EXECUTIVE SUMMARY

INTEGRATED SMART NUTRITION BASELINE SURVEY

DHAKA URBAN SLUMS,
NORTH AND SOUTH CITY CORPORATION, BANGLADESH

May-June 2022

WFP World Food Programme

CONCERN worldwide

Irish Aid
Rialtas na hÉireann
Government of Ireland

ACTION AGAINST HUNGER
ACTION CONTRE LA FAIM

In collaboration with:

National Nutrition Services
Ensuring Nutrition Services to All

KEY HIGHLIGHTS

- **Global Acute Malnutrition** (GAM) rate among children was found to be above the emergency thresholds **("Very High")** of >15% in DSCC slums and remained in the second highest category **("High")** in DNCC slums.
- **Chronic malnutrition** (stunting) among children was found to be above the Very High/ Critical WHO/UNICEF thresholds of >30% in DSCC slums and remained in the second highest category of >20% **("High")** in DNCC slums.
- **Boys and older children** (24-59 months) were more undernourished in all forms of malnutrition (e.g. wasting, stunting and underweight) compared to girls and younger children (6-23 months).
- **Diarrhoea prevalence** (DSCC- 20.1%, DNCC- 16.0%) among children 6-59 months was **relatively high** compared to the national average rate of 5.0% and was more prevalent among younger children.
- **Poor infant and young child feeding (IYCF) practices** varied with optimal and sub-optimal levels in both locations.
- **Vitamin A** supplementation coverage found to be **below the national average (79**%), except for measles vaccination (>85.0%) and deworming coverage (>64%) were found to be above the national average.
- **Less intake of micronutrient powder (MNP)** among children 6-59 months during previous days (<1.0%).
- **Crude and under-five mortality rates** are well below emergency levels.
- **Accessing Antenatal Care (ANC) services** among pregnant women were found to be relatively high (>=85%) but i**ron folic acid intake was reported low.**
- **ANC and PNC checkups** were optimal for at least one visit but were reported **very low for at least four visits** in both locations.
- Low wasting prevalence was found among pregnant and lactating women.
- **One- fourth households** reported with **medium or severe food insecure** who negatively adopted the situation through consumption-based coping strategies to deal with food shortages. This affects both the quantity and quality of food consumed.
- Households (>95.0%) access to drinking water were optimal but there remains concern about the supply of water quality.
- **Poor hand washing practices with soap during critical times expect** after defecation and disposing of child feaces.
- Sanitation continues to be an issue in DNCC slums as contents of latrines are **mixed with nearby drain** or water bodies with high risk of contamination of water borne disease.
- Unsafe disposal of child feaces also remains a concern in both locations which makes children susceptible to diseases transmitted via the fecal-oral route.

BACKGROUND AND OBJECTIVES

In Bangladesh, the urban context has its unique characteristics and complexities. Considering the basic causes and underlying causes of malnutrition, there would be differences between children residing in rural households compared to a household in congested slums or on a pavement. The malnutrition levels among children and pregnant and lactating women (PLW) living in extreme poor households in urban slums are expected to be high. Meanwhile, the COVID-19 pandemic affected not only the health situation, but also had a profound impact on many spheres: political, social, human, environmental, economic and infrastructural. There is a high risk of further deterioration of health and nutrition situation, access to health and nutrition services because of the pandemic, increased cost of living and the potiential impact on food security and nutrtion.

However, there is a lack of nutritional data for children under five and PLW living in the urban slums. Previous national level surveys also focused on rural and urban areas; hence, there is data scarcity specifically for urban slums. Therefore, it was essential to evaluate its adverse effect on health and nutrition that will support the identification of a potential deterioration of access to and/or coverage of nutrition services, and deterioration of nutrition outcomes due to specific factors linked to COVID-19 pandemic.

In May-June 2022, Action Against Hunger Bangladesh in partnership with Concern Worldwide and World Food Programme conducted two independent integrated Standardized Monitoring and Assessment of Relief and Transitions (SMART) nutrition surveys in Dhaka North City Corporation (DNCC) and South City Cooperation (DSCC) slums. National Nutrition Services (NNS), MoHFW and respective City Corporations authorized these assessments.

The main objective of these assessments was to determine nutrition status (e.g. wasting/acute malnutrition, stunting and underweight) of children under 5 years of age, pregnant and lactating women (PLWs). The study also aimed to determine possible causal factors for better understanding of the malnutrition situation in the slums that might have deteriorated due to the impact of COVID-19. The collected data included: household demography, anthropometry, morbidity, mortality, infant and young child feeding practices (IYCF), vitamin A, measles vaccination, and deworming coverage among children, access to antenatal care (ANC) and iron supplementation among pregnant women including ANC and post-natal care (PNC) checkups during the last pregnancy, food security, and Water Sanitation and Hygiene (WASH).

The assessment findings and recommendations will inform timely and effective multi-sectoral interventions as well as support stakeholders for necessary changes in their programme policies or interventions.

KEY FINDINGS

I. MALNUTRITION SITUATION

The Global Acute Malnutrition (GAM) rate **exceeds the emergency thresholds[1] of ≥ 15%** (Very High) in DSCC slums (18.4%) and remains within the second highest tier "High 10-15%" in DNCC slums (12.8%). The study also indicated that children above two years of age were more vulnerable to acute malnutrition. This rate is significantly higher in DSCC slums compared to DNCC.

Among the identified malnourished children, none of them was enrolled in any treatment programmes. This is due to a lack of systematic community screening, diagnosis, referral and treatment facilities. The assessment team has referred identified acute malnourished children to nearest health facilities or SAM corners.

Acute malnutrition by weight for height (WFH) and MUAC are poorly correlated in Bangladesh, including the slum areas. This indicates that if using only one indicator (e.g. MUAC with global thresholds <125mm) for screening, diagnosis and treatment, a significant number of acutely malnourished children remained undiagnosed or undetected.

Therefore, it is important to use both indicators (e.g. WHZ, MUAC and Oedema) for the diagnosis, treatment, and follow-up of acute malnutrition to ensure no vulnerable children remains out of nutrition interventions, especially where concordance between WHZ and MUAC is poor. Alternatively, the overall MUAC cut-off for referral can be raised in an effort to capture more GAM by WHZ if full anthropometric measurement is not possible due to lack of resources[2].

Table 1: Prevalence of acute malnutrition (wasting), Dhaka urban slums, Bangladesh

Indicators	Prevalence	DSCC slums	DNCC slums	P value**
Acute Malnutrition by Weight for Height Z-score (WHZ)	GAM	**18.4%** [14.7 - 22.9]	**12.8%** [10.1 - 16.1]	**0.027**
	MAM	**16.9%** [13.5 - 21.0]	**10.5%** [8.4 - 13.2]	**0.004**
	SAM	**1.5%** [0.8 - 3.1]	**2.3%** [1.4 - 3.7]	0.279
Acute Malnutrition by Mid Upper Arm Circumference (MUAC)	GAM	**2.0%** [1.1-3.6]	**2.8%** [1.7 - 4.7]	0.383
	MAM	**1.3%** [0.6 – 2.8]	**2.8%** [1.7 - 4.7]	0.082
	SAM	**0.7%** [0.2 - 2.0]	**0.0%** [0.0 – 0.0]	0.111
Acute Malnutrition By combined criteria (WHZ and/or MUAC and /or oedema)	Combined GAM	**18.8%** [15.1-23.1]	**13.7%** [10.9 - 17.1]	**0.046**
	Combined MAM[3]	16.8%	11.4%	NA
	Combined SAM	**2.0%** [1.1 - 3.6]	**2.3%** [1.4 - 3.7]	**0.715**

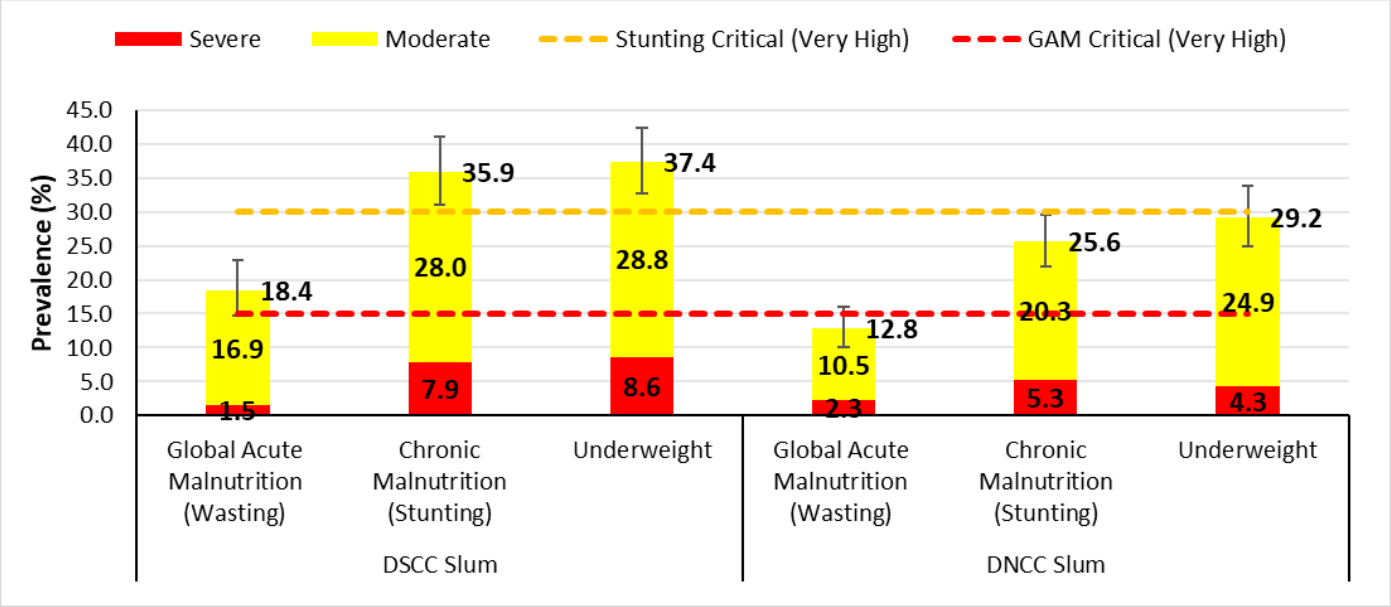
*No oedema cases were found in the survey. **P value <0.05 indicant significant difference.

1 WHO/UNICEF public health emergency thresholds for the prevalence of wasting, overweight and stunting in children under 4 years, August 2018

2 Miah, L (2020), https://www.ennonline.net/fex/63/whzmuacbangladesh

3 Based on manual calculation since Emergency nutrition Assessment (ENA) software only provides point prevalence including confidence internal for combined GAM and combined SAM.

Figure 1: Prevalence of Global, Moderate and Severe Wasting, Stunting and Underweight (6-59 m), May-June 2022, Dhaka Urban Slums, Bangladesh



Chronic malnutrition (stunting) remains very high (**above the >30 critical/very serious category**) in DSCC and high (within 20-30%) in DNCC slums according to the WHO/UNICEF classification. Older children are more stunted than the younger age group of 6-23 months which is aligned with the general observation of acute malnutrition. More efforts are needed to bring chronic malnutrition rate to acceptable levels.

However, considering aggravating factors, including COVID-19's effects on food security, nutrition, market dynamics, livelihoods and other morbidities, the prevalence could further deteriorate and continue remaining over to the highest category of "**very high/ critical"** (above 15% acute malnutrition), especially in the monsoon season.

Therefore, the need for concerted efforts, close monitoring and strengthening of the nutrition interventions as well as multi-sectoral efforts to address malnutrition cannot be overstated.

By contrast, acute malnutrition prevalence in pregnant and lactating women (0-23 months) based on MUAC is low (DSCC-3.4%, DNCC-3.9%) although it was **more prevalent among PLW having children <6 months** (DSCC-5.1%, DNCC-7.0%). This suggests that the causes and drivers of malnutrition in women may be different from that of children although they live in the same environment. This discrepancy could be investigated through further in depth study e.g. nutrition casual analysis.

II. HEALTH SITUATION

The health situation is stable as confirmed by **crude and under-five mortality rates** which are well below the emergency levels of above 1 and 2 deaths per 10,000 population per day for crude and under-five mortality rates respectively. However, under 5 death rate was comparatively higher in DSCC slums than DNCC.

Table 2: Crude and under 5 death rate, Dhaka Urban Slums, Bangladesh

Indicator	DSCC Slums	DNCC Slums
Crude death rate	0.19 [0.10-0.38]	0.12 (0.05-0.27)
Under 5 death rate	0.63 [0.20-1.93]	0.16 [0.02-1.17]

Incidence of diarrhoea episodes among children 6-59 months based on two-week recall periods was relatively high compared to the national average rate of 5.0% **(DSCC-20.1%, DNCC-16.0%)**, probably due to poor sanitation, especially stagnant water caused by poor drainage systems observed in the slums, and lack of access to safe drinking water. Diarrhoea incidence was more prevalent among **younger children.** Almost all children received treatment of diarrhoea (94.6% in DSCC and 98.8% in DNCC).

Vitamin A supplementation within the last six months (verified by card and recall by the mother in children aged 6-59 months) was **below the national average (79.0%)** in both DSCC (74.2%) and DNCC (71.2%) slums.

Measles vaccination coverage among children 9-59 months confirmed by card and caregivers' recall was **above** (86.0% in both location) **the national average** of 83.1% but still **below the SPEHRE standard of 95**%.

Deworming coverage among children 24-59 months within the last six months was also found **lower in the** slums settings (DSCC-64.2%; DNCC-67.6%) **above the national rate** of 46.0%.

General observation and discussions with mothers and caregivers indicate that mothers are not well aware about vaccination and campaign schedule, additional charges for child vaccination often demotivate families to receive the vaccine, and no one else in the households brings their child to the campaign center which affected programme coverage.

Micronutrient powder (MNP) intake among children 6-59 months during previous days was found to be very low (<1.0%). No NGO was found to be providing MNP support in both areas.

Accessing ANC services among pregnant women were found to be relatively **high** across all survey locations (DSCC-88.7%, DNCC-84.1%) mainly from NGO health programme (more than 45%) followed by private clinic and government health centre (DSCC-22.6**%**, DNCC-2.9%).

Intake of Iron folic acid among pregnant woman is relatively **low**. Around two third of pregnant women are currently taking IFA tablets (DSCC-64.5%, DNCC-68.1%).

ANC and PNC checkups during the last pregnancy by any health care provider either at health facilities or home were found to be good for at least one visit but reported **very low** for at least four visits in both locations (**ANC checkups:** DSCC-42.6%, DNCC-42.2%; **PNC checkups:** DSCC-8.8%, DNCC-13.9%). Low percentage of PNC checkup compared to ANC raises question about the care of newborns.

III. INFANT AND YOUNG CHILD FEEDING PRACTICES (IYCF)

Despite methodological limitations, some key IYCF indicators were assessed to get an overall snap-shot of IYCF practices among the slums population. However, interpretation of some indicators should be made with caution due to the low sample size. The assessment revealed a mixed picture of optimal and sub-optimal results against the national average rate.

Timely initiation of breastfeeding was found to be closer to the national average of 69.0% (DSCC: 60.1% DNCC: 65.3%). Exclusively breastfeeding within two days of delivery among 0-23 month's children was found to be below 55% (DSCC-53.1%, DNCC-45.7%). Exclusive breastfeeding among children 0-5 months in DSCC slums (29.7%) was very low compared to DNCC slums (46.5%), both are below the national average of 65.0%.The intake of water, infant formula, and bottle feeding were commonly reported among children 0-5 month's children who were not exclusively breastfed.

All children were found to continue breastfeeding at 1 year whereas around 85% continued breast-feeding at 2 years in both locations which closely correspond with the national rate of 93.0% and 87% respectively. However, bottle feeding among children 0-23 months was still a concern in both locations (DSCC-28.6%; DNCC-31.8%) and higher than national rate of 16.0%.

Minimum acceptable diet was found to be above or closer to the national rate (35%) in DSCC (44.9%) and DNCC slums (36.1%) respectively. This indicates that more than half of the children aged 6-23 months didn't meet minimum acceptable diet meaning that children didn't not consume the recommended minimum five food groups following minimum meal frequency that are essential for proper growth and development. The observation and discussions with mothers and caregivers indicate that caregivers are often unable to give quality time to their children due to their business outside.

IV. HOUSEHOLD FOOD SECURITY

Reduced Coping Strategy Index **(rCSI)** and Food Insecurity Experience Scale (FIES) were employed to **understand** the different behaviors related to food consumption as a coping strategy with food shortage. It also helps to understand the level of food insecurity of households.

Reduced Coping Strategy Index (rCSI):

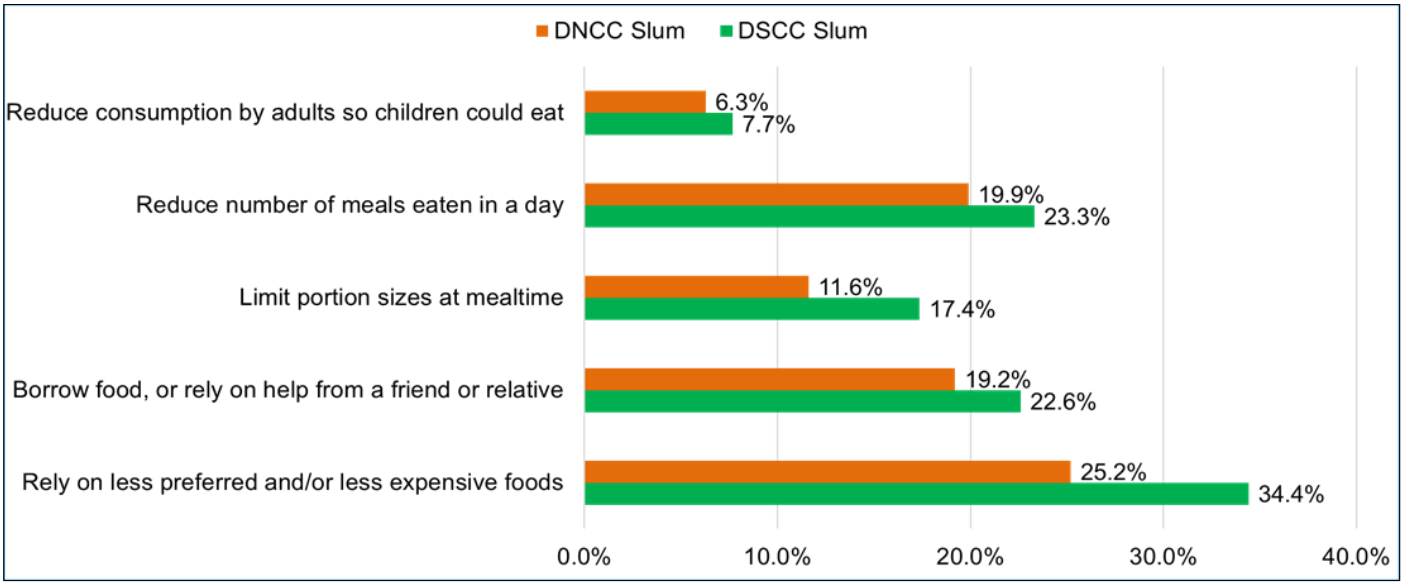
Approximately one-fourth households had **medium or severe** level of food insecurity who adopted consumption-based coping strategies to deal with food shortages (DSCC-15.1%, 12.1% and DNCC-13.9%, 7.8% respectively).

The study also revealed that there is a **positive relationship observed in DSCC slums between rCSI and malnutrition** cases meaning households more experienced with food based coping strategies are more tends to have malnourished children. However, no positive relation was observed in DNCC slums.

Table 3: Household food insecurity status based on rCSI, Dhaka urban slums, Bangladesh

Severity	DSCC Slum	DNCC Slum
No or low coping (0-3)	**72.9%** [66.8-78.2]	**78.3%** [75.0-81.3]
Medium coping (4-9)	**15.1%** [11.7-19.1]	**13.9%** [11.7-16.6]
High coping (>=10)	**12.1%** [9.2-15.6]	**7.8%** [6.3-9.8]
R value (Correlation between Malnutrition and rCSI)	0.14 Positive relation	-0.08 Negative relation

Figure 2: Households food based coping strategies over the last seven days, Dhaka urban slums, Bangladesh

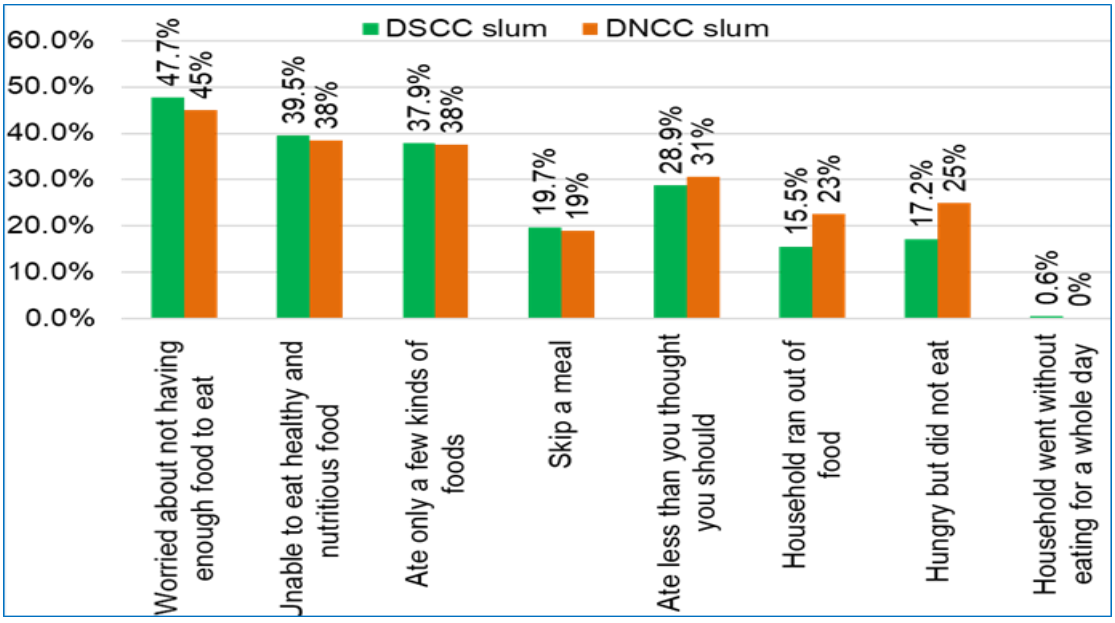


The most reported behaviour of coping strategies were **"rely on less preferred food"** followed by **"borrow food or rely on friend or relatives"** and "**reduced number of meals"**, limit portion size and **least reported strategies** was **"reduced consumptions by adults so children could eat".** All consumptions based copping strategies were comparatively higher among households living in DSCC slums compared to DNCC.

Food Insecurity Experience Scale (FIES)

Approximately **two third households** (DSCC-32.1%; DNCC-32.3%) experienced **moderate or severe levels** of food insecurity over the last 30 days due to lack of money or lack of other resources to buy food. **Among them, almost half** of the households were **worried** about not having enough food to eat; nearly **40%** households were unable to eat **nutritious food** and **ate less diversified** food. **This affects both the quantity and quality of food consumed.**

Figure 3: Food based Coping experience over last 30 days, urban slums, Dhaka, Bangladesh



V. WATER SANITATION AND HYGIENE (WASH)

Household access to drinking water

Majority of the households (>95.0%) reported access to drinking water either from Dhaka Water Supply and Sewerage Authority (WASA) or deep tubewell**.** However, approximately half of the households reported having challenges in accessing drinking water (DSCC-40.0%; DNCC-55.8%)**.** The highest reported problem was “bad smell and waste particle presence WASA supply water” followed by inadequate water supply, long waiting time at water collection point, lack of water storage utensils and long distance of water sources.

Household access to toilet facilities and soap

Approximately 90.0% households in DSCC have access to toilets that are piped with sewerage system while this percentage is very low about 49.4% in DNCC slums. **Nearly fifty percentage households (46.6%) in DNCC** slums used latrines that are **mixed with nearby drains** or water bodies that are at high risk of contamination by water borne disease. Household access to soap was also reported comparatively low in both locations (DSCC-76.8%, DNCC-89.6%).

Hand washing with soap during critical times

Frequent hand washing behaviour with soap among caregivers of children under five was reported to be very low in both locations **(**DSCC-46.1%; DNCC-34.7%). The handwashing behaviour with soap during critical times is also sub-optimal**.** Most of the mothers reported using soap mainly after defecation (>90%) and disposing of child feaces (>60%), other critical hand washing practices, for example, before cooking or serving, before eating and feeding or breast feeding was reported to be very low in both locations. This suggests that there is a lack of knowledge and awareness among mothers/ caregivers about critical hand washing practices with soap.

Management of child feaces

Proper disposal of child feaces remains a concern. About one-third of households with a child under five did not dispose child feaces safely, which makes children susceptible to diseases transmitted via the fecal-oral route.

Photo: Unhygienic living conditions in slum areas, Dhaka, Bangladesh.

RECOMMENDATIONS & PRIORITIES FOR FUTURE ACTIONS

The findings of the SMART surveys were presented to Government and non-government stakeholders on 20 July 2022. Based on this assessment, partners elaborated the following key recommendations to improve the overall health and nutrition situation in the urban slums areas. More detailed activities relating to each recommendation will be included in the full report:

1. Set-up community based management of acute malnutrition (CMAM) programme for treatment and prevention of severe and moderate acute malnourished (SAM) children and PLWs, where possible with setting up of more nutrition treatment centres.
2. Set up and scale up of MUAC based community screening for children and PLWs including routine growth monitoring activities in urban slums area by mobile team with intensive community engagement.
3. Advocate for necessary revision of the current CMAM protocol to consider admissions by all criteria (e.g. WHZ, MUAC and Oedema) since national protocol recommendations MUAC based programming only. This will ensure all acute malnourished children are detected and admitted for management.
4. Increase MUAC cut-off both for referral and admission to capture more wasted cases by WHZ if full anthropometric measurement is not possible at community or facility level due to lack of resources.
5. Ensure provision of minimum package of integrated health and nutrition services from Government and NGO primary health care centre for both children and PLWs and established referral system for malnourished cases.
6. Develop a multi-sectoral Social Behaviour Change and Communication (SBCC) strategy for the population living in urban slums across nutrition-specific and sensitive interventions to address the underlying causes of malnutrition.
7. Enhance prevention programming and infant and young child feeding (IYCF) practices to address high levels of stunting.
8. Strengthen routine Expanded Programme for Immunization (EPI) and ensure sensitization to enhance programmes coverage (e.g. vitamin A, immunization and deworming etc.) through community engagement.
9. Strengthen initiatives at the community and household level which promote personal hygiene and sanitation (handwashing, water treatment, proper disposal of waste, etc.) to minimize the occurrence and severity of diarrhoea in children.
10. Introduce food assistance programmes where needed and expand government safety net programmes for the vulnerable families living in urban slums targeting nutritionally vulnerable groups.
11. Scale up WASH programmes in urban areas to help breaking the link between waterborne diseases on malnutrition of children and pregnant and lactating women (PLWs).
12. Establish stronger multi-sectoral linkages for urban nutrition programming convened by Bangladesh National Nutrition Council (BNNC), bringing together all relevant key government ministries e.g. health, agriculture and food, social protection, education, social affairs etc. and including local authorities and private sector to coordinate health and nutrition efforts in the urban slums.

Annex 1: Survey geographical coverage including partner's mapping

Dhaka South City Corporation				
Thana	**Ward Number**	**Number settlements/ Clusters**	**Population**	**Partner's presence**
Badda	21,37,38	13	9779	No
Bangshal	35	1	429	Sajida Foundation
Chok bazar	29,30,31	6	3465	
Demra	68,70	2	697	No
Dhanmondi Thana	33	1	460	No
Gendaria	45,51	5	3579	Sajida Foundation
Hazaribagh	55	18	10221	Nari Maitree
Jattrabari	39,49	14	9732	Sajida Foundation
Kalabagan	16,21	5	1608	
Kamalapur GRP Thana+ Motijheel thana	8	1	250	
Kamrangirchar	56,57	7	3222	
Khilgaon	1,2,3	6	3605	
Kotwali	32,37,38	2	1277	
Lalbagh	24,29, 30	10	5043	Nari Maitree
Mugda	6	1	296	Sajida Foundation
Mugda Thana	7,8,81	4	1396	
Paltan	13	2	1940	Nari Maitree
Shahbagh	20	3	1625	
Shajahanpur	11	1	547	Sajida Foundation
Shampur	45,47,54	11	6247	
Sobujbagh	5,73	6	2022	
Sutrapur	36	1	332	
Grand Total	**42 wards**	**120**	**67772**	
Dhaka North City Corporation				
Thana	**Ward Number**	**Number settlements/ clusters**	**Population**	**Partner's presence**
Bhasantek	15	22	32280	BRAC
Bonani	20	19	22453	No (previously worked by BRAC in Sattola slum)
Darus salam	9,10,11,12	38	32693	SEEP+ BRAC previ-ously worked
Hatirjheel	35,36	13	7692	Sajida Foundation
Mohammad Pur Thana	33	10	5377	
Pollobi	2,6	31	29443	BRAC
Rupnagar	6,7	36	34004	
Shah Alli	7,8	18	8998	SEEP
Tegaoun silponchol	24	31	20835	Sajida Foundation
Tejgaon	24,26	7	5435	
Grand Total	**17 wards**	**225**	**199209**	

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