuse of the most vulnerable groups, including women and children, are more likely to continue. Without addressing the underlying human right issues and statelessness of the Rohingya, it may be impossible to fully manage the sexual reproductive and health rights-related needs of this traumatized group and integrate them into the larger society of Bangladesh. It is therefore critical to further examine instances of GBV in the camps. However the evidence examined in this report does not provide enough credible evidence to illustrate a consistent picture regarding issues of gender-based violence, particularly the number of GBV incidences before the influx from Myanmar as well as any reports of GBV in the camps. While the studies examined suggest that there is clearly an issue of GBV within the DRP community, along with the violence faced by DRP women in Myanmar, there remains a lack of credible numbers that can allow for concrete conclusions to be made.

3.3.2 Women’s Leadership in the DRP context

Gendered social norms still affect both HC and Rohingya women’s and girls’ ability to make decisions, to propose solutions, and to lead – constraining women’s lives and choices. In addition, they also hamper the ability of households and wider communities to recover from crisis. It is therefore critical that gender equality programming and encouragement of women’s leadership be integrated to generate a more holistic humanitarian response.

¹³ In contrast to this perception, the news network Al Jazeera recently reported the rescue of 23 Rohingya girls who were being trafficked to Malaysia from Bangladesh, a small proportion of the total, as reported by aid workers (Al Jazeera, 2019).

Inclusive local leadership

Research shows that when women are involved in leadership roles in prevention and crisis response, it leads to better humanitarian outcomes and lowers risks (UN Women 2015). A study from Bangladesh shows women's participation can have positive effects on the quality of local government, which has been apparent over the last decade where a legitimate space in rural political institutions have been acquired by women, although they still have low political status as compared to men (Huq 2016).

Women's leadership is even less prevalent among the DRP; evidence shows that a strict arrangement known as the 'majhi system'¹⁴ is detracting from gender equity or equality. As a result, women are not typically represented in local community decision making positions. Examining the response to the Rohingya crisis using data from 2017-2018, Zakaria and Zulkafli (2020) argued that, in the long term, Rohingya women must be supported to develop knowledge and skills that will equip them for greater self-reliance. This way, Rohingya women will eventually be able to contribute to protecting and developing their community.

Under current community leadership arrangements, majhis are tasked to reinforce the existing strict cultural practices and judgements, thereby restricting women from venturing outside traditional cultural norms (Protection Sector Working Group 2018). In response to calls to abolish the system, UNHCR is leading a community governance pilot scheme that intends to replace the majhi system and bring more representative leadership to Bangladesh's camps through elections. The camp election scheme stipulates that a minimum number of committee leaders must be of either gender – a quota ensuring that Rohingya women acquire the opportunity to lead. Since the two elections held in the two different camps in July 2019, no further elections have been reported being held in other camps yet. These elections however have had positive results; 44 per cent of elected committee members were reported to be women in the Nayapara camp (Hölzl 2019).

¹⁴ The current so called 'majhi system' was established by the Bangladesh authorities as an emergency response arrangement upon the sudden influx of a large number of refugees in August 2017, primarily for: estimating the population; identifying immediate survival needs; and linking the Rohingya refugees with emergency assistance from various providers. The system was not established with the participation of the Rohingya communities and consequently lacks any representation and accountability to the refugees. In the majority of cases, majhis were in fact appointed by the Bangladesh army. Majhis are not traditional leaders or elders nor necessarily respected members of the community. Majhis are almost exclusively middle-aged men. Moreover, local experiences confirm that it is an unreliable system for distributions of humanitarian aid, as it does not reflect the needs and respect the minimum humanitarian standards, in terms of representation, impartiality, transparency and accountability. As such, it cannot be considered as representative of all refugee's views and interests nor justified beyond the immediate aftermath of the emergency influx (Protection Sector Working Group Cox's Bazar, 2018).

With regards to women's participation in the elections, the Gender in Humanitarian Action Working Group Women's Leadership Task Force (2019) showed that gender stereotyping remains heavily evident due to socio-cultural norms. Women's concerns are not adequately met in camps while becoming a female leader poses considerable challenges. However, women vocalized the need for more women's participation in leadership roles to build lines of communication and address GBV. Motivating women to participate in the elections in the backdrop of traditional cultural norms can also pose a challenge. While financial incentives appeared to serve as an incentive of some, many reports being driven by the intrinsic desire to serve their communities. The brief however highlights that have never had experienced elections themselves (particularly the women), voters can benefit from some education and knowledge on election processes throughout the camps.

Evidence suggests that women's organizations, particularly local groups, are often best placed to respond to humanitarian emergencies. This is largely driven by their local knowledge, trust of the communities and have a good understanding of women's and girls' gender-based needs – a frequently cited shortcoming of traditional humanitarian approaches (Jayasinghe et al. 2020). However, the report goes on to show that engagement of women and women's organizations in the Rohingya crisis are limited. Of those that are working in the area, they mostly focus on service delivery rather than strategic gender justice programming. For example, women's organizations such as Rohingya Women Welfare Society and Aparajeyo Bangladesh provide GBV focused services to Rohingya communities, but because gender-based violence programming is not seen as a life-saving intervention, this work has been receiving limited funding and attention required to carrying out the work.

Overall, addressing gender-based violence in life-saving programming can widen the space for women's organizations with the requisite expertise to respond more actively to the Rohingya crisis. Program responses must account for the levels of emotional and physical trauma, particularly sexual violence related trauma, that many adolescent girls are experiencing. More credible evidence on this matter and attention and visibility need to be provided to women and women's organizations operating in humanitarian crises, particularly in the Rohingya crisis response, in order to better illustrate their leadership and demonstrate the importance of their involvement in the humanitarian system; this is also presented as a method of mitigated instances of GBV. However, the possibilities of justice mechanisms for Rohingya women and girls require further exploration, as there are still gaps in the literature regarding such solutions in the camps and even in the host communities. Further surveillance is required to examine instance of human trafficking, which currently is only mentioned in news reports but rarely discussed in documents from official humanitarian agencies working on the ground. Documentation of the allegations of harms suffered by Rohingya communities before the influx and during migration is still lacking, and therefore concrete conclusions about the situation cannot be made.

3.4 Economic Welfare and Local Impacts of the influx

Cox's Bazar may be characterized as a lagging district in terms of its lack of access to growth poles and reliance on low productivity agriculture and services jobs.¹⁵ However, there is evidence that the district has experienced an aggregate increase in economic activity since the DRP influx, as proxied by night time lights intensity changes. Most HC report being employed in small-scale, low productivity or informal work in agriculture or services. DRP are expected to work only within the camps as per national policies, primarily in the form of aid-supported paid volunteer opportunities. Despite these restrictions on work for the DRP, and the evidence on positive aggregate growth effects of the influx on the district as a whole (World Bank, 2021 forthcoming), the size of the influx in the upazilas of Teknaf and Ukhiya may have increased competition in local labor markets, creating winners and losers. This remains a major evidence gap. More evidence is required to understand how the presence of humanitarian aid (which supports the majority of DRP) is in turn affecting the HC in terms of job creation, market prices, and other economic development indicators.

While poverty in the Cox's Bazar district is below the national average (16.6 versus 24.3 percent) (BBS 2017), poverty rates outside the district capital, particularly in the Teknaf and Ukhiya upazilas are significantly higher. These upazilas have also been powerfully affected in demographic terms by the 2017 Rohingya arrival. The size of the influx was nearly twice the local population at the time (Bhatia et al. 2018).¹⁶ To assess the socio-economic implications, the Cox's Bazar Panel Survey was launched by the World Bank in 2019 to gather information representative of both the host and Rohingya populations. The survey further divided the host population into two subgroups: communities living close to the DRP camps and those living farther away (high- and low-exposure host communities), as the effects of the influx are likely to vary between the two groups.¹⁷ For example, hosts living closer to camps may be more likely to compete with the Rohingya in markets for natural resources like land and fuelwood, labor and goods, compared to those living further from camps (World Bank 2019a). However, the absence of comparable data pre-influx limits the ability to use these data to assess the local impacts of the DRP influx. On the

¹⁵ Adequate data for sub-national estimates of economic growth and output are not available in Bangladesh. Proxy indicators, examined in the World Bank's Cox's Bazar Inclusive Growth Diagnostic (2021, forthcoming), suggest that the district's economic contribution is not directly commensurate to its population. Using night time lights as a proxy for economic activity, Cox's Bazar is a handful of districts which has shown an improvement in economic activity.

¹⁶ The small area poverty estimates for Teknaf and Ukhiya sub-district, where the bulk of the DRPs are located, is 40 and 30 percent respectively.

¹⁷ The sample frame of the CBPS for host communities came from the 2011 census. From these two sampling frames, two survey strata were defined: (i) Host communities with high exposure (HE), and (ii) Host communities with low exposure (LE). The baseline distinguished between host communities as more or less affected by the arrival of these Rohingya, presenting them as HC with potentially high exposure or low exposure to the displaced Rohingya. It stated that implications of the influx on HC will depend on their proximity to the camps.

other hand, the 2013 Economic Census provides an outdated base against which to assess changes in the local economic structure.

Labor market access and labor force participation

Agriculture was a key employment sector in CXB before the Rohingya influx and remains crucial for the district economy today. According to the 2011 Population Census, 50 percent of households in Cox's Bazar reported agriculture as their main sector of employment, followed by 43 percent in services and 7 percent in industry.¹⁸ A third of households surveyed relied on agricultural labor as their main source of income, further highlighting the relative importance of the agricultural sector for employment and incomes in CXB, prior to the Rohingya influx. Reports from the 2019 agricultural census estimated that 41 percent of CXB households were still farming households, confirming agriculture's persistence as an economic mainstay. However, with regard to market access for farmers, only 64 percent of farm households in Cox's Bazar sell their products in the local bazar, compared with national and division averages of 85 and 77 percent, respectively (World Bank 2020c). Factors like current farming practices and technology and lack of infrastructure (e.g., roads to access bazaars) must be further examined, as these may constitute barriers for local farmers to sell more of their produce.

Host communities continue to rely heavily on agriculture for employment and livelihoods after the Rohingya influx (World Bank, 2019e). About 95.3 percent of hosts are engaged in income-generating activities, whereby 41 percent of hosts in high exposure (HE) areas rely on agriculture for their livelihoods, compared to 30 percent for hosts in low exposure (LE) areas. Two out of three working women in HE areas report agriculture as their primary source of income (World Bank 2019e). Ownership of productive assets among HC households (both high- and low-exposure) has remained broadly constant since 2017, while that of household assets has increased. A quarter of host households in HE areas reported owning no productive assets whatsoever, and this number increases to 37 percent in LE areas. These trends are largely driven by the greater reliance on agricultural work in HE areas compared to the demand for more wage-based work in LE areas.

DRP operate under severe labor restrictions and thus have low rates of participation in the labor force outside the camps. The majority of employed DRP are engaged in informal livelihood activities, primarily in camps (World Bank 2019e). In Myanmar, the Rohingya used to derive their incomes primarily from agriculture, fishing, small business, remittances, and low-skilled wage labor. A report by Save the Children et al. (2018) found that, post-influx, a high proportion of the Rohingya population became unemployed and fell below the poverty line. The proportion of the Rohingya population earning between BDT 10,000 and 25,000 per month decreased from a pre-influx level of 51 percent to 2.53

¹⁸ Of note, the district represented less than 1 percent of total Bangladeshi crop production in 2017 and around 7 percent of production in Chittagong division.

percent, driven mainly by movement restrictions requiring DRPs to live and work almost exclusively in camps. The CBPS shows that only 33 percent of Rohingya adults in the camps participate in the labor force, with women reporting a participation rate of just 9 percent. Employment is largely informal, with men employed in non-agricultural wage labor and women in self-run, small-scale agricultural activities (World Bank 2019e).

During the coronavirus pandemic, surveys show that rates of employment among DRP participating in the labor force have dropped from 64 percent in 2019 to 23 percent, while unemployment has increased sharply from 36 to 77 percent (World Bank 2020a). However, more than half of the working-age male camp respondents said they had not worked since January 2020, suggesting that this trend is likely driven by pre-COVID factors, such as the government directive circulated in September 2019 (post-baseline) banning cash-for-work programs in camps due to lockdown regulations further restricting movement in the camps in order to curb infections.¹⁹ Impacts of the humanitarian response in CXB on host community economic prospects include creating new local jobs (e.g., for translators, aid workers, transport workers, etc.). However, robust evidence on these patterns is lacking, and they need to be carefully studied.

Impact of humanitarian support on DRP consumption levels

The Refugee Influx Emergency Vulnerability Assessment (WFP 2019) estimated that at least 80 percent of the overall DRP population were almost entirely reliant on humanitarian assistance to meet essential needs. An assessment conducted a year later reported that economic vulnerability remained high among Rohingya refugees, with assistance as the primary source of mitigation. The issues remained most acute among old unregistered and new arrivals. The prevalence of vulnerability increased from 54 to 85 percent in situations where assistance was unavailable.

The available literature only provides snapshots of various programs initiated by humanitarian aid organizations, including initiatives like vouchers programs, but only related to child nutritional outcomes (e.g., Hoddinott et al. 2020). Thus, available articles do not provide a comprehensive overview of all the programs currently being implemented on the ground and their potential impacts for both the DRP and the HC. Notwithstanding, the World Bank CXB Inclusive Growth Diagnostic for instance suggests that WFP, OXFAM and other aid organizations had started voucher programs that allowed for more dietary diversity and more than 70 percent of the population had eventually transitioned to using vouchers. In addition, WFP introduced a farmer's market in select camps to provide more access to a greater variety of foods while allowing HC farmers to sell their produce (World Bank 2020c).

¹⁹ Before the cash-transfer ban instated by the government, wages received by Rohingya for their work came in the form of stipends through public works programs in the camps.

More recent evidence during the coronavirus pandemic indicates that food assistance in DRP camps has reverted to fixed-commodity vouchers instead of the previous voucher programs. About 96 percent of camp households reported receiving WFP food assistance in March 2020, but more than half reported receiving less food than usual from this assistance. However, this perception of “less food” than before is possibly driven by where a fixed basket of selected food items seems more restrictive. This is despite containing the same total monetary and caloric value of food received in the voucher-based modality which provides more diversity in food choices. In addition, host community reported receiving some assistance, coming mostly from the government, but in the form of basic food assistance as part of the coronavirus response (World Bank 2020b).

Although cash for work and other programs were said to have improved consumption patterns of DRP, it is vital to further examine the impacts of COVID-19 on both HC and DRP in terms of decline in work and income due to the subsequent lockdown. It was previously mentioned in the WFP Refugee Influx Emergency Vulnerability Assessment (2019) that lack of income could still drive sales of assistance to diversify their diets and meet other essential needs. Nearly half (41 percent) the DRP surveyed said they resold certain food items they received through assistance to diversify their diets and meet other needs such as healthcare (WFP 2019). But these sales were said to be generally insufficient in financing all needs. A third of households who reported selling their assistance had contracted loans to purchase to fill the gap, 80 percent of which on average is yet unpaid. However, there is no further evidence on the long-term impact of the cycle of indebtedness among the DRP as well as the HC.²⁰ The evidence also fails to address some other impacts of humanitarian aid, beyond the DRP, like for instance, creating jobs in the local economy. There is very little data available on how HC has been affected in terms of contributing on the ground, particularly to the humanitarian response. (e.g. aid workers, health workers, translators, etc.).

DRP and HC access to markets

While DRP mobility and employment is restricted to the camps, their participation as consumers is less limited, and evidence shows that a small percentage has access to markets outside their camps. An earlier market assessment study by WFP (2019) suggested that physical access to markets also underscored the discrepancies between the host community and Rohingya refugees. Just 39 percent of the refugee focus groups reported accessing two or more markets outside their camps, compared to 62 percent of the host community groups. As noted elsewhere, this results both from refugees’ physical location and GoB policy. Such is reflected in a subsequent assessment by WFP (2019), which found that food and other non-food items are widely resold by DRP in informal markets across the camps because it is the only source of income for many to purchase other essential needs

²⁰ Borrowing money also reported as common among host community members who also contract loans to access adequate food items.

for their family (e.g. medicine, treatments, fresh fish, chicken for having nutritious balance food etc.). Although there is a restriction of movements across camp sites and the interaction between the refugee and the host communities is officially limited, the literature suggests there is enough mobility between these two communities and that the humanitarian responses have spilled over into the market environments outside the camps (WFP, 2019).

At the same time, host community members are reported to shop at the informal markets inside the camps and transact with Rohingya traders. The assessment reported 34 percent of traders in the formal markets said they have Rohingyas as customers and 53 percent of traders in the informal markets reported to have local Bangladeshi customers (WFP, 2019). Evidence from a more recent article by Filipski et al. (2020)²¹ further confirms this in a survey of 326 businesses around DRP camps. Rohingya customers comprised 56 per cent of individual customers overall, but the share is much higher inside the camps (88 per cent) than in the vicinity (51 per cent) or further away (11 per cent). This also means that 12 per cent of customers inside the camp came from outside. While this percentage is small, it is noteworthy that the goods and services offered by camp businesses attract the patronage of those outside. Moreover, Filipski et al. provide further evidence that HC and DRP communities interact through transactions in local goods both inside and outside the camps; while DRP employment may be restricted to the boundaries of the camps, their purchasing power as customers is not (2020).

Some evidence points to Rohingya employment outside the camps, specifically among individual arriving before 2017; however, gaps remain due to lack of credible and up-to-date data. Save the Children et al. (2018) reports that Rohingyas are only allowed to move around in the settlement area, enforced by a check point near Teknaf. However, the report also goes on to refer to an example from a Situation Report by ILO from 2007 that suggests, before the 2017 influx, Bangladeshi contractors in CXB often preferred to employ Rohingyas in road construction, food distribution, and other sundry works, earning 50% less than their Bangladeshi counterparts. Therefore, the distinction must be made, that currently, while officially the DRP are not allowed to undertake employment activities outside the camps, this seems largely enforced for wage employment and not for informal enterprises such as those mentioned in the ILO report.

Generally, businesses closer in proximity to the camps or in them have shown to employ a mix of both Rohingya and Bangladeshi, however the ratio of the latter is typically less. Filipski et al. (2020) showed that businesses surveyed hired a mix of Bangladeshi and Rohingya workers. Less than half of the sampled enterprises (40 percent) hired additional labor. Of those who do hire labor, half hire at least some Rohingya workers, that is 22 percent of all enterprises. A higher share of enterprises in the vicinity of the camp hire

²¹ While this report was published after the date this systematic review was conducted, it is important to mention findings related to economic activities around the camps to give further context for the purpose of this report.

Rohingya workers (37 percent) compared to enterprises inside the camp (20 percent). This reflects the overall propensity of an enterprise to hire labor: those in the camp are smaller scale, family-run operations, much less likely to hire workers (24 percent versus 59 percent in the vicinity). Enterprises away from the camp are more likely to hire workers (41 percent) but understandably less likely to hire Rohingya (5 percent). Inside the camp, only 76 percent of hired workers are Rohingya. This suggests that the migrant influx and emerging economy are providing additional economic activities for the host community.

It was noted that host community members (including traders) often visit informal markets to purchase assistance items sold by Rohingya traders at a cheaper price than the market price in the formal markets, costing some shops to lose customers. About 88 percent of the traders interviewed by WFP (2019) replied that they had heard about the resale of assistance made by the Bangladeshi traders in the formal markets. When asked about their own experience, only 18 percent of them reported to have had Rohingyas attempting to resell at their shops.

However, HC shopkeepers did not reveal any significant pressure or fear of losing business from the potential competition posed by the much smaller Rohingya traders. When asked whether they have ever felt pressure to reduce the selling price to maintain their competitiveness to remain in the business, about 73 percent of HC traders replied that they have not. The assessment confirms that the functionality of marketplaces in Cox's Bazar is adequate since a great deal of the demand for the DRP is met by goods donated either with in-kind assistance or through e-voucher shops. Host community traders are highly agile in adapting their businesses, and there was no major issue reported in terms of availability of goods in the markets in either formal or informal markets (WFP 2019).

Furthermore, a working paper from the World Bank also states the refugee influx did not translate into significant price inflation, except for some specific goods with shallow supply chains. Data from CBMS (2018) indicates that price increases have not significantly affected DRP or hosts and only 3 percent of DRP and 15 percent HC living near camps reported being affected by high food prices (World Bank 2019c). But these estimates were made using price changes from before the coronavirus pandemic and subsequent national lockdown. Thus a gap remains in understanding the current situation and whether DRP labor and food markets are actually competing with HC market with lower wages and prices as previously mentioned by ILO (2007) and WFP (2019).

Cost of repatriation

While a rapid repatriation strategy remains the preferred GoB policy, diplomatic challenges of repatriation have proven insurmountable thus far. As a result, the crisis is progressing to a medium-term horizon and is likely to cost the GoB substantially in the coming years. Khatun and Kamruzzaman (2019) suggests that at the macro level, the financial burden on GoB of hosting the Rohingya population is also expected to increase as the

protracted crisis evolves. The authors projected that, assuming 300 DRP are repatriated every day starting January 2019, the cost for the whole period without incorporating population growth and inflation rates can take up to 11 years till all those accounted for in CXB can return to Myanmar; the cost of this was estimated to be up to \$6,348 million. Similar projections are carried out by UNDP (2018), indicating that as the length of the repatriation process increases the cost to support the refugees and hosts will increase substantially. According to this report, in the most optimistic scenario where at least 216,000 Rohingyas are repatriated each year, the cost of hosting refugees will be USD 3.2 billion until the repatriation process is completed. In the most pessimistic scenario where a bulk of these costs are borne by the humanitarian community and 24,000 refugees are repatriated each year, the cost will be approximately USD 11.6 billion over the duration.

Current gaps in understanding the economic and welfare landscape

While there is a growing body of work that focuses on understanding the economic impact of influx on both the Rohingya and host community, several gaps remain. Evidence highlights the importance of investing in the human capital of refugees in order to promote resilience and enhance integration into the local economy or promote reintegration into their own countries. Studies by Werker (2007) and more recently, Alloush et al. (2017) using case studies provide evidence that refugee camps are complex economic systems where along with aid, refugees derive income from agricultural production, wage, saving and remittances. A few studies that were simulations to measure the short-term impact of the influx on the labor market suggest declining wages in the host community, however this remains a knowledge gap; studies have not been undertaken to confirm whether there are significant impacts (e.g. labor market) besides the inflation reported in food and non-food items (UNDP 2018; World Bank 2019a).

The evidence presented in this report about economic development in CXB after the Rohingya influx does not provide a consistent picture of how humanitarian aid of this scale has a demand effect on the small, relatively isolated local economy. There are also major evidence gaps due to lack of representative data on numbers of DRPs who are able to access informal income generating activities outside the camps. While restrictions on their mobility are mentioned as a barrier to self-reliance and economic development among the DRP, there is anecdotal evidence of their participation in jobs outside the camps. The lack of comparable and sufficiently disaggregated data on the host community's labor market activities pre- and post- influx is a major constraint to assessing the impacts of the DRP and aid influx on the local economy. Beyond providing a boost to economic activity in the region in the aggregate, the presence of humanitarian workers and organizations in the district is likely to spur greater demand for housing, office space, transportation services, restaurants and hospitality services, and for local facilitation such as translation services (World Bank, 2021, forthcoming). However, there remains a large evidence gap in terms of identifying the winners and losers at the local level, given the substantial increase in population density due to the influx.

As the crisis evolves, it will become increasingly important to understand impediments to the DRP's income-generating pathways and potential. An enterprise survey is needed to understand how this aid influx has shaped changes in and perhaps increases in economic activity among the host community. There is also a need for more data to understand how humanitarian assistance reselling, for example, may be affecting or integrating the market ecosystem outside camps. Lastly, studies must investigate how the Rohingya can be directed to economic activities that are mutually beneficial for themselves and the broader economy – this not only has short-term economic benefits but also dissipate tensions between the DRPs and the hosts and will likely have longer-term returns.

3.5 Environmental Sustainability

Due to its geophysical and socioeconomic characteristics, Bangladesh, particularly Chittagong and CXB are particularly vulnerable to climate change. Annual monsoon floods typically inundate a fifth to a third of the country affecting both rural and urban areas. The coastal zone in particular is susceptible to flooding, as well as salinity intrusion, storm surges, and rapid geomorphological changes (Wright et al. 2019).

Potential environmental threats

In the absence of mitigating measures, physical deterioration of the surrounding environment takes place, in turn generating spillover effects on both the newcomers and the local population. Competition for natural resources such as fuelwood, building materials, fresh water and wild food further escalates the situation. The Rohingya camps in Cox's Bazar are situated near the protected areas of Teknaf Wildlife Sanctuary, Inani National Park and the Himchari National Park. These areas have already suffered severe environmental degradation due to the expansion of the camps. Further extension is likely to result in significant ecological impacts as forest and agricultural land is converted to establish housing, schools, water supply and sanitation facilities (UNDP and UN Women 2018).

Since the 1990s, Rohingya coming from Myanmar have required local natural resources to build make-shift homes and for firewood which has had a detrimental impact on the region's forests. Examining the environmental impact of Rohingya at a more micro lens, MZ Rahman (2018) conducted a mixed method study that focused primarily on the livelihood of undocumented Rohingyas who entered Bangladesh before the 2017 influx, and their impacts on the forest and other natural resources, including the Teknaf Wildlife Sanctuary. The report states that there have been multiple mass exoduses of Rohingya into Bangladesh, the first of which occurred in the 1990s and later again between 2007-2009. It was estimated that 200,000 unregistered Rohingya have settled among the local population in Teknaf, mostly in slums and villages throughout Cox's Bazar District, but also in smaller numbers in the Chittagong Hill Tracts. Living without the support of any humanitarian aid,

these groups were kept “invisible” and portrayed as economic migrants. In this study, both Rohingya populations, those living in the remote forests and local communities, have been included in the study to present a comprehensive picture of the possible impacts on the forest and other natural resources in Teknaf.

Firewood taken from nearby forests is the primary source of fuel for the DRP causing deforestation and subsequent erosions which can lead to deadly mudslides in the monsoon. The Safe Access to Fuel and Energy (SAFE) rapid assessment report by World Food Program (2019b) also examined environmental risks related to how Rohingya and the host community members acquire cooking fuel. The majority (91 percent) use firewood to prepare their meals, which are collected from nearby forest areas. The study reports that as a result, the forest areas around many camps are rapidly depleting and the environmental degradation is immediately apparent as one approached the vicinity of the camps. The erosion caused by deforestation combined with heavy rains can set the stage for localized mudslides. Thus, similar to other studies (Wijekoon et al. 2020; B. Ahmed et al. 2020; N. Ahmed et al. 2020), this also emphasized the effects of climate change. This is particularly critical because regional forest in Cox’s Bazar functions as the primary buffer against cyclones, storms and surges for millions of people living in the vulnerable coastal zone.

To alleviate these environmental concerns, the Rohingyas must be made aware of the severe consequences of deforestation degradation, and alternative income-generating initiatives must be available to this population. While the study by Muz Rahman (2018) does not directly look at Rohingya who were displaced in 2017, it still reveals critical information with regards to this population; if these are the only existing forms of livelihood options that Rohingya can take on, those currently in the camps who might eventually leave could resort to the same livelihood strategies, thereby exacerbating the situation. Along with the findings from the SAFE rapid assessment (WFP 2019b), it is clearly apparent that the DRP heavily rely on these natural resources and efforts must be taken in order to provide them with alternatives in order to stop further environmental degradation.

Future implications

Looking beyond environmental sustainability, a case study on the Teknaf Solar Power Plant examined the economic and social impacts of the power plant on the community (Liza, Aktar, and Islam 2020). It was revealed that the installation of Bangladesh’s first solar park in Cox’s Bazar may have adversely affected host community members. The 28 MW plant is located on the bank of the Naf River where salt and shrimp were rotationally cultivated before. It was estimated 250 people lost their jobs (salt and shrimp farmers, land laborers, transporters, traders, and input suppliers) as a result of the solar park. The case study argues that while more sustainable energy sources will help accelerate the country’s economic growth, it must also create opportunities for poor landless farmers who may be at risk of losing their livelihood due to the implementation of land intensive and costly energy projects. It further states that as the government plans to establish several more

solar energy parks, proper assessments should be performed critically to not only ensure sustainable energy sources but also sustainable socioeconomic development.

Repatriation of Rohingya is unlikely in the short to medium terms, however, there is a lack of assessments of how the influx and increasing amount of settlements will affect the environment over the next several years. Therefore, the existing evidence lacks an assessment of environmental costs, making it impossible to draw concrete conclusions associated with the losses and damage due to the Rohingya influx. An earlier rapid environmental impact assessment (UNDP and UN Women 2018) noted that most of the physical environmental impacts (ie, ground water depletion; ground water contamination; poor indoor air quality; poor management of sewer sludge; removal of soils and terrain; and changes in terrain) appear to be reversible. Nevertheless, it will require considerable time to return to their baseline levels and paramount to any reversal will be the implementation of closure of the Rohingya camps and the initiation of land reclamation plans. The lack of discussion around the impacts of unregulated waste disposal and management (as reported in evidence around WASH) in and around the camps also requires further evidence.

3.6 Education

Even though national stakeholders and aid agencies are vigorously working to close gaps in education access for both Rohingya and HC children, challenges remain to expand educational systems in CXB and accommodate all groups. School enrollments among host community children are lower than the national average (54 percent for boys and 63 percent for girls, compared to national rates of 63 percent and 66 percent respectively), and there are also higher rates of dropout reported in the area. (Cesar et al. 2019c). Furthermore, due to discriminatory practices in Myanmar, nearly half the DRP children who arrived in Bangladesh have never had the opportunity to engage in formal school prior to their arrival (Guglielmi, Jones, Muz, Baird et al. 2020).

For the time being, only humanitarian organizations can provide non-formal education to DRP children in makeshift settlements.²² At the onset of the most recent influx in 2017, the Government imposed regulations that barred DRP children from availing Government run school services (UNESCO 2018). Evidence shows that DRPs who arrived in Bangladesh before 2017 and are living among host communities had managed educational access in local private and government schools. But in the absence of valid Bangladeshi documents

²² UNICEF states the curriculum for DRP children currently being used by most NGOs in the camps consist of only English, Burmese, math, and life skills classes. As of January 2020, UNICEF introduced the Myanmar curriculum for 10,000 students on a pilot basis (UNICEF, 2020). However this information was not reported in any of the articles reviewed in this SRGA.

(a prerequisite), they were unable to secure certification for their education, thereby precluding them from future opportunities (Guglielmi, Jones, Muz, Baird et al. 2020).

Barriers to education

Host community children are faced with various barriers to education including both social and economic factors. While 83 percent of children in Bangladesh complete primary school, only 29 percent complete upper secondary school. In Chittagong, national data from the MICS shows completion rates for primary, lower secondary and upper secondary at 80, 63, and 25 percent respectively. Children from the poorest households and male children are less likely to attend school than children from the wealthiest households and female children. Furthermore, children from marginalized communities like refugees are the most likely to have low access to education.

It is critical to conduct assessments of both the demand and supply side – a thorough examination of Rohingya children and their needs along with the capacity of the teachers and administrators responsible for provision of educational services. Assessments such as these are key to informing more effective education strategies for the inclusion and development of Rohingya children. Cox's Bazar Education Sector and Child Protection Sub-Sector partners (a consortium of local and international NGOs) carried out one of the first Joint Rapid Education and Child Protection Needs Assessment (JRNA) in December (Sanduvac 2017). It confirmed that the primary providers of education services in the camps are the NGOs while it was the Government for the host communities.

Several demand side barriers to accessing education have been identified including the need to support their families financially, early marriage, among others. First, Rohingya children living in camps and in host communities reported interruptions to their schooling to support their families economically. Work was the second most frequently mentioned barrier, especially for boys, with 52 percent reporting it as the primary barrier for Rohingya boys who have been living outside the camps and arrived prior to the 2017 influx. For girls, the burden of work was also reflected in the form of household chores and common gender-based barriers, including schools being too far (safety issue), menstruation-related barriers and early marriage. The study however does not clarify or delve into the details of the types of work the children are engaged in. The quality of the education they typically receive also comes to the fore. For instance, nearly half the respondents report that the teachers are largely untrained with high rates of absenteeism.

Evidence shows that boys and girls living in DRP camps are at higher risk of violence, exploitation, trafficking, abuse and neglect which decreases their mobility, often keeping them from attending school at all (Severijnen and Steinbock 2018). As a result, it is reported that many of these children, particularly girls, are married off as a negative coping strategy instead of sending them to schools. Incidentally 10 percent of respondents

also confirmed that in addition to girls, early marriage is also one of the coping strategies employed for boys. A subsequent assessment (Cox's Bazar Education Sector 2018) additionally report that concerns for safety and mobility while traveling to learning centers were also identified as barriers to accessing education, particularly by girls (Gallano 2018). However, the specific nature of threats remained unidentified by this assessment.

Since literature shows that sexual harassment is a common barrier to girls' mobility in Bangladesh, it can be assumed as a major threats or barrier to accessing education for girl. This is also mentioned in a policy brief by ODI and GAGE that showed among unmarried girls, sexual harassment constitutes a significant safety risk in both Rohingya and host communities (Guglielmi, Jones, Muz, Baird et al. 2020).

Evaluation of education programs and gaps

Several organizations providing education in the camps report difficulties with recruitment and retention of pedagogical staff for the learning centers due the lack of qualified teachers in host communities. Of those whom they are able to recruit, the dropout rates given the conditions are quite high. Female teachers, especially, terminate their contracts because of poor working conditions, weak gender sensitive planning, and low salaries. Finally, the report recommended that alongside training, there should be more frequent needs and capacity assessments performed in order to keep track of any other anticipated gaps (Gallano 2018). This assessment demonstrates that there is a general need to better address barriers presented on the demand side (e.g. lack of school feeding programs, increasing girls' safety to and from school) by programs and organizations in order to increase enrollment and retention rates as well as build capacity of teachers and trainers at learning centers improve the supply side.

However, a more recent and larger scale assessment showed significant improvements in education programming in the camps (Pascaud and Panlilio 2019). More specifically attendance at learning centers for DRP had increased substantially – from around 40 percent to over 60 percent for children aged 3-5 years and from around 60 percent to over 70 percent for children aged 6 – 15 years. One of the primary drivers of this increase is due to more centers being built in more locals, thereby alleviating much of the concerns related to mobility and safety. Similarly, the learning centers have improved their staffing to include more trained and dedicated teachers.

However, substantial challenges for DRP children remain; without provision of adequately structured curricula or grade progression, the current system is not meeting the needs of young adolescents and youth – thereby leaving them out of the system almost entirely. Thus, as the crisis transitions on to the next phase, organizations and the GoB must give more consideration to how education and vocational programs can be more inclusive of Rohingya youth and subsequently, those from host communities, who may become indirectly affected by lack of adequate programming in the area.

Evidence points to the need for more vocational training for DRP youth in the camps.

One report showed that in the camps, only 2.4 percent of the adolescents and youth in the sample benefited from skills building and vocational training programs (Guglielmi, Jones, Muz, Baird et al. 2020). Majority of beneficiaries of these programs were older girls as the skills building trainings largely revolved around sewing and tailoring programs, thereby precluding the male cohorts. However, the report does not dig deeper into additional reasons that preclude boys' participation and merits further inquiry. This can help inform future programs to help adolescent boys feel less frustrated about being completely idle during their time spent in the camps and provide them the skills they need to continue developing in the future.

For Rohingya adolescents, existing research does not demonstrate a consistent picture as it has yet to scrutinize how education for the DRP youth can be integrated with the local curriculum. There is also a need to take an integrated approach to research how the curricula can be more appropriately based on age and competencies to ensure that adolescents inside and outside the camps are gaining literacy, numeracy and other foundational skills. If not, they risk becoming a lost generation (particularly among the DRP) without any educational accreditation or learning progression, making them highly vulnerable to protection threats and lack of future livelihood options. Thus, studies should also investigate context-tailored and gender-sensitive access to education and technical skills development programs aimed at securing employment in context-appropriate value chains for youth from both populations.

3.7 Digital Connectivity

There is a clear high-level of mobile phone penetration and extent of digital connectivity noted across both DRP and host communities in CXB that should be more examined.

The number of mobile connections in Bangladesh in January 2020 was equivalent to 99 percent of the total population ("Digital 2020: Bangladesh" 2021). Among the host community members in Cox's Bazar, over 90 percent of households in the 2019 Cox's Bazar Panel Survey reported owning mobile phones. On the other hand, 80 per cent of Rohingya households reported owning a mobile phone, increasing from 74 percent in 2017 before arriving in Bangladesh. A growing body of work has even linked connectivity and communication devices to the quality of life experienced by refugees (Mancini et al. 2019). It can allow individuals like DRPs to reconnect with family members in their home countries, have access to education, receive remittance and potentially improve their livelihood.

When forced to live offline or with limited connectivity, refugees are cut-off from the latest information, access to essential health and education is impeded, and it becomes challenging to make informed decisions on strategies to improve their livelihoods (UNHCR 2016). A recent study by GSMA Association (2017) indicates that refugees arriving

in Europe from Syria, Iraq, Afghanistan and beyond not only owned mobile phone but also regarded connectivity as a basic necessity. With regards to the DRP, two studies on social media use revealed high use of Internet and mobile phones in the camps (Nachrin 2019; Elsayed 2020). Both studies demonstrated that Rohingya were using social media (mainly Facebook) to gather information (e.g. find the latest news, connect with family and friends) and socialize (e.g. make new friends and broaden their networks).

While several Rohingya report having access to mobile phones, they still lack sufficient information due to the issue of high-levels of illiteracy. To gauge the information needs of the Rohingya population and the host community, two information needs assessments (INA) were carried out by Internews²³ in 2017 and 2019, respectively (Iacucci et al. 2017; Abud et al. 2019). At the baseline, evidence suggested that mobile phone ownership among the DRP were relatively high (64 percent). The report also highlighted that most of the phone credit was spent on internet usage rather than on voice connectivity. Moreover, gathering at shops to charge their phones and exchange information was also very prevalent. Close to 77 percent of the population reported that they did not have enough information to make an informed decision while two-thirds of the surveyed population indicated that they were unable to communicate with aid providers.²⁴ However the main challenges of the information ecosystem in the camps was noted to be exacerbated by a high level of illiteracy (77 percent) among DRPs.

In a more recent assessment, DRP reported an increase in mobile phone ownership and the subsequent improvements. The second wave of the INA in 2019 revealed that in addition to mobile phone ownership rising by 10 percentage points, 92 percent of the surveyed DRPs felt that they had sufficient information to make decisions about their daily life. However, 40 percent of the DRPs did not have enough information on how to access financial support, water supply, aid registration and latest information about Myanmar. Results suggest that the majority of those with mobile phones may be communicating with aid providers more directly, thus improving their access to certain programs in the camps. It also suggests that approximately 40 percent of the respondents (compared to 64 percent in 2017) are probably still unable to communicate with aid providers, thus implying an issue with literacy.

However, it is critical to note that Rohingya residing in the camps are by law prohibited to poses SIM cards or have Internet on their mobile phones. According to the Human

²³ Internews is an international NGO that aims to empower local media worldwide and give people the news and information they need, particularly in times of humanitarian crises.

²⁴ In order to understand how to improve communication between Rohingya, aid workers as well as the host community, studies have been carried out earlier in the response by BBC Action Media (2018) as well as Translators Without Borders (2018). The two studies aimed to understand the sociocultural aspects of Rohingya society as well as their language and information needs. Both had findings similar to the INAs conducted by Internews, emphasizing the need to examine challenges in effective communication between Rohingya, host community members and humanitarian workers.

Rights Watch (HRW), in as early as September 2019, The Telecommunication Regulatory Commission (BTRC) directed mobile phone carrier companies to stop selling SIM cards to Rohingya and shut down 3G and 4G services in the camps (Human Rights Watch, 2019). Authorities are continuously conducting drives to try to crack down on camp residents; in December 2019 a newspaper report stated more than 12,000 SIM cards had been seized since September (Rashid, 2019). Furthermore, a recent brief published by HRW noted that the Internet blackout is hindering the dissemination of essential information during the COVID19 pandemic, not just for the DRPs but also for aid workers who rely on Internet-enabled mobile phone services (e.g. WhatsApp Messenger) to support their work in the camps (Human Rights Watch 2019).

As the response moves from an acute to a medium-term one, there is a significant scope to improve digital connectivity mechanisms to improve the lives of the DRP. The relationship between quality of life and access to communication devices in the camps merits further investigation in order to demonstrate a clear picture that can help draw concrete conclusions about the situation. Additionally, it is important to study and identify effective methods of communication with the DRP. This will allow agencies on the ground to not only tailor their approach to communicate with the DRP more effectively, but also design better programs (e.g. education and skills development) to improve community resilience. Assessments of the size of the impact of the mobile usage in the local market can be carried out to understand the potential of the market for the wider private sector, host community and DRP. But while there is much scope for future studies and programs on this topic, it is subject on the Government's decision to withdraw the communication blockade on the camps. While global players such as the Human Rights Watch and other humanitarian agencies have strongly advocated in favor of lifting the ban, it remains a contentious and politically charged issue.

3.8 Security Needs

There is a high occurrence and risk of GBV, human trafficking, criminal activities and inter-communal disputes reported, leading to a heightened level of vulnerability of both HC and DRP communities in the CXB region. There is growing tensions between host community and DRP communities posing security risks for both groups. Seeking to understand these dynamics and sources of threats and risks, a needs assessment was conducted on the DRP and Host Communities in Teknaf (Inter-Agency 2018). The report found that there are significant barriers listed in accessing information, services, and assistance such as lack of outdoor lightening, lack of safe spaces, and fear of physical, sexual and gender-based violence. The tension is noted to be related to access and use of land, perceived and actual disparities in aid distribution and access to public services, broader resource competition and perceptions of power.

Assessments of crime and violence in the camps show that DRP face various problems but somehow still show trust in either a formal or informal justice system. Those interviewed in a rapid assessment examining perceptions of safety said theft, attacks, fights, and violence were the key concerns, especially where gangs operate with relative impunity in the camps (Ground Truth Solutions 2019c). Rohingya surveyed seem to somehow believe that if a crime takes place in their community, there will be justice. But authors note that it is unlikely it would be through the formal justice system as there is a major reliance on and preference for informal justice systems among Rohingya communities. However the particulars of how these mechanisms are implemented was not included in the report and remains a gap. It can be assumed though that informal justice mechanisms among DRP are based on sociocultural norms that can often be more harsh, particularly towards women and children. Moreover, Rohingya who know how to make suggestions and complaints to aid providers reported being more likely to have trust in a justice system – formal or informal – than those who are unaware of available grievance redressal mechanisms. In addition, with over 45,000 Rohingya who have currently been displaced in the recent fire (UNICEF 2021), perceptions of safety and security must be reassessed among both the DRP and neighboring HC who were affected.

While the Rohingya have faced and continue to face immense trauma, the fear for their safety and protection is further exacerbated by the fear of repatriation and having to face further violence at the hands of the Myanmar army. A survey by Ground Truth Solutions (2019c) showed that the vast majority (87 percent respondents) want to stay in the camps with their families if they are unable to return safely to Myanmar. Furthermore in 2018 the Bangladesh Government and UNHCR began registering the Rohingya through the collection of biometric data (e.g. iris scans and fingerprints) and family information; smart cards were then connected to this data. Those administering this registration exercise claimed it was for the purpose of protection, identity management, documentation, provision of assistance, and population statistics.

Evidence shows multiple Rohingya speaking of fears around potential data sharing between the Bangladesh Government, Aid Agencies and Myanmar. In a study by Maxwell et al. (2019), many said they had doubts about the digital ID system because they were not assured that the biodata would not be shared with Myanmar and used to “cheat” them and send them back. The findings revealed that while informed consent in the process of collecting biodata remains vital, it is difficult to ignore the power dynamics – DRPs are rarely in a position to establish their rights, especially when it comes to data privacy. The report states that as mentioned in several interviews, the burden of the violence the Rohingya escaped and still fear, along with their need for basic necessities from the very institution requesting their data, weighs more heavily on them.

While it is encouraging that there has been progress on safety and perceptions of safety, much work remains. Given ongoing uncertainty over their future, more research on how to support the resilience of Rohingya is critical. The current existing evidence does not

provide a consistent picture to allow for drawing concrete conclusions on the safety needs of the DRP as well as neighboring host communities. For example, there is a need for more examination of the current status of Rohingya who have been registered under the digital ID system and whether it is benefiting their access to humanitarian aid or other viable livelihood options.

3.9 Accountability of Humanitarian Organizations

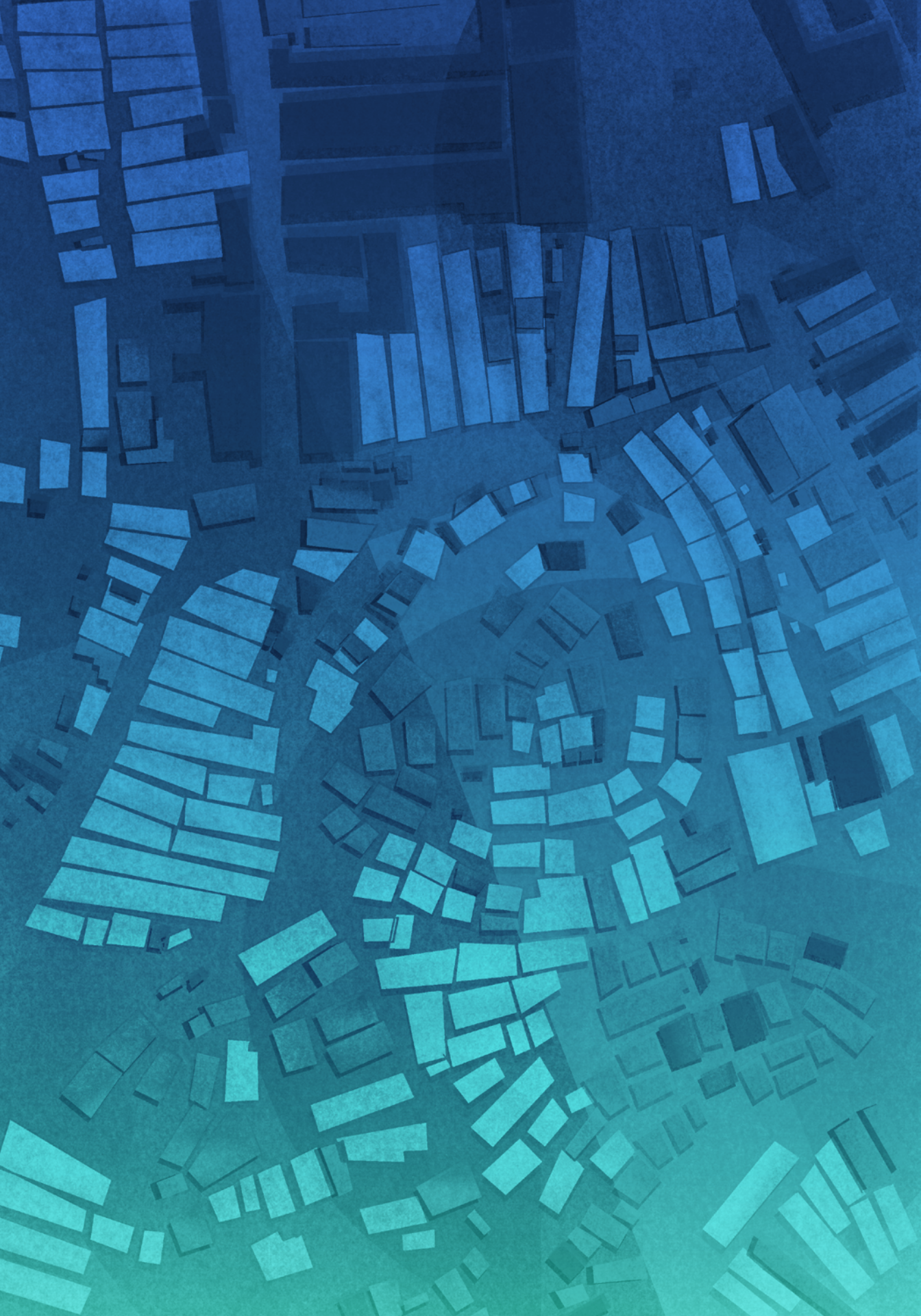
It is critical to have a mechanism in place for humanitarian organizations to monitor their own accountability in the provision of essential services to vulnerable populations like DRPs. The responsibility of organization working in times of crises and emergencies is to help those who are in need. However, the pressure of providing essential needs and services can be affected by lack of time, resources as well as funds. Regardless, these organizations are primarily required by global and local policies and standards of humanitarian work to protect individuals and groups and provide the appropriate assistance. The last decade has seen significant advances in the standardization and coordination of relief and development activities, including improved mechanisms for coordination and accountability. While these efforts provided a solid basis for improved efficiency, they have faltered in recent large-scale crises, which needs to be taken into consideration with regards to the situation in CXB.

Reports show various parts of the accountability systems in place by various organizations are deemed ineffective such as complaint mechanisms for DRP living in camps. Christian Aid and Gana Unnayan Kendra (2018) conducted an accountability assessment of the Rohingya response to inform the humanitarian sector on the implementation of accountability systems in their work in the camps. The report found a commonly used mechanism such as the complaint boxes and phonelines, however were the least preferred, least trusted and least used by Rohingya. There is a general lack of awareness of any feedback or complaint mechanisms (only 16 percent of women and 25 percent men said they were aware); accountability is about more than rolling out systems, it also requires significant orientation for frontline humanitarian workers/volunteers and Rohingya communities. While respondents generally said they felt assistance was appropriate (although women less so than men), they still felt it was not timely nor did they have any influence in decision making. Only 27 percent of women and 17 percent of men reported understanding their rights related to humanitarian assistance.

However, camp residents generally perceived aid workers as trustworthy and respectful of their needs. A report on feedback and relationships (Ground Truth Solutions 2019a) found 95 percent Rohingya surveyed felt treated with respect by humanitarian staff and trust them to act in their best interests. They said they feel either very comfortable or comfortable enough talking about their problems with NGO workers. Seventy-eight percent of

Rohingya said they felt that humanitarian organizations take their opinions into account when providing aid and services. But among those who do not feel their opinions are considered, there is a sense that aid providers still only talk to Majhis or other people in leadership positions.

Overall, these reports raise an important factor for the humanitarian sector to take into serious consideration: there is a critical need to promptly and comprehensively address these issues and tailor accountability systems towards Rohingya preferences and practices. However, the existing analytical literature does not provide a consistent evidence and concrete conclusions cannot be drawn from the data available. Although the first phase of the Rohingya response since 2017 was understandably chaotic and many points regarding accountability may have been overlooked, enough time has passed for organizations to better examine how a more adaptive response can be ensured based on both Rohingya and host community needs.



Gap Assessment

The following section addresses the gaps found in the literature thus far. The literature examined for this study has mapped analytical work by relevant organizations and academic entities. Most articles used a mixed methodology which presented more effective data analyses. This paper has discussed evidence across ten themes and eight sub-themes, including economic welfare outcomes, health, education, gender, and other vital areas. Analysis of persisting knowledge gaps will lay the thematic foundation for the CXB Humanitarian Development Research Network (HDRN).²⁵ The gaps under each theme are further explored in Annex 3.

Health

Various aspects of health have been studied most extensively thus far. Among them, issues related to disease prevention and surveillance have received the most attention. However, the available literature is primarily focused on Rohingya populations while evidence studying the potential spill-over effects into the HC remain largely unexplored. Despite several ongoing initiatives within the camps, information on the efficacy of existing mechanisms is mixed and merits further examination from both the demand and supply side. On the demand side, the situation can benefit from assessing whether behavioral traits or cultural attitudes and practices may be discouraging the uptake of relevant services by Rohingya. From the supply side, in addition to studying the mechanics of service delivery, further assessment should be undertaken to identify the risk factors surrounding each disease or condition so that better preventative methods can be designed. Other potentially important health issues that are not reflected under the themes treated here, such as non-communicable diseases, should also be noted as significant gaps in the literature; this is generally a less examined area even when it comes to the HC. Lastly, the prevention and surveillance of infectious diseases appear more relevant than ever, in the context of the COVID-19 pandemic, which requires further investigation within both Rohingya and HC populations.

²⁵ The primary objective of HDRN will be to use research like this SRGA to steer national policy towards the region with the production of evidence relevant to the CXB development agenda.

WASH

WASH-related activities in the camps are strongly correlated with health outcomes. However, as COVID-19 response and rebuilding advance, a better understanding is required about which types of WASH-focused programming have been most successful in eliciting desired behavioral traits (e.g., hygiene practices like handwashing, as well as menstrual hygiene for DRP women). WASH facilities in HC areas surrounding the camps must also be examined in context to the prevention of coronavirus in the current pandemic. Several studies, which focused primarily on the Rohingya, referred to their lack of exposure to WASH-related topics while in Myanmar. It is therefore critical to generate evidence to identify effective communication strategies that can change and improve perceptions and practices regarding these topics. Lastly, further work also needs to shed light on whether a capital-intensive WASH strategy (e.g., installing new facilities) versus labor intensive strategies (e.g., promotion) that may be different from other strategies used among HC populations in prior WASH programs.

Nutrition and food security

Despite ongoing efforts, malnutrition and stunting persists among both HC and Rohingya children. Studies need to be undertaken to identify the operational bottlenecks in nutrition programs for both HC and Rohingya. For instance, a parallel assessment is needed to ascertain whether social and cultural norms among the DRP may be hindering progress in programs promoting better nutritional outcomes. Communication strategies used to deliver maternal and IYCF messages need to be assessed to understand if current approaches need improvement, especially from a cultural perspective. For example, the attitude of Rohingya men towards the health and nutrition of their children and partners needs to be understood to include them appropriately in discussions of household nutrition. A critical gap, however, remains in examining the resale of food assistance by the DRPs which is limiting the impact of food aid. Studies included in this review note that e-voucher beneficiaries and in-kind beneficiaries sell rice and lentils in resale markets to pay off debts, finance health- and transport-related costs, and buy fuel, clothing, and food items containing protein. This highlights the need to better understand how needs can be met so that DRPs may not be forced to engage in negative coping mechanisms.

Sexual and reproductive health

Several major gaps were identified in the literature regarding SRH, most notably when it comes to documenting and understanding the trauma faced by the DRP immediately prior to their arrival. In Bangladesh, the DRP population remains vulnerable in terms of sexual and gender-based violence, sexually transmitted infections (STIs), unintended pregnancies, and maternal deaths and illnesses. Reported use of contraception among Rohingya is low, in part for cultural reasons. The absence of evidence regarding STI and HIV prevalence among the DRP population is stark. More evidence is required to

highlight the depth of emotional, physical, and sexual trauma that many adolescent girls and women have experienced. Most Rohingya are religiously and culturally conservative Muslims, and considerable stigma is associated with sex and sexuality in their culture. Studies need to be undertaken to better identify communication strategies that respect cultural sensitivities but can effectively disseminate important information, particularly to youth. As also with host communities, the evidence suggests that mothers-in-law and husbands are gatekeepers to contraception use for Rohingya women. However, no evidence indicates that any campaigns have been undertaken to reach these gatekeepers. It may therefore be helpful to frame research around better understanding this population group and developing effective messaging strategies to foster positive change in this arena.

Mental health

In order to draw a consistent picture regarding mental health among HC and DRP, more credible evidence needs to be obtained, for example through broad-based, population-representative studies. This will help to further understand the bottlenecks in addressing mental health-related illnesses among the DRPs. The mental health of the DRP is deeply intertwined with the outcomes and performance of the interventions employed by humanitarian agencies. For example, while skills-building and educational activities are being targeted to DRPs, studies need to focus on the link between poor mental health and the outcomes of interventions. Particular attention needs to be directed at women and children who suffered from sexual violence. To improve mental health within the camps, it is also imperative to develop strategies focused on understanding men and elderly populations who may hold deeply entrenched social values that hinder progress. The result of such studies will enable humanitarian agencies to design and implement interventions targeted at the most vulnerable DRPs.

Disability inclusion

Additional evidence on disability inclusion, particularly for children, is needed to improve early child development and education outcomes among HC and Rohingya populations. The general absence of evidence on disability inclusion among the two groups also underscores the need to examine areas like livelihood development and mental health, especially among persons with disability living in the camps. Additional research is required to inform programmatic decisions to increase the regularity of support, introduce more targeted and/or expansive services, and enable community-centered approaches. The intersectionality of gender and disability must also be more carefully examined to ensure inclusive programming, particularly with regards to dignified access to key facilities.

Gender-based needs

Women's participation in leadership roles and activities is known to have a positive effect in tackling issues around gender-based violence. Case studies from both HC and Rohingya communities can provide more evidence on how women or women's organizations currently operating in crises have been able to mitigate GBV. Possible justice mechanisms for Rohingya women and girls require further exploration, as there are still gaps in the literature regarding such solutions in the camps, as well as in host communities. The largest gap concerning GBV in the camps is the lack of credible numbers demonstrating how many DRP women suffered violence both in Myanmar and after the influx into Bangladesh; most of the evidence presented on this topic is referred to in studies as anecdotal, making it less credible. Reliably documenting the allegations of harms suffered by Rohingya communities, instead of relying on anecdotal accounts, can also establish a baseline for future use to build more effective protection and safety nets for vulnerable DRP women and children.

Economic welfare

Analysis of available literature suggests gaps in several key knowledge areas on economic development and welfare in CXB. Priorities include quantifying the economic impact of the Rohingya influx and the resulting inflow of massive humanitarian assistance, as well as understanding the broader economic ecosystem surrounding the DRP and the HC. As the Rohingya crisis and response progresses into the medium term, it will become more essential for organizations and the GoB to understand the impediments to income growth and resiliency for both DRPs and the host community. Studies need to be undertaken to better understand the skills the residents of the region offer from the demand side. Parallely, efforts can map out the demand for such skills among local and national enterprises. Such findings can help uncover bottlenecks in the current system and produce better-informed and specific interventions for both the DRP and host community. There is also a need for more studies gauging the magnitude of the wage discrimination imposed on DRP through restrictions placed on their mobility by the government, limiting income-generating options to jobs strictly within the camps. While the evidence examined in this paper suggests that some DRP participate in informal work outside the camps, inconsistencies and knowledge gaps persist. Additional reliable, representative survey data should be generated and exploited. The effects of humanitarian action on the local labor market and workforce (e.g., through creation of new jobs for translators or aid workers) and its broader impacts on the local economy must be better understood. Lastly, further evidence needs to be obtained on the effects of the influx on tourism in CXB, which already lagged before 2017, despite natural advantages. This issue must be further examined, as the limited information currently available is largely anecdotal, and concrete conclusions about the state and prospects of the local tourism industry cannot be drawn.

Environmental impact

While studies suggest that the environmental impact of the influx is reversible, more evidence is required to understand how this can be achieved. As the repatriation timeline remains unclear, studies need to be undertaken to better understand and inform on way forward to recuperate from environmental degradation in the short term. It is particularly critical to understand the environmental impact of the Rohingya influx on the host community and the extent of the impact on areas such as waste management practices in and around the camps. Despite significant short to medium term implications on the environmental conditions, it has rarely been examined in the literature. Further impact analyses can also bring forward the costs and investment required to implement an effective environmental management plan for the sustainability of the region. Education

Assessments of the education sector in Cox's Bazar emphasize multiple areas that require further analysis across both HC and Rohingya populations. First, studies are needed to examine how curricula can be better customized for ranges of age and competency, along with provisions for formal certification for Rohingya children. DRP adolescents and youth are currently at risk of becoming a “lost generation,” without access to appropriate learning tools. Lack of formal certification of learning progress precludes this cohort from gainful livelihood options. A thorough understanding of skill requirements in the local labor market (discussed above) can assist in the design of vocational and technical skills trainings. This will help create a more effective, context-specific value-chain for the region's employment market. Particularly for DRP adolescents and youth, it is also important to better understand the labor market in Myanmar, should repatriation take place. Policy makers should take recommendations from such studies into account when designing upskilling programs. For HC adolescents, the design of studies and programs in host communities should align with labor market opportunities and job-related skills development training and support. Gap analysis can inform more effective policy and programming to enhance learning and prospects. Finally, now that the Myanmar curriculum has been authorized for use in DRP camps, but rollout has been delayed due to COVID-19, researchers must look into both the impact of the pandemic on pedagogic practices (e.g., use of online learning and social distancing) and the effects on students and their learning.

Digital connectivity

The relationship between quality of life and access to communication devices in the camps merits further investigation. Assessments of the magnitude of impact of mobile usage in the local setting can be carried out to understand the potential of the market for the wider private sector, host community, and DRP. However, while there is scope for future studies and programs on this topic, it depends on the Government's decision to withdraw the communication blockade on the camps. Additionally, it is important to study and identify effective methods of communication with the DRP. This will allow agencies on the

ground not only to tailor their approach to the DRP more effectively, but also to design better programs (e.g., education and skills development) to improve community resilience.

Security needs

While reports of crime and insecurity come from both DRP and host communities, the majority of reports focus on evidence from the Rohingya camps. Several gaps in the current data are notable. Tensions between DRPs and HC are often cited anecdotally, particularly when it comes to sourcing firewood in the regions close to camps. While some evidence points to high levels of violence, including human trafficking and GBV, the true prevalence of such events has not been rigorously documented. This is mainly due to lack of reporting. It is also common in host communities to see low reporting of crime. Mechanisms are needed to further investigate the problems in and around the camps in order to increase security for all community members, including reasons behind and impacts of the recent fire in March 2021.

Accountability of humanitarian organizations

Humanitarian organizations must conduct proper auditing and evaluations of their programs so they can continue to learn and improve their performance for both DRP and host communities. As with other themes discussed in this paper, this area is under-examined, and what little literature is available only discusses organizations whose work is centered on DRP. Reports mention complaint mechanisms that DRP living in camps may avail if they are dissatisfied with services received. However, further investigation is required into how well such mechanisms actually work and how the systems may be improved.

Conclusion

Nearly a million Rohingya have arrived in Bangladesh since August 2017, triggering urgent humanitarian responses, including the provision of food and shelter, water and sanitation, and health services. Despite these large-scale efforts, the DRP continue to face hardship, as they rely solely on humanitarian aid and organizations for all essential services. In the absence of immediate plans for repatriation, the presence of the DRP has major implications not only for the Cox's Bazar district, but also for the rest of the country.

Multiple organizations and research teams have generated evidence to inform policy making and program implementation in the Rohingya response. The resulting literature is varied in approach, focus, and quality. Until now, no study has systematically examined this emerging body of work to distill relevant information and identify knowledge gaps. This paper aims to fill this need by, first, systematically reviewing all available literature on the topic, then highlighting areas where relevant evidence is lacking to inform policy decisions.

This review included 89 studies spanning nine overarching themes. Themes include health, disability inclusion, gender-based needs, economic welfare outcomes, environmental sustainability, education, communication, protection needs, and the accountability of humanitarian organizations. These themes were selected based on the topics which most frequently appeared across the final examined literature.

This paper has aimed to reflect the breadth of topics covered in the research to date regarding the Rohingya influx and subsequent impacts in the CXB region. By adopting a structure based on the main topics covered in the articles found, the paper is able to usefully point out gaps within many of these topic areas (for example, aspects of infectious disease prevention that are not adequately dealt with in the literature to date). On the other hand, the paper's methods mean that it pays less attention to "meta" research gaps or blind spots that may fall between the specific identified topic areas.

A number of findings emerge from this review and overall. For instance, despite efforts and some improvement over time, communicable diseases, malnutrition, and shortfalls in WASH services persist within the DRP camps. Considering that a large proportion of women and girls faced physical and sexual violence prior to their departure from Myanmar, the corresponding health response is inadequate. With the similar backdrop of violence, availability and access to mental health services are far from sufficient. Studies suggest that, overall, women and girls are still vulnerable to gender-based and intimate partner violence. Access to services to mitigate the effects of these events, whether psychological or medical, are limited. Many of these issues have the potential to be better addressed if women were promoted to leadership positions – however, this will be difficult given the sociopolitical dependence on the “majhi” systems. Given the high birthrates within the camps, with a corresponding absence of contraceptive use, studies examining family planning practices, for instance, are necessary for the design and implementation of more SRHR programs for the DRPs. Reports like the Cox Bazar Panel Survey (World Bank, 2019e) show that larger DRP households receive more aid (e.g., food item rations). Further investigation is needed into whether such patterns further incentivize large families. Increased family-planning programming might not change behavior, if such economic incentives are not realigned.

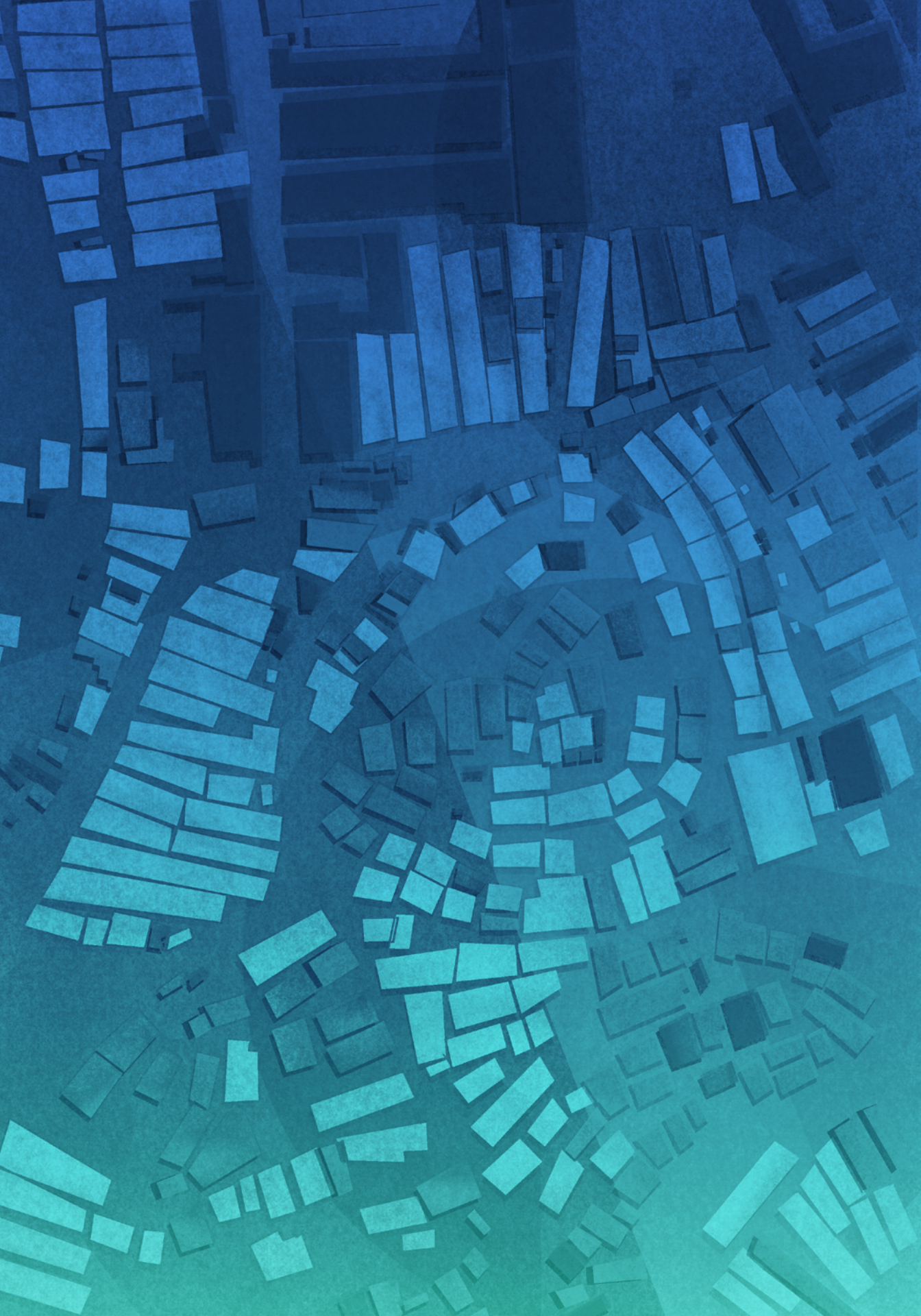
On the economic front, evidence suggests that the initial waves of the influx may have negatively affected wages in the local labor market while driving up prices of commodities. More recent evidence suggests that these initial effects may have receded. However, the review identifies other ongoing bottlenecks to economic development. For instance, while education is an important input to future economic productivity among the DRPs, and thus to their ability to contribute to the broader regional development agenda, the existing education system faces several demand- and supply-side impediments that render it less effective. These include safety concerns, dropouts due to economic reasons, and poor teacher quality. The current technical and vocational trainings geared towards youth can benefit from a stronger focus on building marketable skills. As repatriation remains far off, costs of hosting the Rohingya will escalate rapidly over time. Building human capital among the DRPs can allow them to contribute towards the regional and national development agenda and potentially offset some of these costs.

Several overarching gaps have been identified in the current evidence base. First, studies in general are heavily skewed towards the Rohingya, in contrast to the host population. Additionally, the bulk of evidence is geared towards meeting short-term needs. For example, the current body of literature predominantly focuses on rapid needs assessments. These aim to generate information required to address specific needs encountered by the organization implementing the study. Only a few of the studies considered here have attempted to present a more holistic picture of Rohingya and host communities, beyond the multi-sectoral assessments that have examined topics from health to education and water, sanitation and hygiene. Research that adopts a more comprehensive approach is required, including studies taking a mid- to long-term timeframe. While much of the existing research has been short-term oriented, longer time perspectives now need to be addressed in order

mitigate what will come next in this crisis. Similarly, there is need for more evidence to aid economic policy making, particularly in assessing the gaps in labor market value chains. This is further highlighted by the absence of connection between the various technical and vocational trainings currently being implemented and actual regional and national needs. It is important to better understand mechanisms through which the DRP and hosts can achieve greater economic resilience in the medium to longer terms, as this factor will likely have positive subsequent effects in other areas such as health, nutrition, and GBV.

Gaps not explicitly addressed in the articles examined are still important to acknowledge, and further analysis across sectors and themes identified in this review should be undertaken. For example, important topics that elude the current categories might include “meta” issues like the effects of the pandemic-related global economic crisis on GoB policy priorities and spending, along with shifts in the priorities of international donors that may affect their continued investment in the CXB response. Analysis of these meta-level issues can help produce more evidence to help stakeholders appropriately manage the Rohingya response in the long term. It is also important for researchers working on time-relevant issues like the impact of the current pandemic to understand how to effectively disseminate knowledge required by policymakers and implementers to inform the CXB development agenda.

The papers included in this review primarily focus on micro-level topics. They generally do not engage the “big picture” of global and national economic and governance issues. Nonetheless, exploring such macro issues will be fundamental in assessing the policy options available to the Government of Bangladesh and its partners, as the Rohingya response transitions from emergency management to long-term development. The existing literature fails to address this dimension adequately, which in itself is an important knowledge gap: one that stakeholders have an interest in remedying. Few studies to date seek to situate Bangladesh’s management of the DRP crisis within the broader landscape of political and economic challenges that the GoB confronts. A further layer of complexity is added when limitations due to the COVID-19 pandemic are considered. To propose effective longer-term policy and programming solutions requires engaging these high-level issues, as well as the frontline delivery challenges that primarily occupy many of the studies reviewed here. The impact of the recent military coup in Myanmar must also be assessed by researchers with appropriate expertise. The likely consequences of these events for relations between Myanmar and Bangladesh, and how this may ultimately impact the future of the Rohingya in CXB, remain open questions. This is another area where additional research and analysis must be encouraged.



References

- Abdullah, Abu Ahammad, M. A. Rifat, MD Tareq Hasan, Mohammad Zahidul Manir, Md Mahbub Murshed Khan, and Faria Azad. 2018. "Infant and Young Child Feeding (IYCF) Practices, Household Food Security and Nutritional Status of Under-Five Children in Cox's Bazar, Bangladesh." *Current Research in Nutrition and Food Science Journal* 6 (3): 789–97.
- Abud, Matt, Rahman Al-Mahmood, Rezaur Rahman, and Hasan James. 2019. "Information-Needs Assessment." Report. Cox's Bazar: Internews.
- Ahmed, Bayes, Md. Shahinoor Rahman, Peter Sammonds, Rahenul Islam, and Kabir Uddin. 2020. "Application of Geospatial Technologies in Developing a Dynamic Landslide Early Warning System in a Humanitarian Context: The Rohingya Refugee Crisis in Cox's Bazar, Bangladesh." *Geomatics, Natural Hazards and Risk* 11 (1): 446–68. doi:10.1080/19475705.2020.1730988.
- Ahmed, Munir, Noelle Whitestone, Jennifer L. Patnaik, Mohammad Awlad Hossain, Lutful Husain, Mohammed Alauddin, Mushfiqur Rahaman, David Hunter Cherwek, Nathan Congdon, and Danny Haddad. 2020. "Burden of Eye Disease and Demand for Care in the Bangladesh Rohingya Displaced Population and Host Community: A Cohort Study." Edited by Paul B. Spiegel. *PLOS Medicine* 17 (3): e1003096. doi:10.1371/journal.pmed.1003096.
- Ahmed, Nahian, Adnan Firoze, and Rashedur M. Rahman. 2020. "Machine Learning for Predicting Landslide Risk of Rohingya Refugee Camp Infrastructure." *Journal of Information and Telecommunication* 4 (2): 175–98. doi:10.1080/24751839.2019.1704114.
- Ainul, Sigma, Iqbal Ehsan, Eashita Haque, Sajeda Amin, Ubaidur Rob, Andrea Melnikas, and Joseph Falcone. 2018. "Marriage and Sexual and Reproductive Health of Rohingya Adolescents and Youth in Bangladesh: A Qualitative Study." Population Council. doi:10.31899/pgy7.1022.
- Al Jazeera. 2019. "Rohingya Girls Rescued from Traffickers in Bangladesh." May 12. <https://www.aljazeera.com/news/2019/5/12/rohingya-girls-rescued-from-traffickers-in-bangladesh>.

- Alloush, Mohamad, J. Edward Taylor, Anubhab Gupta, Ruben Irvin Rojas Valdes, and Ernesto Gonzalez-Estrada. 2017. "Economic Life in Refugee Camps." *World Development* 95 (July): 334–47. doi:10.1016/j.worlddev.2017.02.030.
- Arbeiter-Samariter-Bund (ASB). 2017. "Rohingya Refugee Crisis in Bangladesh: Age and Disability Inclusion Rapid Assessment Report."
- Azad, Faria, M. A. Rifat, Mohammad Zahidul Manir, and Nushrat Alam Biva. 2019. "Breastfeeding Support through Wet Nursing during Nutritional Emergency: A Cross Sectional Study from Rohingya Refugee Camps in Bangladesh." Edited by Russell Kabir. *PLOS ONE* 14 (10): e0222980. doi:10.1371/journal.pone.0222980. Bangladesh Bureau of Statistics (BBS). 2017. "Household Income and Expenditure Survey (HIES)."
- . 2019. "Progotir Pathay, Bangladesh Multiple Indicator Cluster Survey 2019, Survey Findings Report." Dhaka, Bangladesh: BBS.
- Bentil, Shadrack. 2020. "Polymorphous Discrimination: Rohingya Women in the Goggles of Intersectionality." *SSRN Electronic Journal*. doi:10.2139/ssrn.3542688.
- Bhatia, Abhishek, Ayesha Mahmud, Arlan Fuller, Rebecca Shin, Azad Rahman, Tanvir Shatil, Mahmuda Sultana, K. a. M. Morshed, Jennifer Leaning, and Satchit Balsari. 2018. "The Rohingya in Cox's Bazar: When the Stateless Seek Refuge." *Health and Human Rights* 20 (2): 105–22.
- Burrell, Alice, Anne M. Kueter, Sujan Ariful, Habibur Rahaman, Alessandro Iellamo, and Golam Mothabbir. 2020. "Appropriate Infant and Young Child Feeding Practices in an Emergency for Non-Breastfed Infants Under Six Months: The Rohingya Experience." *Journal of Human Lactation: Official Journal of International Lactation Consultant Association* 36 (3): 510–18. doi:10.1177/0890334420906838.
- Chin, Taylor, Caroline O. Buckee, and Ayesha S. Mahmud. 2020. "Quantifying the Success of Measles Vaccination Campaigns in the Rohingya Refugee Camps." *Epidemics* 30 (March): 100385. doi:10.1016/j.epidem.2020.100385.
- Chowdhury, Aarani Reza, Nicola Bailey, Shorot Shadhin, and Md. Arif Al Mamun. 2018. "Power Structures, Class Divisions and Entertainment in Rohingya Society." BBC Action Media.
- Chowdhury, Fahima, Taufiqur Rahman Bhuiyan, Afroza Akter, Md Saruar Bhuiyan, Ashraful Islam Khan, Motaher Hossain, Imam Tauheed, et al. 2020. "Immunogenicity of a Killed Bivalent Whole Cell Oral Cholera Vaccine in Forcibly Displaced Myanmar Nationals in Cox's Bazar, Bangladesh." *PLOS Neglected Tropical Diseases* 14 (3): e0007989. doi:10.1371/journal.pntd.0007989.
- Chowdhury, M. A. K., S. M. Billah, F. Karim, Abdullah Nurus Salam Khan, Sajia Islam, and S. Arifeen. 2018. "Report on Demographic Profiling and Needs Assessment of Maternal and Child Health (MCH) Care for the Rohingya Refugee Population in Cox's

- Bazar, Bangladesh.” *Dspace.icddr.org*. <https://www.semanticscholar.org/paper/Report-on-Demographic-profiling-and-needs-of-and-in-Chowdhury-Billah/6854267763158080c5ccd779856658dd2ede91d4>.
- Christian Aid and Gana Unnayan Kendra. 2018. “Accountability Assessment Rohingya Response Bangladesh.”
- Collins, Alexandra, Deborah Coughlin, James Miller, and Stuart Kirk. 2015. “The Production of Quick Scoping Reviews and Rapid Evidence Assessments: A How-to-Guide.” Working paper. London: Joint Water Evidence Group.
- Corna, Francesca, Fahmida Tofail, Mita RaniRoy Chowdhury, and Cécile Bizouerne. 2019. “Supporting Maternal Mental Health of Rohingya Refugee Women during the Perinatal Period to Promote Child Health and Wellbeing: A Field Study in Cox’s Bazar.” *Intervention* 17 (2): 160. doi:10.4103/INTV.INTV_28_19.
- Cox’s Bazar Education Sector. 2018. “Joint Education Needs Assessment: Rohingya Refugee in Cox’s Bazar.” Cox’s Bazar: Cox’s Bazar Education Sector.
- Department for International Development (DFID). 2013. “Assessing the Strength of Evidence. How-to-Note.”
- “Digital 2020: Bangladesh.” 2021. DataReportal – Global Digital Insights. Accessed February 3. <https://datareportal.com/reports/digital-2020-bangladesh>.
- Doherty, Megan, and Farzana Khan. 2018. “Neglected Suffering: The Unmet Need for Palliative Care in Cox’s Bazar.” *World Child Cancer*.
- Doherty, Megan, Liam Power, Mila Petrova, Scott Gunn, Richard Powell, Rachel Coghlan, Liz Grant, Brett Sutton, and Farzana Khan. 2020. “Illness-Related Suffering and Need for Palliative Care in Rohingya Refugees and Caregivers in Bangladesh: A Cross-Sectional Study.” *PLOS Medicine* 17 (3): e1003011. doi:10.1371/journal.pmed.1003011.
- Donovan, Louise, and Iffath Yeasmine. 2021. “Rohingya Refugees and Local Bangladeshis Benefit from Inclusive COVID-19 Response.” *UNHCR*, March 18. <https://www.unhcr.org/news/stories/2021/3/60531db51d/rohingya-refugees-local-bangladeshis-benefit-inclusive-covid-19-response.html>.
- Elsayed, Fatma Elzahraa. 2020. “Social Media Role in Relieving the Rohingya Humanitarian Crisis.” *New Media and Mass Communication*, January. doi:10.7176/NMMC/87-04.
- Estivariz, Concepcion F., Sarah D. Bennett, Jacquelyn S. Lickness, Leora R. Feldstein, William C. Weldon, Eva Leidman, Daniel C. Ehlman, et al. 2020. “Assessment of Immunity to Polio among Rohingya Children in Cox’s Bazar, Bangladesh, 2018: A Cross-Sectional Survey.” *PLOS Medicine* 17 (3): e1003070. doi:10.1371/journal.pmed.1003070.
- Feldstein, Leora R., Sarah D. Bennett, Concepcion F. Estivariz, Gretchen M. Cooley, Lauren Weil, Mallick Masum Billah, M. Salim Uzzaman, et al. 2020. “Vaccination Coverage

- Survey and Seroprevalence among Forcibly Displaced Rohingya Children, Cox's Bazar, Bangladesh, 2018: A Cross-Sectional Study." Edited by Kolitha Wickramage. *PLOS Medicine* 17 (3): e1003071. doi:10.1371/journal.pmed.1003071.
- Filipski, Mateusz J, Gracie Rosenbach, Ernesto Tiburcio, Paul Dorosh, and John Hoddinott. 2020.
- "Refugees Who Mean Business: Economic Activities in and around the Rohingya Settlements in Bangladesh." *Journal of Refugee Studies*, no. feaa059 (September). doi:10.1093/jrs/feaa059.
- Finger, Flavio, Sebastian Funk, Kate White, M. Ruby Siddiqui, W. John Edmunds, and Adam J. Kucharski. 2019. "Real-Time Analysis of the Diphtheria Outbreak in Forcibly Displaced Myanmar Nationals in Bangladesh." *BMC Medicine* 17 (1): 58. doi:10.1186/s12916-019-1288-7.
- Gallano, Henry Renna. 2018. "Education Capacity Self-Assessment: Transforming Education Humanitarian Response to Rohingya Refugee Crisis." Cox's Bazar: UNICEF.
- Gender in Humanitarian Action Working Group Women's Leadership Task Force. 2019. "Summary Analysis of Consultations with Women on Elections."
- Geneva Declaration Secretariat . 2008. "The Global Burden of Armed Violence." Executive Summary.
- Goodman, Annekathryn, and Iftkher Mahmood. 2019. "The Rohingya Refugee Crisis of Bangladesh: Gender Based Violence and the Humanitarian Response." *Open Journal of Political Science* 09 (03): 490–501. doi:10.4236/ojps.2019.93027.
- Gordon, Eleanor, Hannah Jay, and Katrina Lee-Koo. 2018. "Adolescent Rohingya Girls in Bangladesh: One Year On." Policy Brief. Adolescent Girls in Protracted Crisis. Monash University.
- Green, Brandon, and Justine Blanford. 2020. "Refugee Camp Population Estimates Using Automated Feature Extraction." In . doi:10.24251/HICSS.2020.268.
- Ground Truth Solutions. 2019a. "Rohingya Feedback and Relationships."
- . 2019b. "Rohingya Needs and Services."
- . 2019c. "Rohingya Safety and Outlook."
- GSMA. 2017. "The Importance of Mobile for Refugees: A Landscape of New Services and Approaches." <https://www.gsma.com/mobilefordevelopment/resources/the-importance-of-mobile-for-refugees-a-landscape-of-new-services-and-approaches/>.

- Guglielmi, Silvia, Nicola Jones, Jennifer Muz, Khadija Mitu, and Muhammad Ala Uddin. 2020. “‘How Will My Life Be?’: Psychosocial Well-Being among Rohingya and Bangladeshi Adolescents in Cox’s Bazar.” Policy Brief. ODI GAGE.
- Guglielmi, Silvia, Nicola Jones, Jenniferr Muz, Sarah Baird, Mitu Khadija, and Muhammad Ala Uddin. 2020. “‘I Don’t Have Any Aspiration Because I Couldn’t Study’: Exploring the Educational Barriers Facing Adolescents in Cox’s Bazar.” Policy Brief. ODI GAGE.
- Guglielmi, Silvia, Jennifer Muz, Khadija Mitu, Muhammed Ala Uddin, Nicola Jane, Sarah Baird, and Elizabeth Presler-Marshall. 2020. “The Lives They Lead: Exploring the Capabilities of Bangladeshi and Rohingya Adolescents in Cox’s Bazar, Bangladesh.” Policy Brief. ODI GAGE.
- Hasan, Mahrukh Maya, Eric Deluca, Irene Scott, and AK Rahim. 2018. “The Language Lesson: What We’ve Learned About Communicating With Rohingya Refugees.” Cox’s Bazar: Translators Without Borders.
- Hasan-ul-Bari, S M, and Tarek Ahmed. 2018. “Ensuring Sexual and Reproductive Health and Rights of Rohingya Women and Girls.” *The Lancet* 392 (10163): 2439–40. doi:10.1016/S0140-6736(18)32764-8.
- Hoddinott, John, Paul Dorosh, Mateusz Filipski, Gracie Rosenbach, and Ernesto Tiburcio. 2020. “Food Transfers, Electronic Food Vouchers and Child Nutritional Status among Rohingya Children Living in Bangladesh.” *PLOS ONE* 15 (4): e0230457. doi:10.1371/journal.pone.0230457.
- Hözl, Verena. 2019. “Why Aid Groups Want Rohingya Refugees to Vote.” *The New Humanitarian*. August 26. <https://www.thenewhumanitarian.org/news/2019/08/26/Rohingya-refugees-vote>.
- Hsan, Kamrul, Shabnam Naher, Mark D. Griffiths, Hakimul Hasan Shamol, and Mohammad Azizur Rahman. 2019. “Factors Associated with the Practice of Water, Sanitation, and Hygiene (WASH) among the Rohingya Refugees in Bangladesh.” *Journal of Water, Sanitation and Hygiene for Development* 9 (4): 794–800. doi:10.2166/washdev.2019.038.
- Human Rights Watch. 2000. “Burma/Bangladesh: Burmese Refugees In Bangladesh - Historical Background.” <https://www.hrw.org/reports/2000/burma/burm005-01.htm>.
- . 2020. “Bangladesh: Internet Ban Risks Rohingya Lives.” March 26. <https://www.hrw.org/news/2020/03/26/bangladesh-internet-ban-risks-rohingya-lives>.
- Hussain, AHM Enayet, Zunayed Al Azdi, Khaleda Islam, ANM Ehtesham Kabir, and Rumana Huque. 2020. “Prevalence of Eye Problems among Young Infants of Rohingya Refugee Camps: Findings from a Cross-Sectional Survey.” *Tropical Medicine and Infectious Disease* 5 (1). doi:10.3390/tropicalmed5010021.

- Iacucci, Anahi Ayala, Rafiq Copeland, Zain Mahmood, Alison Campbell, Brian Hanley, and Phyzaa Jameel. 2017. "Information-Needs Assessment." Report. Cox's Bazar: Internews.
- Inter Sector Coordination Group (ISCG). 2017. "Gender Profile No.1 For Rohingya Refugee Crisis Response." Report. Gender Equality and Social Inclusion Profile. Cox's Bazar: ISCG.
- . 2019a. "Multi-Sector Needs Assessment - Host Community Ukhia and Teknaf Upazilas." Report. Cox's Bazar: ISCG.
- . 2019b. "Joint Multi-Sector Needs Assessment (J-MSNA) Host Communities in Teknaf and Ukhia Upazilas." Report. Cox's Bazar: ISCG.
- . 2019c. "Joint Multi-Sector Needs Assessment (J-MSNA) Rohingya Refugees." Report. Cox's Bazar: ISCG.
- Inter-Agency. 2018. "Protection Needs and Trends Assessment For Refugee and Host Communities in Teknaf Sub-District ." Report. Inter-Agency.
- International Federation of Red Cross and Red Crescent Societies (IFRC). 2017. "Health and Care for Migrants and Displaced Persons." Case Studies. IFRC. <https://media.ifrc.org/ifrc/document/case-studies-health-care-migrants-displaced-persons/>.
- International Organization for Migration (IOM). 2018a. "Japan, IOM Help to Bring Safe Water to 30,000 Rohingya Refugees in Bangladesh." April 10. <https://www.iom.int/news/japan-iom-help-bring-safe-water-30000-rohingya-refugees-bangladesh>.
- International Organization for Migration (IOM). 2018b. "Rapid Mental Health and Psychosocial Needs." Report. Cox's Bazar: IOM.
- Jayasinghe, Namalie, Momotaz Khatun, and Moses Okwii. n.d. "Women Leading Locally: Exploring Women's Leadership in Humanitarian Action in Bangladesh and South Sudan." Report. OXFAM.
- Karin, Shahnam, Md. Arif Chowdhury, and Ishrat Shamim. 2020. "Status of Rohingya Refugees in Bangladesh: A Comparative Study with Emphasis on Aspects of Women and Girls in Camps of Kutupalong, Cox's Bazar, Bangladesh." *OALib* 07 (01): 1–4. doi:10.4236/oalib.1105831.
- Khatun, Fahmida, and Md. Kamruzzaman. 2019. "Fiscal Implications of Rohingya Crisis for Bangladesh." Working paper. Center for Policy Dialogue (CPD).
- Kurkowska, Malgorzata, Agnès Montangero, and Andrea Cippà. 2019. "Dignifying Sanitation Services for the Rohingya Refugees in Cox's Bazar Camps." *International Journal for Rural Development*, March. <https://www.rural21.com/english/news/detail/article/dignifying-sanitation-services-for-the-rohingya-refugees-in-coxs-bazar-camps.html>.

- Lafrenière, Julie, Caroline Sweetman, and Theresia Thylin. 2019. "Introduction: Gender, Humanitarian Action and Crisis Response." *Gender & Development* 27 (2): 187–201. doi:10.1080/13552074.2019.1634332.
- Leidman, Eva, Md Lalan Miah, Alexa Humphreys, Leonie Toroitich-van Mil, Caroline Wilkinson, Mary Chelang'at Koech, Henry Sebuliba, Muhammad Abu Bakr Siddique, and Oleg Bilukha. 2020. "Malnutrition Trends in Rohingya Children Aged 6–59 Months Residing in Informal Settlements in Cox's Bazar District, Bangladesh: An Analysis of Cross-Sectional, Population-Representative Surveys." *PLOS Medicine* 17 (3): e1003060. doi:10.1371/journal.pmed.1003060.
- Liza, Zafrin Ahmed, Hajera Aktar, and Mohammad Rakibul Islam. 2020. "Solar Energy Development and Social Sustainability: A Case Study on the Teknaf Solar Power Plant in Bangladesh." *Journal of Asian Energy Studies* 4: 1–8. doi:10.24112/jaes.040001.
- Loy, Erwin. 2017. "Diphtheria in Bangladesh Rohingya Camps Expected to Double Every Few Days." *The New Humanitarian*. December 12. <https://www.thenewhumanitarian.org/news/2017/12/12/diphtheria-bangladesh-rohingya-camps-expected-double-every-few-days>.
- Lu, Austin, Olivia Cote, Silvia D. Dimitrova, Gretchen Cooley, A. Alamgir, M. Salim Uzzaman, Meerjady Sabrina Flora, et al. 2020. "Screening for Malaria Antigen and Anti-Malarial IgG Antibody in Forcibly-Displaced Myanmar Nationals: Cox's Bazar District, Bangladesh, 2018." *Malaria Journal* 19 (1): 130. doi:10.1186/s12936-020-03199-4.
- Mancini, Tiziana, Federica Sibilla, Dimitris Argiropoulos, Michele Rossi, and Marina Everri. 2019. "The Opportunities and Risks of Mobile Phones for Refugees' Experience: A Scoping Review." *PLOS ONE* 14 (12): e0225684. doi:10.1371/journal.pone.0225684.
- Maxwell, Madeleine, Zara Rahman, and Sarah Baker. 2019. "Digital ID in Bangladeshi Refugee Camps: A Case Study." *The Engine Room*.
- Melnikas, Andrea J., Sigma Ainul, Iqbal Ehsan, Eashita Haque, and Sajeda Amin. 2020. "Child Marriage Practices among the Rohingya in Bangladesh." *Conflict and Health* 14 (1): 28. doi:10.1186/s13031-020-00274-0.
- National Malaria Control Programme. 2015. "Malaria National Strategic Plan: 2015–2020." Dhaka: Ministry of Health and Family Welfare.
- Nachrin, Tania. 2019. "Social Media Use by the Rohingya Refugees in Bangladesh: A Uses and Gratification Approach." *International Journal of Social Science Studies* 8 (1): 1. doi:10.11114/ijsss.v8i1.4551.
- Needs Assessment Working Group Bangladesh. 2020. "COVID-19: Bangladesh Multi-Sectoral Anticipatory Impact and Needs Analysis." Needs Assessment Working Group Bangladesh, CARE, UNOPS and UK AID.

- Nelson, Erica L., Daniela Reyes Saade, and P. Gregg Greenough. 2020. "Gender-Based Vulnerability: Combining Pareto Ranking and Spatial Statistics to Model Gender-Based Vulnerability in Rohingya Refugee Settlements in Bangladesh." *International Journal of Health Geographics* 19 (1): 20. doi:10.1186/s12942-020-00215-3.
- Oishi, Shafiqua Nawrin, and Nazmul Alam. 2020. "Risk Factors Associated with Acute Respiratory Infection (ARI) among Children under 10-Years in Rohingya Refugee Camp." *Recent Research in Science and Technology*, January, 32–35. doi:10.25081/rrst.2020.12.6090.
- OXFAM. 2017. "Rapid Protection, Food Security and Market Assessment." Cox's Bazar.
- Parmar, Parveen K., Rowen O. Jin, Meredith Walsh, and Jennifer Scott. 2019. "Mortality in Rohingya Refugee Camps in Bangladesh: Historical, Social, and Political Context." *Sexual and Reproductive Health Matters* 27 (2): 39–49. doi:10.1080/26410397.2019.1610275.
- Pascaud, Yannick, and Rafael Panlilio. 2019. "Education Needs Assessment (ENA): Rohingya Crisis Response." Cox's Bazar: REACH.
- Poe, Claudia Ah. 2011. "Food Security Assessment in Northern Rakhine State Myanmar." WFP.
- Porter, Rachel. 2019. "New Clean Water Technology Installed in Rohingya Refugee Camps: The Refugee Crisis as a Water Crisis." February 28. <https://savethewater.org/clean-water-technology-rohingya-refugee-camps/>.
- Protection Sector Working Group. 2018. "Protection Considerations on the 'Majhi System.'" Cox's Bazar.
- Rahman, MZ. 2018. "Livelihoods of Rohingyas and Their Impacts on Deforestation." *Springerprofessional.De*. <https://www.springerprofessional.de/en/livelihoods-of-rohingyas-and-their-impacts-on-deforestation/13343422>.
- Rana, Juwel, Kanchan Kumar Sen, Toufica Sultana, Mohammad Bellal Hossain, and Rakibul M. Islam. 2019. "Prevalence and Determinants of Menstrual Regulation among Ever-Married Women in Bangladesh: Evidence from a National Survey." *Reproductive Health* 16 (1): 123. doi:10.1186/s12978-019-0785-7.
- Rani, Pronita Raha, and Rabeya Basri. 2018. "Comprehensive Sexual and Reproductive Health Care in Humanitarian Setting: A Qualitative Approach among Midwives in Cox'sBazar, Bangladesh." Dissertation. <http://urn.kb.se/resolve?urn=urn:nbn:se:du-28942>.
- Rashid, Muktadir. 2019. "12,000 SIMs Seized in Rohingya Camps in Bangladesh." *New Age*, December 7. <https://www.newagebd.net/article/92885/12000-sims-seized-in-rohingya-camps>.
- REACH. 2018a. "Water, Sanitation and Hygiene Assessment Monsoon Follow-Up." Cox's Bazar: REACH.

- . 2018b. “Water, Sanitation and Hygiene Baseline Assessment.” Cox’s Bazar: REACH.
- . 2019a. “Rohingya Refugees with Disabilities: Prevalence, Meaningful Access, and Notes on Measurement.” Cox’s Bazar: REACH.
- . 2019b. “Water, Sanitation and Hygiene Follow-up Assessment Dry Season.” Cox’s Bazar: REACH.
- . 2019c. “Water, Sanitation and Hygiene Follow-up Assessment Monsoon Season.” Cox’s Bazar: REACH.
- . 2019d. “Water, Sanitation and Hygiene (WASH) Household Monsoon Season Follow-up Assessment.” Cox’s Bazar: REACH.
- Sanduvac, Zeynep M. Turkmen. 2017. “Education and Child Protection in Emergencies Joint Rapid Needs Assessment Rohingya Refugee Response.” Cox’s Bazar: Education Sector and Child Protection Subsector.
- Sarker, Malabika, Avijit Saha, Mowtushi Matin, Saima Mehjabeen, Malika Asia Tamim, Alyssa B. Sharkey, Minjoon Kim, Elévanie U. Nyankesha, Yulia Widiati, and A. S. M. Shahabuddin. 2020. “Effective Maternal, Newborn and Child Health Programming among Rohingya Refugees in Cox’s Bazar, Bangladesh: Implementation Challenges and Potential Solutions.” *PLOS ONE* 15 (3): e0230732. doi:10.1371/journal.pone.0230732.
- Save the Children, BRAC, World Vision, WFP, and UNHCR. 2018. “Self-Reliance Assessment Report for the Host Communities.” Cox’s Bazar.
- Severijnen, Eline, and Linda Ridwan Steinbock. 2017. “Childhood Interrupted: Children’s Voices From The Rohingya Refugee Crisis.” World Vision, Save the Children and Plan International.
- Shammi, Mashura, Mushfiqur Rahman Robi, and Shafi M Tareq. 2020. “COVID-19: Socio-Environmental Challenges of Rohingya Refugees in Bangladesh.” *Journal of Environmental Health Science and Engineering*, June, 1–3. doi:10.1007/s40201-020-00489-6.
- Sikder, Abu Hena Mustafa Kamal . 2010. “Access to Water and Sanitation in Refugee Settings: Success and Setbacks in Bangladesh.” In . Japan.
- Sikder, Mustafa, Gabrielle String, Yarmina Kamal, Michelle Farrington, ABM Sadiqur Rahman, and Daniele Lantagne. 2020. “Effectiveness of Water Chlorination Programs along the Emergency-Transition-Post-Emergency Continuum: Evaluations of Bucket, in-Line, and Piped Water Chlorination Programs in Cox’s Bazar.” *Water Research* 178 (July): 115854. doi:10.1016/j.watres.2020.115854.
- Sinclair, Margaret. 2007. “Education in Emergencies.” In *Commonwealth Education Partnerships*, 52–56. Nexus Strategic Partnerships.

- Summers, Aimee, Alexa Humphreys, Eva Leidman, Leonie Toroitich Van Mil, Caroline Wilkinson, Anuradhha Narayan, MALD, Mohammad Lalan Miah, Blanche Greene Cramer, and Oleg Bilukha. 2018. "Notes from the Field: Diarrhea and Acute Respiratory Infection, Oral Cholera Vaccination Coverage, and Care-Seeking Behaviors of Rohingya Refugees — Cox's Bazar, Bangladesh, October–November 2017." *MMWR. Morbidity and Mortality Weekly Report* 67 (18): 533–35. doi:10.15585/mmwr.mm6718a6.
- Toulemonde, Marie. 2020. "COVID-19 Outbreak: Cox's Bazar Rapid Gender Analysis." Report. ISCG Gender Hub.
- Truelove, Shaun, Orit Abraham, Chiara Altare, Andrew Azman, and Paul Spiegel. 2020. "COVID-19: Projecting the Impact in Rohingya Refugee Camps and Beyond." SSRN Scholarly Paper ID 3561565. Rochester, NY: Social Science Research Network. <https://papers.ssrn.com/abstract=3561565>.
- UN News. 2017. "UNICEF Warns of Contaminated Drinking Water in Camps for Rohingya Refugees," November 21. <https://news.un.org/en/story/2017/11/636832-unicef-warns-contaminated-drinking-water-camps-rohingya-refugees>.
- . 2018. "For Rohingya Refugees, Imminent Surge in Births Is Traumatic Legacy of Sexual Violence - Special Report," May 11. <https://news.un.org/en/story/2018/05/1009372>.
- UN Women. 2015. *The Effect of Gender Equality Programming on Humanitarian Outcomes*. New York.
- UNDP. 2018. "Impact of the Rohingya Influx on the Host Community."
- UNDP and UN Women. 2018. "Report on Environmental Impact of Rohingya Influx." Executive Summary. Cox's Bazar.
- UNESCO. 2018. "Education for Rohingya Refugees and Host Communities in Bangladesh." Cox's Bazar.
- UNHCR. 2016. "Connecting Refugees: How Internet and Mobile Connectivity Can Improve Refugee Well-Being and Transform Humanitarian Action." Geneva.
- . 2018. "Independent Evaluation of UNHCR's Emergency Response to the Rohingya Refugees Influx in Bangladesh August 2017 – September 2018." Evaluation Report. Cox's Bazar.
- . 2019. "Refugee Education 2030: A Strategy for Refugee Inclusion."
- UNHCR and REACH. 2018a. "Multi-Sectoral Needs Assessment Report – Rohingya Refugee Response." Cox's Bazar.
- . 2018b. "Rohingya Refugee Crisis Camp Settlement and Protection Profiling." Cox's Bazar.

- UNICEF. 2018a. “Ending Child Marriage.” <https://www.unicef.org/bangladesh/en/ending-child-marriage>.
- . 2018b. “Including Children with Disabilities in Humanitarian Action.”
- . 2021. “Bangladesh Rohingya Camp Fire Situation Report No. 1.”
- Vicient, Carlos, David Sánchez, and Antonio Moreno. 2013. “An Automatic Approach for Ontology-Based Feature Extraction from Heterogeneous Textual resources.” *Engineering Applications of Artificial Intelligence* 26 (3): 1092–1106. doi:10.1016/j.engappai.2012.08.002.
- WASH Sector, UNICEF, and REACH. 2019. “Water, Sanitation and Hygiene Qualitative Assessment: Findings on Menstrual Hygiene Management Needs.” Cox’s Bazar.
- Werker, E. 2007. “Refugee Camp Economies.” *Journal of Refugee Studies* 20 (3): 461–80. doi:10.1093/jrs/fem001.
- WFP. 2019a. “Refugee Influx Emergency Vulnerability Assessment (REVA).” Cox’s Bazar.
- . 2019b. “Safe Access to Fuel and Energy (SAFE) Rapid Assessment.” Cox’s Bazar.
- WFP and Bangladesh Food Security Sector. 2017. “Market Assessment in Cox’s Bazar Implications for Market-Based Interventions Targeted to Rohingya Refugees and Host Communities.” Cox’s Bazar.
- Wijekoon, Niluka, Amarnath Babu, Boris Pavlin, Stephane Hugonnet, Khalid El Tahir, Jennie Musto, Mohammad Khan, et al. 2020. “Evaluation of the Early Warning, Alert and Response System for the Rohingya Crisis, Cox’s Bazar, Bangladesh/Evaluation Du Systeme d’alerte et d’intervention Rapide (EWAR) Pour La Crise Des Refugies Rohingyas, Dans Le District de Cox’s Bazar, Au Bangladesh.” *Weekly Epidemiological Record* 95 (11): 97–105.
- World Bank. 2019a. “Food Consumption Host and Rohingya Populations in Cox’s Bazar.” Brief.
- World Bank. 2019b. “The Cox’s Bazar Panel Survey: Baseline Data on Displaced Rohingya and Their Host Population.” Brief.
- World Bank. 2019c. “Insights from the Household Roster on Demographics and Educational Attainment In Cox’s Bazar.” Brief.
- World Bank. 2019d. “Living Conditions and Asset Ownership for the Host and Rohingya Populations In Cox’s Bazar.” Brief.
- World Bank. 2019e. “Insights from the Labor Module on Work and Wages in Cox’s Bazar.” Brief. World Bank.
- World Bank. 2020a “Impacts of COVID-19 on Work and Wages in Cox’s Bazar.” Brief.

World Bank. 2020b. "Impacts of COVID-19 on Food Security in Cox's Bazar: Food Consumption, Coping and Assistance." Brief.

World Bank. 2021. "Inclusive Growth Diagnostic: Cox's Bazar." Forthcoming.

World Health Organization. 2020. "6 Months Later: How Has COVID-19 Impacted the Life of the First Rohingya Patient?" November 12. <https://www.who.int/bangladesh/news/detail/12-11-2020-6-months-later-how-has-covid-19-impacted-the-life-of-the-first-rohingya-patient>.

Wright, Helen, Adam Fenton, Saleemul Huq, Clare Stott, Julia Tauband, and Jeffery Chow. 2019. "Introduction: Bangladesh Responds to Climate Change; Policy Strategies for Adaptation and Resilience." In *Confronting Climate Change in Bangladesh: Policy Strategies for Adaptation and Resilience*, 1st ed. 2019. The Anthropocene: Politik-Economics-Society-Science 28. Cham: Springer International Publishing: Imprint: Springer.

Zakaria, Hairunnisa, and Noraini Zulkafli. 2020. "The Implementation of Responsibility to Protect Against Rohingya Women." *International Journal of Social Science Research* 2 (1): 145-`155.

Annexure 1

Evidence Assessment

Document Name				
Year				
Authors				
Theme				
Criteria	Yes	No	Unclear	Comments
Is this a peer-re-viewed publication?				
Does the study have a clear and well-defined research Question?				
Is the research method clearly defined?				
Are the Survey design and sample size determination clearly defined (Quant Study)				
Does the research use Primary data?				
Was the data analysis adequately rigorous?				
Are the results clearly presented and discussed?				
Aggregate		Quality		

Notes: Each yes equals 1 point and no and unclear equals 0. For the yes column 6-7 points indicate high quality, 3-5 points indicate moderate quality and , 0-2 indicate low quality.

Annexure 2

Methods and Literature Retrieval Processes

Aggregation of relevant material forms the bedrock for this rapid evidence assessment. The Rohingya crisis is particularly complex in this context, given the multidimensional nature of the events, the number of players involved in addressing the issues and a relatively short time-horizon. As a result, though still part of the core strategy, this limits the effectiveness of traditional search and retrieval methods that focus exclusively on the academic journal and electronic databases. While there may be considerable material available on the topic, given the short time horizon, a significant proportion of the evidence may be stored online on the websites of authoring organizations, individual researchers' webpages, and offline. The heterogeneity of the sources of information on the topic necessitates the need for a more comprehensive retrieval mechanism. We have, therefore expanded the search mechanisms to include:

1. Traditional academic literature search

Academic database review involved searching search strings into the online academic databases determined a priori (see Section 4 for more details). Papers identified through this method, including the search outlets, are outlined in Table 1.

Table 1: Initial search results from academic databases								
SCOPUS	Web of Science	EconPapers	Econlit	Emerald	SSRN	Ideas-Repec	3ie Impact evaluation	Google Scholar
29	32	50	1	-	3	2	-	137 ²⁶

²⁶ The timeline for the electronic literature search was from January 2019 to July 2020 – 18 months after the influx. Initial searches at the beginning of this exercise included all relevant papers from the beginning of the influx. However, the team found that the limited number of articles published before January 2019 (typically in the forms of situation reports and rapid assessment) were re-published with updated information and time trends for the outcomes of interest. Subsequently, based on discussions with relevant experts from the field and the outcomes of the literature searches led the team to limit the search dates to those between January 2019 to July 2020.

Using the principle of relevance and the exclusion and inclusion criteria, 42 peer-reviewed journal articles focusing on Rohingya and Host population in Cox's Bazar were selected as a part of the systematic review.

2. Snowballing

The process of snowballing involved consulting relevant key experts on publications, topics, or thematic areas. While snowballing gave the research team access to the latest and ongoing research from the ground, it did, however, introduce subjectivity and potential bias in the literature gathering process. To counter the shortfalls and effectively carry out the retrieval process, this study took two steps:

- 2.1 Identification of experts:** There are several multilateral and non-government agencies actively working with the Rohingya and the Host population in the region. A significant proportion of these agencies are involved in a variety of primary research/knowledge-generating activities, including impact evaluations, monitoring reports, monthly/quarterly reports, and updates. The review team contacted personnel from relevant organizations based off a list provided by the Inter Sector Coordination Group. A considerable number of papers and briefs were secured through these efforts. The research team has since screened and catalogued the literature received from these experts. Annex A includes a list of the agencies contacted for this review.
- 2.2 Backward and forward snowballing:** Upon the completion of retrieval of literature from all relevant sources, the team reviewed the reference lists derived from each of the studies. New studies identified through this process were collected and reviewed against filters for inclusion within the review. Forward snowballing was carried out whereby the research team looked for studies that reference studies suggested by experts.

3. Grey Literature

This research strategy used in this review refers to studies conducted outside traditional academic channels as grey literature and includes working papers, concept notes, research and policy briefs and donor reports. While traditional literature reviews would typically exclude this body of work, given the heterogeneous nature of analytical products being derived from this region, its exclusion would limit the coverage of this study. Based on the criteria set out in section 3, the team has collected 77 studies that include working papers, needs assessments, baseline reports follow-up reports, policy briefs and rapid assessments. Any literature that has not qualified through the inclusion/exclusion criteria has

excluded from the review. A total of 53 studies have been selected based on the inclusion and exclusion criteria.

4. Literature Search Strings

Search strings are keywords used to systematically search for evidence across databases and are critical to the success of the review (Collins, et al. 2015). Identification of the appropriate search string is an iterative process. There are several important considerations to settle on the search strings including (a) the incorporation of the relevant keywords related to the population, outcome and intervention in the search strings; (b) inclusion of commonly used synonyms of the keywords; (c) Boolean operators such as AND, OR and NOT. Databases vary in their use and interpretation of Boolean operators, quotation marks and brackets. Therefore, the search strings that use these features should be iterated tested each time to ensure comparability; (d) the search string may lead to too many or limited numbers of results. The extant literature recommends using the search string that results in the most responses.

Specific terms and keywords related to the Rohingya response were used to ensure that the online search resulted in relevant works. The taxonomy of these keywords were informed through the existing thematic sectors under ISCG (the coordination body comprising of international and local agencies responding to the refugee crisis and led by IOM). Based on the 12 sub-groups under ISCG, a basic framework for the taxonomy of search strings was created to explore various online databases. The themes established by the ISCG and the subsequent search terms include: Health, Nutrition, Food Security, WASH, Protection, Gender, Education, Host Communities, Emergency Telecommunications, Shelter, Inter-Sector Coordination, and Site Management. Additional key words used in the search were also informed through lists of key words used in articles and reports collected for this review.

Search terms arising from the ISCG thematic areas as well as other key terms emerging from articles initially collected were used in combination with “Rohingya” and without it (e.g. “Poverty” AND “Cox’s Bazar” vs. “Poverty” AND “Cox’s Bazar” AND “Rohingya”) to explore articles that might have included or been exclusively about HC. Table 2 describes how these search strings and various combinations of key words were used to retrieve relevant articles for this review.

Table 2: Examples of Search Strings

Target Group	Host Community and Cox's Bazar Region	Rohingya in Cox's Bazar Region
Examples of search strings	<ul style="list-style-type: none"> • “Cox's Bazar”²⁷ AND “Development” • “Cox's Bazar” AND “Economic Welfare” • “Cox's Bazar” AND “Poverty” • “Cox's Bazar” AND “markets” AND “prices” • “Cox's Bazar” AND “Tourism” • “Cox's Bazar” AND “Climate Change” AND “Environmental Sustainability” • “Cox's Bazar” AND “Education” • “Cox's Bazar” AND “Gender” • “Cox's Bazar” AND “Health” • “Cox's Bazar” AND “Health” AND “Infectious disease”/“Non-Communicable Diseases” • “Cox's Bazar” AND “Sexual Reproductive Health and Rights (SRHR)” • “Cox's Bazar” AND “Health” AND “WASH” • “Cox's Bazar” AND “Health” AND “Disability” • “Cox's Bazar” AND “Health” AND “Nutrition” AND “Food Security” • “Cox's Bazar” AND “Host Community” • “Cox's Bazar” AND “Host Community” AND “Livelihood Development” • “Cox's Bazar” AND “Host Community” AND “Wages” • “Cox's Bazar” AND “Host Community” AND “Safety”/“Security” 	<ul style="list-style-type: none"> • “Cox's Bazar” AND “Rohingya” • “Cox's Bazar” AND “Rohingya” AND “Development” • “Cox's Bazar” AND “Rohingya” AND “Livelihood Development” • “Cox's Bazar” AND “Rohingya” AND “Economic Welfare” AND “Market Access” • “Cox's Bazar” AND “Rohingya” AND “Climate Change” AND “Environmental Sustainability” • “Cox's Bazar” AND “Rohingya” AND “Education” • “Cox's Bazar” AND “Rohingya” AND “Gender” AND “Gender-Based Violence” • “Cox's Bazar” AND “Rohingya” AND “SRHR” • “Cox's Bazar” AND “Rohingya” AND “Health” • “Cox's Bazar” AND “Rohingya” AND “Health” AND “Infectious disease”/“Non-Communicable Diseases” • “Cox's Bazar” AND “Rohingya” AND “Health” AND “WASH” • “Cox's Bazar” AND “Rohingya” AND “Health” AND “Disability” • “Cox's Bazar” AND “Rohingya” AND “Health” AND “Nutrition” AND “Food Security” • “Cox's Bazar” AND “Rohingya” AND “Digital Connectivity” AND “Communication” • “Cox's Bazar” AND “Rohingya” AND “Safety”/“Security” • “Cox's Bazar” AND “Rohingya” AND “Shelter”/“Camps” • “Cox's Bazar” AND “Rohingya” AND “Humanitarian Response” AND “Service Provision” AND “Accountability”

²⁷ Two variations of the spelling was used: Bazar and Bazaar.

Annexure 3

Thematic Gap Assessment Summary

Themes/Sub-themes		Gap Assessment
Health	<i>Infectious Diseases</i>	<p>How the government and NGO stakeholders can develop a viable public health strategy to combat the spread of infectious diseases among DRP and the host communities.</p> <p>Behavioral traits or other confounders that may be impeding the efficacy of health interventions and coverage (e.g. vaccine coverage).</p> <p>Risk factors and behaviors surrounding disease or condition so that better preventative methods can be designed.</p> <p>Detailed prevalence and risk assessment of the spread of COVID 19 in the camps so that appropriate measures may be taken to mitigate the fallout.</p>
	Water, Sanitation and Hygiene (WASH)	<p>Effective communication strategies for WASH-related behavioral changes.</p> <p>Impacts of WASH assets and activities on health and nutrition outcomes need to be analyzed to develop a robust set of strategies.</p> <p>Whether a capital-intensive WASH strategy (e.g. installing new facilities) versus labor intensive strategies (e.g. promotion) will lead to better development outcomes in the medium term.</p> <p>Identify critical program-level bottlenecks needed to be identified along with pervasive social and cultural norms that might be hindering the efficacy of WASH programs.</p>
	SRH	<p>Assessment of the prevalence of women and girls who have experienced rape and sexual abuse in Myanmar or Bangladesh.</p> <p>STI and HIV prevalence among the DRP population along with surveillance of STIs and HIV among current camp residents, particularly youth and adolescents.</p> <p>SRHR communication strategies with Rohingya to combat stigma</p> <p>Communication strategies to promote family planning and contraception.</p> <p>SRHR needs of Rohingya and Host community youth.</p> <p>Messaging around men and mothers-in-laws in order to increase women's access to SRH services and more use of contraceptives in the camps.</p>
	Mental Health	<p>Broad-based population-representative study to understand the bottlenecks in addressing mental health-related illnesses among the DRPs.</p> <p>Link between poor mental health and the outcomes of interventions.</p> <p>Mental health-needs of those who suffered from physical and sexual violence.</p> <p>Understanding and developing communications strategy for men and elderly population who may have deeply entrenched social values that hinders progress.</p>

Themes/Sub-themes		Gap Assessment
Health	Nutrition and food security	Understanding the impact of E-Vouchers vs. food rations on nutrition of DRP in camps. Analyze the impact of re-selling food assistance by the DRPs on food assistance. Communication strategy used to reach the mother and their families on appropriate IYCF need to be assessed to understand if the current strategies need improvement, especially from a cultural perspective (e.g. the attitude of men towards the health and nutrition of their children and partners).
	Others	Causal linkage between improvements in health concerns (like eye health or palliative care) and resiliency need to be developed.
Disability Inclusion		Data aggregated by age groups, particularly in the case of children with disabilities and special needs (ie, learning disabilities). Livelihood development, and mental health of persons with disability living in Rohingya camps. The intersectionality of gender and disability must also be more examined to ensure inclusive programming particularly with regards to dignified access to key facilities.
Gender	GBV	Levels of emotional and physical trauma, particularly sexual violence related trauma, that many women and girls are experiencing. Justice mechanisms available for Rohingya women and girls. Documentation of the allegations of harms suffered by Rohingya communities can also establish an evidence base for future use and build more effective protection and safety nets for vulnerable women and children among the DRP.
	Women's leadership	How women and women-led organizations currently operating in the crises have been able to better mitigate GBV.
Economic Development Outcomes		Understanding how humanitarian aid of this scale has a demand effect on CXB local economy. Data required on the number of DRPs able to access informal income-generating activities outside the camps. Understand impediments to the DRPs' income-generating pathways and potential due to mobility restrictions imposed by the government. Investigation of how the Rohingya can be directed to economic activities that are mutually beneficial for themselves and the broader economy in the long-term (e.g., while repatriation is further delayed). Assess the state of CXB's tourism sector. Overall impact on unemployment, growth and access to finance and other essential services like healthcare, education, transport, fuel/energy, etc. in CXB as a result of the influx.
Environmental Sustainability		Assessment of time needed and interventions required to help return environmental markers to baseline levels. Pilot innovative solutions against further environmental degradation that can accommodate the DRP's presence for the next several years. Analysis of costs and the investment required to implement an effective environmental management plan for the future sustainability of the region.

Themes/Sub-themes	Gap Assessment
Education	<p>How the curricula can be more appropriately based on age and competencies to ensure that adolescents are gaining literacy, numeracy and other foundational skills.</p> <p>Context-tailored and gender-sensitive access to vocational and technical skills development programs aimed at securing employment in context-appropriate value chains.</p> <p>Sectors and types of the work the children and youth are currently engaged in, not only to get a better sense of their activities, but also to assess the risks they have to deal with so that appropriate measures may be taken by the policy maker to ensure their safety.</p>
Communication	<p>The relationship between quality of life and access to communication devices in the camps.</p> <p>Assessments of the size of the impact of the mobile usage in the local can be carried out to understand the potential of the market for the wider private sector, host community and DRP.</p> <p>Impact of mobile and Internet ban in the camps and surrounding areas</p>
Security needs	<p>How NGO programming contributes to resilience through programs like cash for work vocational training and encouragement of small-scale businesses.</p> <p>Examination of the current status of Rohingya who have been registered under the digital ID system and whether it is benefiting their access to humanitarian aid or other viable livelihood options.</p>
Accountability of Humanitarian Organizations	<p>How programs can be designed and implemented to better serve population needs in the medium-term of the response.</p>

Annexure 4

Literature Matrix

Title	Year	EA Score	Journal/ Organization/ Institution	Authors	Doc type	Theme	Method
Information-needs Assessment	2019	4	Internews	Matt Abud, Syed Zain Al-Mahmood, Rezaur Rahman & Hasan James	Grey	Communication	Mixed; 602 survey respondents (501 DRP & 101 HC members; six FGDs (four with DRP & two with HC)
Social Media Use by the Rohingya Refugees in Bangladesh: A Uses and Gratification Approach	2020	3	Int'l J. Soc. Sci. Stud	Tania Nachrin	Peer reviewed	Communication	Mixed; 37 DRP survey respondents via purposive sampling; questionnaire both quantitative (social media use) & qualitative (follow-up questions)
INFORMATION NEEDS ASSESSMENT	2017	3	Internews	Anahi Ayala Lacucci, Rafiq Copeland, Zain Mahmood, Alison Campbell, Brian Hanley & Phyza Jameel	Grey	Communication	Mixed; 570 survey respondents through random sampling (HC and DRP); IDIs and field assessment conducted
The language lesson: WHAT WE'VE LEARNED ABOUT COMMUNICATING WITH ROHINGYA REFUGEES	2018	4	Translators without Borders	Mahrukh Maya Hasan, Eric DeLuca, Irene Scott, & AK Rahim	Grey	Communication	Mixed; 407 DRP survey respondents; follow-up IDIs and KIIs conducted
Power structures, class divisions and entertainment in Rohingya society	2018	3	BBC Action Media	Arani Reza Chowdhury, Nicola Bailey, Shorot Shadhin & Md. Arif Al Mamun	Grey	Communication	Qual; 16 FGDs conducted with 80 DRP men and women living in four camps
Social Media Role in Relieving the Rohingya Humanitarian Crisis	2020	3	New Media and Mass Communication	Fatma Elzahrara Elsayed	Peer reviewed	Communication	Mixed; survey of 130 DRP; KIIs with activists working in CXB DRP camp
Age and Disability Inclusion Rapid Assessment Report	2017	3	Arbeiter-Samariter-Bund (ASB) and the Centre for Disability in Development (CDD) Bangladesh	Arbeiter-Samariter-Bund (ASB) and the Centre for Disability in Development (CDD) Bangladesh	Grey	Disability inclusion	Mixed; 27 DRP surveyed and follow-up IDIs included
Rohingya refugees with disabilities: Prevalence, meaningful access, and notes on measurement	2019	6	REACH	REACH	Grey	Disability inclusion	Mixed; survey data from all refugee households in 33 camps; follow-up IDIs conducted

IMPROVING OUTCOMES FOR DISPLACED ROHINGYA PEOPLE AND HOSTS IN COX'S BAZAR

Title	Year	EA Score	Journal/ Organization/ Institution	Authors	Doc type	Theme	Method
Fiscal Implications of Rohingya Crisis for Bangladesh	2018	3	Center for Policy Dialogue	Fahmida Khatun; Md Kamruzzaman	Grey	Economic Development	Mixed; eight FGDs with DRP (both old and new entrants) and HC in Ukhia, 15 KIIs with government officials, development workers, local hotel staff, businessmen and small traders, as part of the field study. Fiscal projections/ simulations made based on UNHCR data from 2017.
Self Reliance Assessment Report for the Host Communities	2018	6	Save the Children, BRAC, World Vision, WFP and UNHCR	Save the Children, BRAC, World Vision, WFP and UNHCR	Grey	Economic Development	Mixed; survey data from HC in Ukhia and Teknaf, with control groups in Ramu and CXB Sadar Upazilas. DRP living in HC assessed (240 DRP households). Sample size was collected 1143 HHs; seven KIIs conducted & 11 FGDs
Impact of the Rohingya Influx on the Host Community.	2018	6	UNDP	UNDP	Grey	Economic Development	Mixed; survey covered 404 HC (60%) and DRP households (40%); This primary and other secondary data used to develop a camp-and-host community model of overall macro-economic implications; 16 FGDs and 16 KIIs conducted
The Cox's Bazar Panel Survey: BASELINE DATA ON DISPLACED ROHINGYA AND THEIR HOST POPULATION	2019	6	World Bank	World Bank	Peer reviewed	Economic Development	Quant; 5,019 households evenly split between HC and DRP; Two randomly selected adults in each household were interviewed: 9,685 individuals completed the questionnaire
Insights from the Household Roster on Demographics and Educational Attainment In Cox's Bazar	2019	6	World Bank	World Bank	Peer reviewed	Economic Development	Quant; 5,019 households evenly split between HC and DRP; Two randomly selected adults in each household were interviewed: 9,685 individuals completed the questionnaire

Title	Year	EA Score	Journal/ Organization/ Institution	Authors	Doc type	Theme	Method
Insights from the Labour Module on Work and Wages in Cox's Bazar	2019	6	World Bank	World Bank	Peer reviewed	Eco- nomic Devel- opment	Quant; 5,019 households evenly split between HC and DRP; Two randomly selected adults in each household were interviewed: 9,685 individuals completed the questionnaire
Living Conditions and Asset Ownership for the Host and Rohingya Populations In Cox's Bazar	2019	6	World Bank	World Bank	Peer reviewed	Eco- nomic Devel- opment	Quant; 5,019 households evenly split between HC and DRP; Two randomly selected adults in each household were interviewed: 9,685 individuals completed the questionnaire
Food Consumption Host and Rohingya Populations in Cox's Bazar.	2019	6	World Bank	World Bank	Peer reviewed	Eco- nomic Devel- opment	Quant; 5,019 households evenly split between HC and DRP; Two randomly selected adults in each household were interviewed: 9,685 individuals completed the questionnaire
Impacts of Covid-19 on Food Security in Cox's Bazar: Food Consumption, Coping and Assistance	2019	6	World Bank	World Bank	Peer reviewed	Eco- nomic Devel- opment	Quant; Rapid phone follow-up survey to CBPS of 3,150 households across DRP and HC
Impacts of COVID-19 on Work and Wages in CXB	2019	6	World Bank	World Bank	Peer reviewed	Eco- nomic Devel- opment	Quant; Rapid phone survey with a sub-sample of 3,005 out of the 5,020 households surveyed at CBPS baseline were covered by this survey. In this first tracking survey 3,009 out of the 9,045 adults surveyed in baseline were covered.
Market Assessment in Cox's Bazar Implications for market-based interventions targeted to Rohingya refugees and host communities	2017	6	WFP and Bangladesh Food Security Sector	WFP	Grey	Eco- nomic Devel- opment	Mixed; 12 markets in CXB were selected to provide a balance of size (large, medium, and small markets by volume) as well as customer base; 11 KIIs; 195 IDIs with HC tradesmen; FGDs with 47 DRP
Refugee influx Emergency Vulnerability Assessment (REVA)	2019	6	WFP	WFP	Grey	Eco- nomic Devel- opment	Quant; 2,593 DRP and HC households surveyed

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Title	Year	EA Score	Journal/ Organization/ Institution	Authors	Doc type	Theme	Method
Education & Child Protection in Emergencies Joint Rapid Needs Assessment Rohingya Refugee Response 2017	2017	5	Cox's Bazar Education Sector and Child Protection Sub-Sector	Zeynep M. Turkmen Sanduvac	Grey	Educa-tion	Mixed; 185 KIIs with DRP household (parents, majority mothers or care-givers), community representatives (Mahjis) and religious leaders, & school informants (teachers); Direct Observation: data collection from each site to triangulate and validate the KIIs data collected
Joint Educa-tion Needs Assessment	2018	5	Cox's Bazar Education Sector	Cox's Bazar Education Sector	Grey	Educa-tion	Mixed; household survey of 1,554 DRP households; FGDs with teachers as well as adolescent children aged 12 to 18; 10 sites via purposive sampling across all camps; 36 interviews were conducted with adolescent girls and boys; 12 interviews with teachers
Education capacity self-assessment: Transforming Education Humanitarian Response to Rohingya Refugee Crisis	2018	4	Rohingya Refugee Education Response	Henry Renna Gallano	Grey	Educa-tion	Mixed; assessment informed by the Shifting the Power Project (Start Network, 2017) and Strategic Humanitarian Assessment & Participatory Empowerment Framework (SHAPE Framework, 2017) to support local organizations to assess capacity to manage humanitarian programs
Education Needs Assessment (ENA)	2019	5	REACH	Pascaud, Yannick and Panlilio, Rafael	Grey	Educa-tion	Mixed; survey of 4,397 caregivers stratified by camp, covering 33 out of 34 camps; random sample of 428 learning centres examined and short survey of teachers and instructors; 22 FGDs with parents and teachers
Childhood Interrupted: Children's Voices From The Rohingya Refugee Crisis	2018	5	World Vision; Save the Children; Plan International	Eline Severi-jnen and Linda Ridwan Steinbock	Grey	Educa-tion	Qual; IDIs with 200 children and 40 mothers; 60 children and 10 mothers were from HC and 140 children and 30 mothers were from the DRP communities

Title	Year	EA Score	Journal/ Organization/ Institution	Authors	Doc type	Theme	Method
I don't have any aspiration because I couldn't study: Exploring the educational barriers facing adolescents in Cox's Bazar	2020	6	GAGE ODI	Guglielmi, Silvia, Nicola Jones, Jennifer Muz, Sarah Baird, Mitu Khadija, and Muhammed Ala Uddin	Grey	Educational	Mixed; Survey data from CBPS sample of 2,280 adolescent girls and boys and their caregivers; qualitative data from sub-sample of 149 DRP an HC adolescents, their families and communities; KIs with service providers and programme and policy actors
Livelihoods of Rohingyas and their impacts on deforestation	2018	4	Deforestation in the Teknaf Peninsula of Bangladesh (Book)	MZ Rahman	Peer reviewed	Environmental	Qual; 125 DRP household heads randomly selected from a total of 980 DRP households; 65 DRP household heads of Kerontoli village of Teknaf, which is located alongside the Naf River interviewed and FGDS.
Report on Environmental Impact of Rohingya Influx	2018	3	UNDP Bangladesh and UN WOMEN Bangladesh	UNDP Bangladesh and UN WOMEN Bangladesh	Grey	Environmental	Qual; Method informed by UNDP's Social and Environmental Standards (2015) and UNHCR's Environmental Guidelines. Data from existing UN surveys (field surveys on water sampling and HC and DRP questionnaire about use of wood, wildlife and poaching), GIS, maps, images, etc.
Application of geospatial technologies in developing a dynamic landslide early warning system in a humanitarian context: the Rohingya refugee crisis in Cox's Bazar, Bangladesh	2020	6	Geomatics, Natural Hazards and Risk	Ahmed, Bayes, Md. Shahinoor Rahman, Peter Sammonds, Rahenul Islam, and Kabir Uddin.	Peer reviewed	Environmental	Quant; A novel method, combining landslide inventory and susceptibility maps, rainfall thresholds and dynamic web-based alert system, has been introduced to develop the landslide early warning system (EWS) by applying advanced geoinformation techniques.
Machine learning for predicting landslide risk of Rohingya refugee camp infrastructure	2020	6	Journal of Information and Telecommunication	Ahmed, Nahian, Firoyze Adnan, and Rashedur M Rahman.	Peer reviewed	Environmental	Quant; machine learning used for predicting landslide risk of camp infrastructure using geospatial features and algorithms

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Title	Year	EA Score	Journal/ Organization/ Institution	Authors	Doc type	Theme	Method
Solar Energy Development and Social Sustainability: A Case Study on the Teknaf Solar Power Plant in Bangladesh	2020	3	Journal of Asian Energy Studies	Ahmed, Zafrin Liza, Hajera Aktar, and Mohammad Rakibul.	Peer reviewed	Environmental	Qual; four FGDs with HC (salt farmers, salt distributors, salt transporters, beggars, local shopkeepers, rickshaw pullers, and CNG drivers) and stakeholders (guards of the project, local NGO workers, and local service holders); seven follow-up IDs with HC; KIs with HC leaders
Safe Access to Fuel and Energy (SAFE) Rapid Assessment	2017	5	WFP	WFP	Grey	Environmental	Mixed; data from secondary data research, key stakeholders consultations, semi-structured interviews, participant observation and a SAFE Household assessment; 242 HC and DRP (52% male and 48% female) randomly selected to complete assessment
COVID-19 Outbreak: Rapid Gender Analysis	2020	3	ISCG Gender Hub in collaboration with UN Women, CARE and Oxfam	Marie Toulemond	Grey	Gender	Qual; based on a secondary data review of country-level and response-level resources from humanitarian organizations, sectors, and government.
The lives they lead: Exploring the capabilities of Bangladeshi and Rohingya adolescents in Cox's Bazar, Bangladesh	2019	6	GAGE ODI	Guglielmi, Silvia , Jennifer Muz, Khadija Mitu, Muhammed Ala Uddin, Nicola Jones, Sarah Baird, and Elizabeth Presler-Marshall	Grey	Gender	Mixed; sub-sample from CBPS (n = 2,059); 149 adolescents, their families and their communities, using a variety of interactive individual and group in-depth qualitative approaches
ADOLESCENT ROHINGYA GIRLS IN BANGLADESH: ONE YEAR ON	2018	3	Monash University	ELEANOR GORDON, HANNAH JAY AND KATRINA LEE-KOO	Grey	Gender	Qual; interviewed DRP adolescent girls and their families

Title	Year	EA Score	Journal/ Organization/ Institution	Authors	Doc type	Theme	Method
Summary Analysis of Consultations with Women on Elections	2019	3	Gender in Humanitarian Action Working Group Women's Leadership Task Force; United Nations Entity for Gender Equality and the Empowerment of Women; UNHCR	Gender in Humanitarian Action Working Group Women's Leadership Task Force; United Nations Entity for Gender Equality and the Empowerment of Women; UNHCR	Grey	Gender	Qual; Questionnaire used along with consultations with women on upcoming elections, related to camps where elections are yet to take place and where they have already taken place – a total of 41 FGDs conducted with women from 16 camps.
Polymorphous Discrimination: Rohingya Women in the Goggles of Intersectionality	2020	4	SSRN	Bentil, Shadrack and Edmund Poku Adu	Peer reviewed	Gender	Qual; authors apply intersectionality theory to the ordeal of Rohingya women in Rakhine State in Myanmar to identify the grounds on which Rohingya women are methodically discriminated
Child marriage practices among the Rohingya in Bangladesh	2020	6	Conflict and Health Journal	Melnikas, Andrea J., Sigma Ainul, Iqbal Ehsan, Eashita Haque, and Sajeda Amin	peer reviewed	Gender	Qual; 48 IDIs and 12 FGDs with DRP adolescents and young adults (14-24 years old); KII with 24 services providers; KII with HC
The Rohingya Refugee Crisis of Bangladesh: Gender Based Violence and the Humanitarian Response	2019	3	Open Journal of Political Science	Goodman, Anne Kathryn, and Iftekhar Mahmood	peer reviewed	Gender	Qual; summarizes evidence on what is known of the Rohingya experience and the humanitarian response
Women Leading Locally: Exploring women's leadership in humanitarian action in Bangladesh and South Sudan	2020	5	Oxfam	Jayasinghe, Namalie, Momotaz Khatun, and Moses Okwii.	Grey	Gender	Qual; in Bangladesh total of 19 interviews and 5 FGDs were conducted. Of these interviews, 12 were held in Cox's Bazar (7 women, 5 men) and 7 in Dhaka (2 women, 5 men). Three out of the 5 FGDs were held in Cox's Bazar (8 women, 20 men), while the other 2 were conducted in Dhaka (10 women, 5 men)

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Title	Year	EA Score	Journal/ Organization/ Institution	Authors	Doc type	Theme	Method
Status of Rohingya Refugees in Bangladesh: A Comparative Study with Emphasis on Aspects of Women and Girls in Camps of Kutupalong, Cox's Bazar, Bangladesh	2020	4	Open Access Library Journal	Karin, Shahnam, Md. Arif Chowdhury, and Ishrat Shamim	Peer reviewed	Gender	Qual; This rapid assessment documents evidence around the role of GBV as both a strategy of persecution and a pervasive threat to women in humanitarian crisis.
THE IMPLEMENTATION OF RESPONSIBILITY TO PROTECT AGAINST ROHINGYA WOMEN	2020	4	International Journal of Social Science Research	Zakaria, Hairunnisa, and Noraini Zulkafli	Peer reviewed	Gender	Qual; 32 respondents; IDIs with Rohingya women and experts working on DRP issues and GBV (professional or lecturers who study in-depth a field, NGO, and journalist directly involved in this crisis)
Gender-Based Vulnerability: Combining Pareto ranking and geo-statistics to model gender-based vulnerability in Rohingya refugee settlements in Bangladesh	2020	6	Research Square	Nelson, Erica L., Daniela Reyes Saade, and P. Gregg Greenough	Peer reviewed	Gender	Quant; vulnerability index designed through literature review, variable selection and thematic grouping, normalization, and scorecard creation; Pareto ranking was employed to rank sites based on vulnerability scoring; Spatial autocorrelation of vulnerability was analysed with the Global and Anselin Local Moran's I applied to both combined vulnerability index rank and disaggregated thematic ranking.
COVID-19: Bangladesh Multi-Sectoral Anticipatory Impact and Needs Analysis	2020	4	Needs Assessment Working Group BANGLADESH, CARE, UNOPS, UK Aid	Needs Assessment Working Group BANGLADESH	Grey	Health	Mixed; Purposive sampling was done to conduct structured interview of the community from diversified socio economic and livelihood groups, complemented by additional KIIs
RAPID MENTAL HEALTH AND PSYCHOSOCIAL NEEDS ASSESSMENT	2018	4	IOM	IOM	Grey	Health	Mixed; 229 Rohingya participated in FGDs; participants were randomly selected; KIIs with 40 DRP community leaders and 56 KIIs with health workers in DRP camps

Title	Year	EA Score	Journal/ Organization/ Institution	Authors	Doc type	Theme	Method
Neglected suffering: The unmet need for palliative care in Cox's Bazar	2018	5	World Child Cancer	Doherty, Megan, and Farzana Khan	Grey	Health	Qual; IDIs with DRP children and adults living with chronic illness; family members; caretakers; KIIs with health workers
Illness-related suffering and need for palliative care in Rohingya refugees and caregivers in Bangladesh: A cross-sectional Study.	2020	5	PLOS Medicine	Doherty, Megan, Liam Power, Mila Petrova, Scott Gunn, Richard Powell, Rachel Coghlan, Brett Sutton Liz Grant, and Farzana Khan.	Peer reviewed	Health	Qual; a cross-sectional study of individuals with serious health problems (n = 156, 53% male) and caregivers (n = 155, 69% female) living in DRP camps using convenience sampling to recruit participants at the community level
Rapid Protection, Food Security and Market Assessment	2017	6	Oxfam	Oxfam	Grey	Health	Qual; 23 Focus Group Discussions (FGDs) (11 male-only and 12 female-only), 169 trader surveys, and spoke with 66 Key Informants across Ukhiya and Teknaf Upazilas.
Water, Sanitation and Hygiene Baseline Assessment	2018	6	REACH	REACH	Grey	Health	Quant; REACH worked with UNICEF to provide a baseline on WASH conditions in all recognised Rohingya assessment. This was a household survey covering 3,576 DRP households across all 35 recognised camps. Conducted during the driest point of the year in April 2018, the assessment provides data that is statistically representative at the camp level and for the response as a whole.
Water, Sanitation and Hygiene Assessment Monsoon Follow-up, Cox's Bazar	2018	5	REACH	REACH	Grey	Health	Quant; follow-up survey took the form of a household survey covering 33 camps; Only statistically significant comparisons between are reported on
Water, Sanitation and Hygiene Follow-up Assessment Dry Season	2019	5	REACH	REACH	Grey	Health	Quant; follow-up DRP household survey covering 33 camps (3,563 households)

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Title	Year	EA Score	Journal/ Organization/ Institution	Authors	Doc type	Theme	Method
Water, Sanitation and Hygiene Follow-up Assessment Monsoon Season	2019	5	REACH	REACH	Grey	Health	Quant; follow-up survey in 33 camps, where 3,563 households were surveyed
Water, Sanitation and Hygiene (WASH) Household Monsoon Follow-up	2019	5	REACH	REACH	Grey	Health	Quant; follow-up survey; data collected across all 33 camps, where a total of 421 households were surveyed
Effectiveness of water chlorination programs along the emergency-post-emergency continuum: Evaluations of bucket, in-line, and piped water chlorination programs in Cox's Bazar	2020	5	Water Research	Sikder, Mustafa; Stringa, Gabrielle; Kamal, Yarmina; Farrington, Michelle; Rahman, ABM Sadiqur; Daniele Lantagne	Peer reviewed	Health	Mixed; key informant interviews, water point observations, focus group discussions, household surveys, and water quality testing
How will my life be?: Psychosocial well-being among Rohingya and Bangladeshi adolescents in Cox's Bazar	2020	6	ODI GAGE	Guglielmi, Silvia, Nicola Jones, Jennifer Muz, Sarah Baird, Khadija Mitu, and Muhammed Ala Uddin	Grey	Health	Qual; a subsample from CBPS of 149 Rohingya and Bangladeshi adolescents, their families and communities, using interactive tools with individuals and groups
Breastfeeding support through wet nursing during nutritional emergency: A cross sectional study from Rohingya refugee camps in Bangladesh	2019	6	PLOS One	Azad, Faria; Rifat, M. A.; Manir, Mohammad Zahidul; Biva, Nushrat Alam	Peer reviewed	Health	Qual; demographics, IYCF-E knowledge, wet nursing support, type of constraints faced, and possible ways to overcome such constraints was collected through face-to-face interviews with 24 conveniently selected wet nurses. Linear regression was used to analyse the associations.
Effective maternal, newborn and child health programming among Rohingya refugees in Cox's Bazar, Bangladesh: Implementation challenges and potential solutions	2020	5	PLOS One	Sarker, Malabika, Avijit Saha, Mowtushi Matin, Saima Mehjabeen, Malika Asia Tamim, Alyssa B. Sharkey, Minjoon Kim, Relevance U. Nyankesha, and Yulia Widiati.	Peer reviewed	Health	Qual; conducted 34 interviews (15 KIIs and 19 IDIs) with respondents from different organizations working on MNCH service delivery in DRP camps

Title	Year	EA Score	Journal/ Organization/ Institution	Authors	Doc type	Theme	Method
Prevalence of Eye Problems among Young Infants of Rohingya Refugee Camps: Findings from a Cross-Sectional Survey	2020	6	Trop. Med. Infect. Dis.	Hussain, Enayet, Zunayed Al Azdi, Khaleda Islam, ANM Ehtesham Kabir, and Rumana Huque	Peer reviewed	Health	Quant; cross-sectional survey among 670 infants (0-59 days old) born in Rohingya camps between March and June of 2019
Marriage and sexual and reproductive health of Rohingya adolescents and youth in Bangladesh: A qualitative study	2018	5	Population Council	Ainul, Sigma, Iqbal Ehsan, Eashita F Haque, Sajeda Amin, Ubaidur Rob, Andrea J Melnikas, and Joseph Falcone	Grey	Health	Qual; IDIs and FGDs with Rohingya adolescent girls and boys, community leaders, Rohingya women, service providers and program personnel from public sector, development organizations, and national and international NGOs working with Rohingya
WASH Qualitative: Menstrual Hygiene Management Needs	2019	5	REACH	WASH Sector Cox's Bazar et al.	Grey	Health	Qual; 19 FGDs with 85 male and 95 female participants; Purposive sampling by gender and location aimed to capture as much diversity of perceptions as possible within time and resources constraints.
Appropriate Infant and Young Child Feeding Practices in an Emergency for Non-Breastfed Infants Under Six Months: The Rohingya Experience	2020	4	Journal of Human Lactation	Burell, Alice; Kueter, Anne; Ariful, Sujan; Rahman, Habibur; Lellamo, Alessandro; Motthabir, Golam	Peer reviewed	Health	Quant; retrospective analysis was conducted with data from Save the Children International's infant and young child feeding in emergencies interventions for the Rohingya Response; sample was infants under 6 months identified as not breastfed during the initial assessment (N = 15).

Title	Year	EA Score	Journal/ Organization/ Institution	Authors	Doc type	Theme	Method
Burden of eye disease and demand for care in the Bangladesh Rohingya displaced population and host community: A cohort study	2020	6	PLOS Medicine	Munir Ahmed,- Noelle Whites- tone, Jennifer L. Patnaik, Moham- mad Awlad Hossain, Lutful Husain, Mohammed Alauddin, Mushfiquir Rahaman, David Hunter Cherwek, Nathan Congdon, Danny Haddad	Peer reviewed	Health	Quant; data from 48,105 Rohingya (70.3%, among whom 71.6% were children and 46.5% women) and 20,357 HC (29.7%, 88.5% children, 54.4% women) who underwent vision screening.
COVID-19: Pro- jecting the Impact in Rohingya Refugee Camps and Beyond	2020	3	SSRN	Truelove, Shaun, Orit Abraham, Chiara Altare, Stephen A. Lauer, Krya H. Grantz, Andrew S. Azman, and Paul Spiege.	Peer reviewed	Health	Quant; projec- tions based on simulations using stochastic disease transmission model; estimates of daily infection rates, etc. based on three sce- narios/ assumptions
Food transfers, electronic food vouchers and child nutritional status among Rohingya children living in Bangladesh	2019	6	PLOS One	Hoddinott, John, Mateusz Filipski Paul Dorosh, Gracie Rosenbach, and Ernesto Tiburcio.	Peer reviewed	Health	Quant; associa- tional study using cross-sectional data. We measured heights and weights of 523 children aged between 6 and 23 months in house- holds receiving either a food ration consisting of rice, pulses, vegetable oil (362 children) or an e-voucher (161 children) that could be used to purchase 19 different foods.
Immunogenic- ity of a killed bivalent whole cell oral cholera vaccine in forcibly displaced Myan- mar nationals in Cox's Bazar, Bangladesh	2020	5	PLOS Neglected Tropical Diseases	Chowdhury et al., 2020	Peer reviewed	Health	Quant; cross-sec- tional immunoge- nicity study was conducted among FDMNs of three age cohort; in adults (18+years; n = 83), in older children (6–17 years; n = 63) and in younger children (1–5 years; n = 80).

Title	Year	EA Score	Journal/ Organization/ Institution	Authors	Doc type	Theme	Method
Malnutrition trends in Rohingya children aged 6–59 months residing in informal settlements in Cox's Bazar District, Bangladesh: An analysis of cross-sectional, population-representative surveys	2020	5	PLOS Medicine	Leidman; Miah M.L.; A, Humphreys; Toroitich-van Mil L, Wilkinson C, Chelang'at KoechM	Peer reviewed	Health	Quant; Three cross-sectional population-representative cluster surveys were conducted, including all informal settlements of Rohingya refugees in the Ukhia and Teknaf Upazilas of Cox's Bazar District
Notes From the Field: Diarrhea and Acute Respiratory Infection, Oral Cholera Vaccination Coverage, and Care-Seeking Behaviours of Rohingya Refugees - Cox's Bazar, Bangladesh, October-November 2017	2018	4	MMWR Morb Mortal Wkly Rep	Summers, A., Humphreys, A., Leidman, E., Van Mil, L. T., Wilkinson, C., Narayan, A., MALD, Miah, M. L., Cramer, B. G., & Bilukha, O	Peer reviewed	Health	Quant; based on data from surveys that assessed diarrhea and acute respiratory infection (ARI)-associated morbidity in children aged 6–59 months and care-seeking behaviors of parents or caregivers for those children with diarrhea or ARI-associated morbidity, as well as receipt of at least one OCV dose in all persons aged ≥1 year.
Supporting maternal mental health of Rohingya refugee women during the perinatal period to promote child health and wellbeing: a field study in Cox's Bazar	2019	6	Intervention, Journal of Mental Health and Psychosocial Support in Conflict Affected Areas	Corna, Francesca, Fahmida Tofail, Mita Raniroy Chowdhury, and Cécile Bizouerne	Peer reviewed	Health	Quant; study aimed to evaluate the effects of a comprehensive psychosocial support intervention (PSI) among pregnant women of two official refugees camps in Cox's Bazar (N = 260). The research focuses on the effects of a three-month psychosocial intervention, mainly based on support groups.
Report on Demographic profiling and needs assessment of maternal and child health (MCH) care for the Rohingya refugee population in Cox's Bazar, Bangladesh	2018	6	ICDDR,B	ICDDR,B	Grey	Health	Quant; cross-sectional quantitative study design in 11 Rohingya camps; sample of 3,050 households that accounted for 16,588 DRP population

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Title	Year	EA Score	Journal/ Organization/ Institution	Authors	Doc type	Theme	Method
COVID-19: Socio-environmental challenges of Rohingya refugees in Bangladesh	2020	5	Journal of Environmental Health Science and Engineering	Shammi, Mashura; Rahman, Mushfiqur; Tareq, Shafi	Peer-Reviewed	Health	Quant; WASH scenario of the Rohingya refugee camps were collected from the UNHCR documents. Air Particulate matter (PM2.5 & PM10) was collected by field survey in 2019 from Balukhali Rohingya refugee camp No- 7, 9 and 13 in Ukhia, Coxsbazar District. Perfect Prime Air quality detector AQ9600) has been used for determining the measurement of PM2.5 and PM10 during the cooking time at morning 7-11 am and after 4 h.
Assessment of immunity to polio among Rohingya children in Cox's Bazar, Bangladesh, 2018: A cross-sectional survey	2020	6	PLOS Medicine	Estivariz CF, Bennett SD, Lickness JS, Feldstein LR, Weldon WC, et al. (2020)	Peer reviewed	Health	Quant; total of 632 Rohingya children aged 1-6 years (younger group) and 7-14 years (older group) were selected using multi-stage cluster sampling in makeshift settlements and simple random sampling in Nayapara registered camp.
Infant and Young Child Feeding (IYCF) Practices, Household Food Security and Nutritional Status of Under-Five Children in Cox's Bazar, Bangladesh	2019	6	Curr Res Nutr Food Sci	Abdullah A. A, Rifat M. A, Hasan M. D. T, Manir M. Z, Khan M. M. M, Azad F.	Peer reviewed	Health	Quant; The study employed a cross sectional approach. A total of 300 households with at least one 6-59 month old child were randomly selected by two stage cluster sampling in 2014. Data was collected through direct interviews with the participants using a semi-structured questionnaire.

Title	Year	EA Score	Journal/ Organization/ Institution	Authors	Doc type	Theme	Method
Quantifying the success of measles vaccination campaigns in the Rohingya refugee camps	2020	6	Epidemics	Chin, Taylor, Caroline O. Buckee, and Ayesha S. Mahmud.	Peer reviewed	Health	Quant; estimate of key epidemiological parameters using a dynamic mathematical model of measles transmission to evaluate the effectiveness of the reactive vaccination campaigns in the refugee camps; data includes 1708 confirmed and suspected cases of measles and rubella during the time period of the study.
Vaccination coverage survey and seroprevalence among forcibly displaced Rohingya children, Cox's Bazar, Bangladesh, 2018: A cross-sectional study	2020	6	PLOS Medicine	Feldstein, Leora R., et al.	Peer reviewed	Health	Quant; cross-sectional serologic and vaccination coverage survey in Nayapara Registered Refugee Camp ("Nayapara") and makeshift settlements (MSs) April 28, 2018 to May 31, 2018, among 930 children aged 6 months to 14 years.
Real-time analysis of the diphtheria outbreak in forcibly displaced Myanmar nationals in Bangladesh	2019	6	BMC Medicine	Finger et al. 2019.	Peer reviewed	Health	Quant; a total of 2624 cases (495 from Kutupalong (attack rate 0.12%), 1868 from Balukhali (attack rate 0.97%) and 261 from other or unknown nearby locations) presented at the Diphtheria Treatment Centre in Balukhali run by MSF; modelled diphtheria transmission dynamics using an age- and location-stratified deterministic compartmental model, which followed a susceptible-exposed-infective-recovered (SEIR) structure.
Risk factors associated with Acute Respiratory Infection (ARI) among children under 10-years in Rohingya refugee camp	2020	7	Recent Research in Science and Tech.	Oishi, Shafiqua Nawrin, and Nazmul Alam	Peer reviewed	Health	Quant; Cross Sectional Exploratory Study; The number of the participants was 259, with 135 male and 124 female children; survey via interviewing mothers of children

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Title	Year	EA Score	Journal/ Organization/ Institution	Authors	Doc type	Theme	Method
Screening for malaria antigen and anti-malarial IgG antibody in forcibly-displaced Myanmar nationals: Cox's Bazar district, Bangladesh, 2018	2020	7	Malaria Journal	Lu, Austin, Olivia Cote, Silvia D. Dimitrova, Gretchen Cooley, A. Alamgir, M. Salim Uzzaman, Meerjady Sabrina Flora, et al.	Peer reviewed	Health	Quant; blood samples from 1,239 DRP children (age 1-14) under household survey across three camps; samples tested for antigens
Accountability Assessment Rohingya Response Bangladesh	2018	3	Christian Aid and Gana Unnayan Kendra (GUK)	Christian Aid and Gana Unnayan Kendra (GUK)	Grey	Humanitarian accountability	Mixed; survey of 194 DRP women and 179 men (373 total) in one camp; KIIs with DRP community leaders and service providers.
Bulletin Rohingya: Feedback and relationships	2019	3	Ground Truth Solutions	Ground Truth Solutions	Grey	Humanitarian accountability	Quant; surveys conducted with 1,034 Rohingya in 30 camps in Ukhiya and Teknaf; margin of error reported .04 for 95% confidence intervals for the Likert-scale questions and .03 for the binary questions.
Bulletin Rohingya: Needs and services	2019	3	Ground Truth Solutions	Ground Truth Solutions	Grey	Humanitarian accountability	Quant; surveys conducted with 1,034 Rohingya in 30 camps in Ukhiya and Teknaf; margin of error reported .04 for 95% confidence intervals for the Likert-scale questions and .03 for the binary questions.
Cox's Bazar: Host Community- Multi-Sector Needs Assessment (MSNA)	2019	6	ISCG	ISCG	Grey	Multi-sectoral	Quant; total of 911 HC households (5,046 individuals) surveyed via phone across all 11 Unions of Teknaf and Ukhiya
Cox's Bazar: Joint Multi-Sector Needs Assessment (MSNA) Final Report on Host Communities in Teknaf and Ukhiya Upazilas	2019	6	ISCG	ISCG	Grey	Multi-sectoral	Quant; 1,321 HC households surveyed across 11 unions in Teknaf and Ukhiya using random sampling methodology; assessment provides findings that are statistically representative at the union level (with a 95% confidence level and 10% margin of error)

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Cox's Bazar: Joint Multi-Sector Needs Assessment (MSNA) Rohingya Refugees	2019	6	ISCG	ISCG	Grey	Multi-sectoral	Quant; 3,418 households surveyed across 34 camps using simple random sampling; findings statistically representative at the camp level (with a 95% confidence level and 10% margin of error).
The Rohingya in Cox's Bazar: When the Stateless Seek Refuge.	2018	5	Health and Human Rights Journals	Abhishek Bhatia, Ayesha Mahmud, Arlan Fuller, Rebecca Shin, K.A.M Morshed, Md. Azad Rahman Tanvir Shatil Mahmuda Sultana Satchit Balsari Jennifer Leaning	Peer-Reviewed	Multi-sectoral	Quant; randomized survey of 802 households (402 Rohingya households and 400 host community households); ample size calculation assumed a conservative proportion estimate of 50%, with a 5% margin of error
Multi-sectoral Needs Assessment Report – Rohingya Refugee Response	2018	5	UNHCR; REACH	UNHCR; REACH	Grey	Multi-sectoral	Mixed; random sample of households in 31 DRP settlements; 3,171 interviews completed (51% male and 49% female); data that is statistically representative at the camp level and for the response as a whole.
Digital ID in Bangladeshi refugee camps: A case study	2019	3	The Engine Room	Maxwell, Madeline, et al.	Grey	Security needs	Qual; 10 IDIs with key informants amongst the Rohingya refugee community, such as majhis and other community leaders, and a senior official from the Bangladeshi Government's Refugee Relief and Repatriation Commission (RRRC); 10 FGDs with Rohingya sub-communities, including especially vulnerable groups such as people with disabilities, elderly people, women whose husbands had been killed

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Title	Year	EA Score	Journal/ Organization/ Institution	Authors	Doc type	Theme	Method
Bulletin Rohingya: Safety and outlook	2019	3	Ground Truth Solutions	Ground Truth Solutions	Grey	Security needs	Quant; surveys conducted with 1,034 Rohingya in 30 camps in Ukhia and Teknaf; margin of error reported .04 for 95% confidence intervals for the Likert-scale questions and .03 for the binary questions.
Protection Needs and Trends Assessment For Refugee and Host Communities in Teknaf Sub-district	2018	4	Inter-Agency	Inter-Agency	Grey	Security needs	Qual; 105 interviews with 592 participants; KIs and FGDs conducted
Camp Settlement and Protection Profiling	2018	4	UNHCR; REACH	UNHCR; REACH	Grey	Security needs	Quant; quantitative household survey in 33 Rohingya refugee settlements; Findings are representative at the settlement level with a 95% confidence level and 2% margin of error.



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