YEMEN

ACUTE MALNUTRITION HITS RECORD LEVELS IN YEMEN WITH A DEVASTATING TOLL ON CHILDREN UNDER FIVE

IPC ACUTE MALNUTRITION ANALYSIS
JANUARY 2020 – MARCH 2021

Issued in February 2021

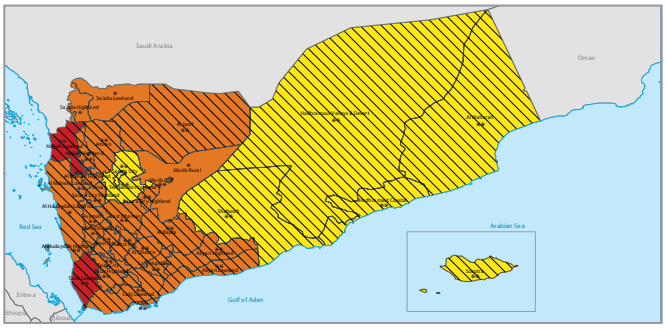
KEY FIGURES	JANUARY - DECEMBER 2021
2,254,663 Number of cases of children aged 0-59 months acutely malnourished. IN NEED OF TREATMENT	
	Number of Severe Acute Malnutrition (SAM) cases: **395,195**
	Number of Moderate Acute Malnutrition (MAM) cases: **1,859, 468**
1,155,653 Cases of pregnant and lactating women acutely malnourished. IN NEED OF TREATMENT	

Overview

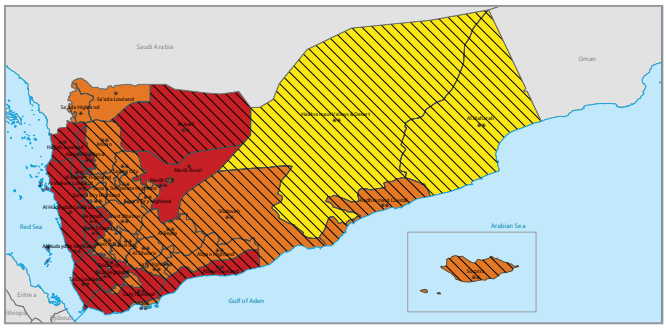
How Severe, How Many and When: Over 2.25 million cases of children aged 0 to 59 months, and more than a million cases of pregnant and lactating women, are projected to suffer from acute malnutrition in the course of 2021 in Yemen. Out of the 35 zones included in the IPC Acute Malnutrition (IPC AMN) current analysis, two zones were classified in Critical (IPC AMN Phase 4), 26 in Serious (IPC AMN Phase 3) and the remaining seven zones in Alert (IPC AMN Phase 2) during the period of January – July 2020. The situation was projected to deteriorate further during the period of August – December 2020: the number of zones in IPC AMN Phase 4 was expected to increase to 13. An additional analysis of 22 zones in the north for which data is available shows that, during the period of January – March 2021, seven zones will be in Serious (IPC AMN Phase 3) and the remaining 15 zones will be in Critical (IPC AMN Phase 4). This additional projection analysis was only possible for the north since, according to the IPC protocols, projections can only be carried out up to 12 months from data collection.

Where: Acute malnutrition is a major public health problem in several parts of the country, with 80% of the zones in IPC AMN Phase 3 or above during the analysis period of January – July 2020. With Critical levels of acute malnutrition, Taiz Lowland and Hajjah Lowland were in IPC AMN Phase 4 during the period of January to July 2020. While these two zones remained in IPC AMN Phase 4, the acute malnutrition situation was projected to further deteriorate and the following 11 zones were projected to move to IPC AMN Phase 4 during the period of January – March 2021: Abyan Lowland, Lahj lowland, Al Jawf, Al-Mahweet Lowland, Hodeidah Highland, Hodeida Lowland, Marib Rural, Raymah, Sa'ada Highland, Sa'ada Lowland, Taiz Highland, and West Dhamar.

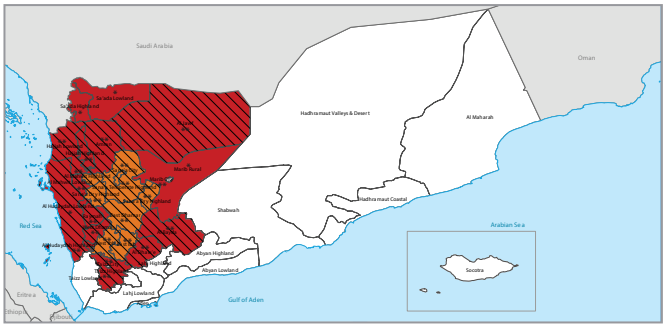
Acute Malnutrition Situation January - July 2020



Acute Malnutrition Situation August - December 2020



Projected Situation January - March 2021 (North)



Key for the Map

IPC Acute Malnutrition Phase Classification

- 1 - Acceptable
- 2 - Alert
- 3 - Serious
- 4 - Critical
- 5 - Extremely critical
- Phase classification based on MUAC

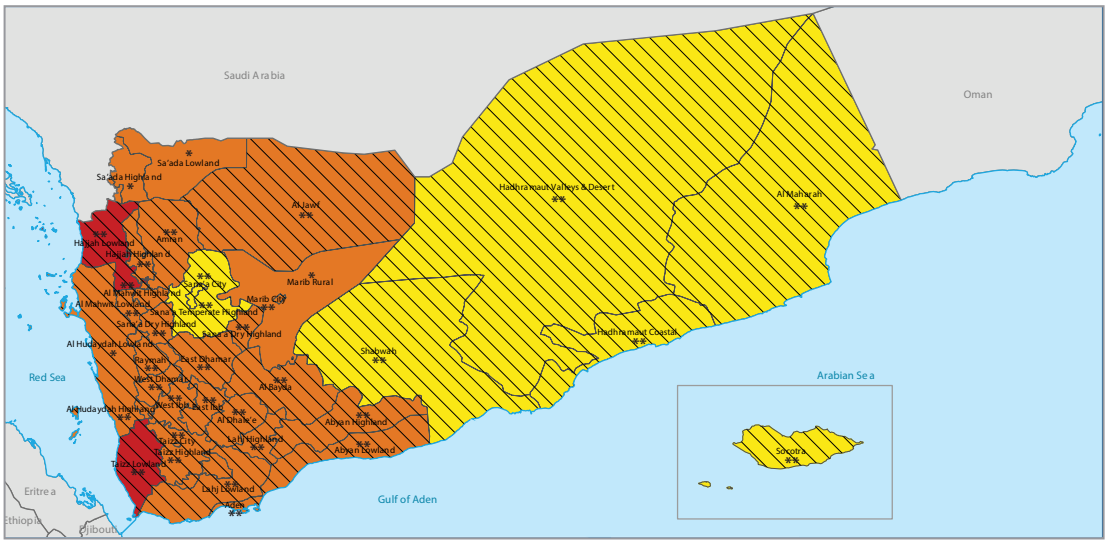
Evidence Level

- * Acceptable
- ** Medium
- *** High
- Scarce evidence due to limited or no humanitarian access

Why: The major contributing factors to the acute malnutrition situation include: (1) High prevalence of communicable diseases (with 2 in 5 children suffering from diarrhoea in the north and 1 in 4 children affected by diarrhoea in the south, while about 60% of children in the north and 25% of children in the south are affected by malaria/fever); (2) Elevated levels of acute food insecurity (with all 22 zones projected to be in IPC Acute Food Insecurity Phase 3 or above in the north and 17 of the 19 zones projected to be in IPC Acute Food Insecurity Phase 3 or above in the south); (3) Poor Infant and Young Child Feeding practices (with only about 40% in the north and about 50% in the south meeting minimum dietary diversity requirements, while exclusive breastfeeding prevalence being less than 35% in the north and less than 25% in the south); (4) Poor access to nutrition and health services (limited access due to conflict in several zones and decline in access and utilization of health and nutrition services as a result of COVID-19); (5) Poor water, sanitation and hygiene (WASH) services are a major concern in all zones. Additionally, the direct and indirect effect of COVID-19 (e.g. reduction in remittances, reduced access to markets, difficulty maintaining employment, etc.), and economic shocks, such as delayed salary payments and conflict, have a compounding effect on acute malnutrition.

ACUTE MALNUTRITION MAPS AND POPULATION TABLES

Acute Malnutrition Situation January – July 2020



Key for the Map
IPC Acute Malnutrition Phase Classification

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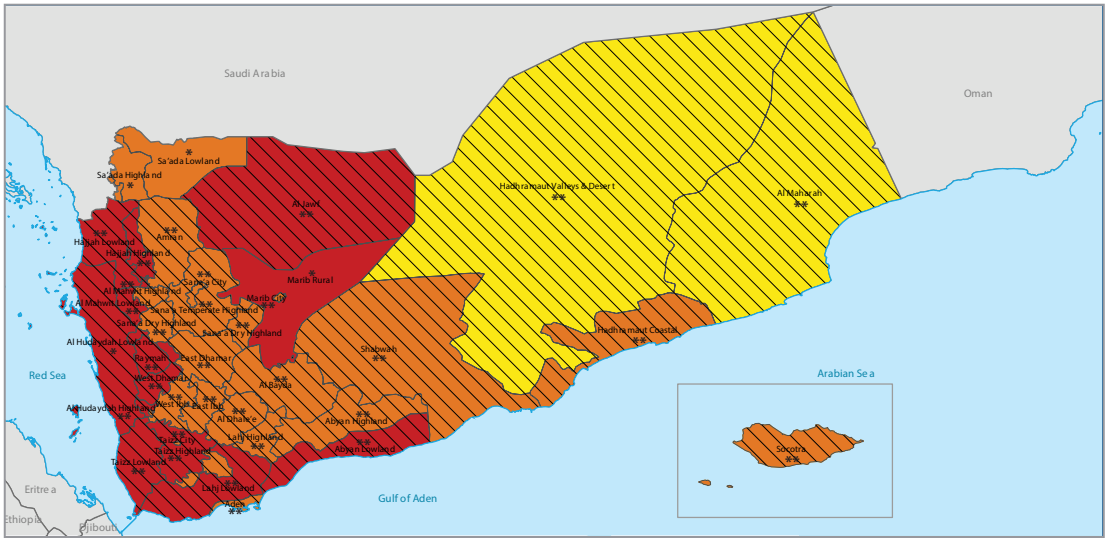
4 - Critical
5 - Extremely critical
Phase classification based on MUAC

Evidence Level
* Acceptable
** Medium
*** High
Scarce evidence due to limited or no humanitarian access

During the period of January – July 2020, 20% of the zones (seven of the 35 zones) were in IPC AMN Phase 2 with Alert levels of acute malnutrition, 74% (26 of the 35 zones) were in IPC AMN Phase 3 with Serious levels of acute malnutrition, and 6% (two of the 35 zones) were in IPC AMN Phase 4 with Critical levels of acute malnutrition. Taken together, about 80% of the zones (28 of the 35 zones) were in IPC AMN Phase 3 or above. The two zones with Critical levels of acute malnutrition were Taiz Lowland and Hajjah Lowland.

Acute Malnutrition Situation August – December 2020



Key for the Map
IPC Acute Malnutrition Phase Classification

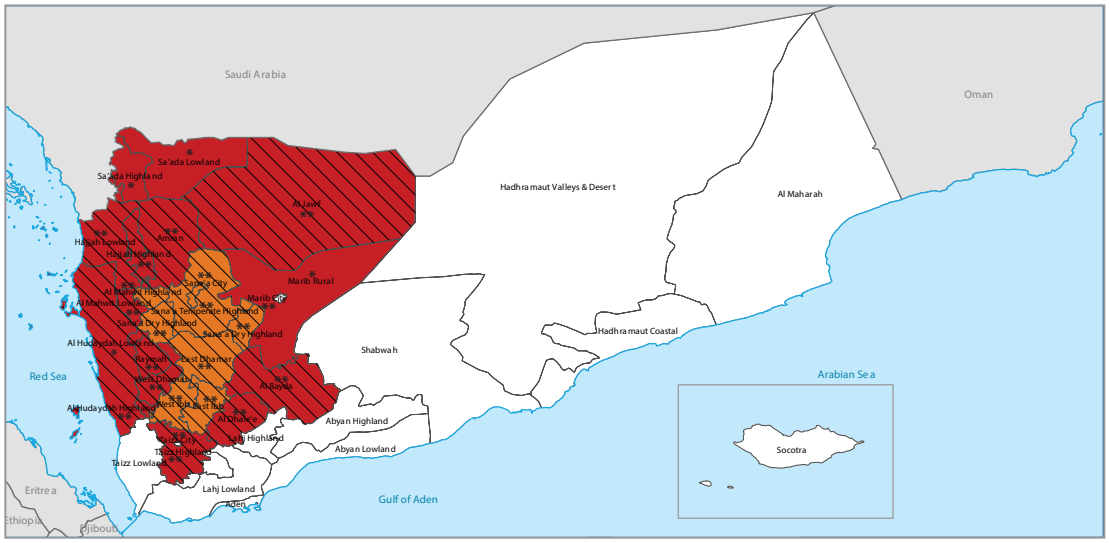
1 - Acceptable
2 - Alert
3 - Serious
4 - Critical
5 - Extremely critical
Phase classification based on MUAC

Evidence Level
* Acceptable
** Medium
*** High
Scarce evidence due to limited or no humanitarian access

The acute malnutrition situation was projected to significantly deteriorate further during the period of August to December 2020 compared to the first half of 2020. During this period, over 90% of the zones were projected to be in IPC AMN Phase 3 or above. While 6% of the zones (2 of the 35 zones) were in IPC AMN Phase 2 with Alert levels of acute malnutrition, 57% of the zones (20 of the 35 zones) were projected to be in IPC AMN Phase 3 with Serious levels of acute malnutrition, and 37% of the zones were projected to be in IPC AMN Phase 4 with Critical levels of acute malnutrition.

Two zones, namely Taiz Lowland and Hajjah Lowland, classified as being in IPC AMN Phase 4 during the period of January – July 2020, were projected to remain in the same IPC AMN Phase during the period of August – December 2020. The following 11 zones were projected to move to IPC AMN Phase 4 during the period of August – December 2020 as a result of the deterioration in the acute malnutrition situation: Abyan Lowland, Lahj lowland, Al Jawf, Al-Mahweet Lowland, Hodeidah Highland, Hodeida Lowland, Marib Rural, Raymah, Taiz Highland, Hajjah Highland and West Dhamar.

Projected Acute Malnutrition in the North, January – March 2021



Key for the Map

IPC Acute Malnutrition Phase Classification

- 1 - Acceptable
- 2 - Alert
- 3 - Serious
- 4 - Critical
- 5 - Extremely critical
- Phase classification based on MUAC
- Areas not analysed

Evidence Level

- * Acceptable
- ** Medium
- *** High
- Scarce evidence due to limited or no humanitarian access

An additional analysis carried out in 22 zones in the north (for which data is available) shows that, all the 22 zones will be in IPC AMN Phase 3 or above during the period of January – March 2021. While seven zones are projected to be in IPC AMN Phase 3 with Serious levels of acute malnutrition, the remaining 15 zones are projected to be in IPC AMN Phase 4 with Critical levels of acute malnutrition. It should be noted, while the data in the north was collected in April 2020, the data in the south was collected in December 2019 and, according to the IPC protocols, projection analyses can only be carried out up to 12 months from the data collection. As a result, this additional analysis was only possible for the north.

Acute Malnutrition: January - December 2021

Table 1 below presents an analysis by zone of the total number of children under the age of five, showing the combined prevalence of Global Acute Malnutrition (GAM), as well as the expected number of cases of Severe Acute Malnutrition (SAM), Moderate Acute Malnutrition (MAM), and Global Acute Malnutrition (GAM) during the course of 2021.

Over 2.25 million cases of acutely malnourished children are estimated to require urgent treatment for acute malnutrition in 2021. The four zones with the highest numbers of global acute malnutrition cases are respectively: Hodeidah Lowland, Taiz Highland, Sana'a City, and Hajjah Lowland. These four zones account for over 40% of the total expected cases of acute malnutrition in the country.

In terms of severity based on the prevalence of global acute malnutrition, the following seven zones are the worst affected: Hodeidah Lowland, Hodeidah Highland, Abyan Lowland, Lahj Lowland, Taiz Lowland, Hajjah Lowland, and West Dhamar. The combined global acute malnutrition prevalence is at or above 20% in these seven zones. The combined global acute malnutrition prevalence in the Hodeida governorate (both Lowland and Highland) exceeds 30%, indicating very severe conditions.

Table 1: Projected Caseload of Acute Malnutrition: January - December 2021

Zone	Combined GAM* (%)	No. of Children <5	Number of cases of children aged 0-59 months that need treatment for acute malnutrition		
			GAM Treatment	MAM Treatment	SAM Treatment
Abyan Highland	14	67,370	26,831	22,165	4,666
Abyan Lowland	27	41,741	27,827	22,768	5,060
Aden	17	185,724	89,512	75,040	14,472
Al Bayda	13	140,177	43,380	33,883	9,497
Al Dhale'e	18	144,303	71,625	63,240	8,385
Al Jawf	15	107,535	39,738	34,318	5,420
Al Maharah	7	30,959	5,897	5,093	804
Al-Mahweet Highland	8	66,231	15,100	13,189	1,911
Al-Mahweet Lowland	19	69,682	32,527	27,638	4,889
Amran	13	215,422	69,588	61,378	8,210
East Dhamar	15	229,571	98,719	83,170	15,549
East Ibb	9	321,012	87,086	68,557	18,529
Hadhramaut Coastal	16	108,996	41,837	36,175	5,662
Hadhramaut Valleys & Desert	10	164,507	45,103	37,507	7,596
Hajjah Highland	16	224,732	92,343	81,281	11,062
Hajjah Lowland	21	239,057	144,364	121,190	23,174
Hodeidah Highland	31	29,767	23,516	17,819	5,697
Hodeidah Lowland	31	498,487	393,578	298,548	95,029
Lahj Highland	13	119,552	43,128	36,573	6,555
Lahj Lowland	24	70,199	42,545	35,859	6,686
Marib City	15	113,320	37,937	29,434	8,503
Marib Rural	11	74,872	18,480	13,895	4,585
Raymah	13	99,245	31,200	25,763	5,437
Sa'ada Highland	12	77,634	21,095	16,506	4,589
Sa'ada Lowland	18	87,065	37,833	29,708	8,125
Sana'a City	11	581,145	135,640	116,889	18,751
Sana'a Dry Highland	11	62,321	18,885	16,187	2,698
Sana'a Temperate Highland	13	179,350	54,430	43,579	10,851
Shabwah	11	119,251	30,286	25,812	4,474
Socotra	15	12,165	4,354	3,827	527
Taiz City	17	69,061	33,883	26,707	7,175
Taiz Highland	19	405,961	208,497	178,272	30,226
Taiz Lowland	23	72,316	48,101	38,877	9,224
West Dhamar	20	157,259	75,178	60,060	15,118
West Ibb	10	233,243	64,621	58,563	6,058
Total	N/A	5,419,231	2,254,663	1,859,468	395,195

N/A: Not applicable; Combined GAM: Global acute malnutrition prevalence calculated from based on low WHZ, low MUAC, and/or presence of oedema.

SITUATION OVERVIEW AND TREND ANALYSIS

Situation overview

Acute malnutrition is a major public health problem in several parts of Yemen. Based on the IPC AMN current analysis, covering 35 zones between January and July 2020, seven zones were in Alert (IPC AMN Phase 2), 26 zones were in Serious (IPC AMN Phase 3), and the remaining two were in Critical (IPC AMN Phase 4). The two zones with Critical levels of acute malnutrition were Taiz Lowland and Hajjah Lowland. More than 80% of the zones (28 of the 35 zones) were in IPC AMN Phase 3 or above during this analysis period, indicating severe conditions. It should be noted that there were several districts within the zones with higher acute malnutrition than the zonal average, but the quality of the data on acute malnutrition outcomes at the district level is deemed inadequate to classify these districts.

The period of August – December 2020 was characterised by a significant deterioration in the acute malnutrition situation. While two zones were projected to be in Alert (IPC AMN Phase 2) and 20 zones in Serious (IPC AMN Phase 3), 13 zones were projected to be in Critical (IPC AMN Phase 4). A total of 33 zones (more than 90% of the areas analysed) were projected to be in IPC AMN Phase 3 or above in the projection period, compared to 28 in the previous analysis period.

An additional analysis of 22 zones in the north for the period of January – March 2021 (for which adequate data is available) suggests that all the 22 zones will most likely be in IPC AMN Phase 3 or above between January – March 2021. Seven of the 22 zones are expected of to be in IPC AMN Phase 3 with Serious levels of acute malnutrition and the remaining 15 zones will most likely be in IPC AMN Phase 4 with Critical levels of acute malnutrition. It should be noted that this additional analysis was not feasible for the zones in the south because of lack of data that meet the IPC AMN criteria for such analysis.

Key drivers

There are several contributing factors to acute malnutrition that are common in the majority of the zones and typically co-exist. These can be categorized as immediate, underlying, and basic causes of acute malnutrition as per the IPC AMN analytical framework.

They include:

Immediate causes

1. **High prevalence of communicable diseases** is one of the most common immediate causes of acute malnutrition among children. Two in every five children were suffering from diarrhoea in the north and one in four children were affected by diarrhoea in the south. About 60% of the children in the north and 25% of the children in the south were affected by malaria/fever. More than 50% of the children are affected by Acute Respiratory Infections (ARI) in the north and more than 25% in the south. High morbidity burden in some of the zones are also linked to disease outbreaks, such as suspected cases of cholera, particularly in governorates – Abyan, Mareb, Hodeidah, and Hajjah – that were affected by extensive flooding during the rainy season.
2. **Poor quality and quantity of food consumption** among children is a major contributing factor to acute malnutrition. Minimum Dietary Diversity is less than 40% in the north and around 50% in the south, indicating low levels of nutrient adequacy in children's food consumption.

Underlying causes

1. **Elevated levels of acute food insecurity** is a major contributing factor to acute malnutrition, both in the north and in the south. While all the 22 zones in the north are projected to be in IPC Acute Food Insecurity Phase 3 or above, 17 of the 19 zones in the south are most likely to be in IPC Acute Food Insecurity Phase 3 or above between January and March 2021.
2. **Poor Infant and Young Child Feeding practices:** The exclusive breastfeeding prevalence is <35% across all zones in the north and it is <25% in more than 60% of the zones in the south.
3. **Poor access to nutrition and health services** as a result of the conflict is a major problem in several zones. In addition, a decline in access and utilization of health and nutrition services as a result of the COVID-19 pandemic has been noted across all zones. As of July 2020, there was an estimated 25-49% decrease in health programme coverage, severely reducing the provision of routine health and nutrition services. This pattern was not only attributed to reduced utilization due to fear and anxiety associated with contracting COVID-19 at the health facilities, but also due to disruption caused by floods and conflict in some places. Furthermore, the pre-existing vulnerabilities in the health sector, mainly related to inadequate and ill-resourced health facilities, the decrease in coverage of health and nutrition programme activities (nutrition screening at community level and inability of many children to access child health and nutrition services;) have further rolled back the gains made in preceding seasons. As a result, the majority of children below five years are at increased risk of acute malnutrition or experiencing further deterioration in their nutrition status.
4. **Poor water, sanitation and hygiene (WASH) services** are a major concern in all zones.

Basic causes

These causes are the direct and indirect effect of COVID-19, economic shocks and conflict.

1. The COVID-19 pandemic has caused a reduction in remittances as a result of a number of factors. Lockdown in neighbouring countries, reduced access to markets, difficulty maintaining employment and an oil price drop, affecting foreign currency contribution to the local economy, had a compounding negative effect on acute malnutrition. Fear and anxiety related to COVID-19 have been an impediment, although community awareness programmes have been mounted to increase the uptake of services.
2. Economic shocks such as delayed salary payments have also had an adverse effect on acute malnutrition by reducing household purchasing power and impacting food consumption.
3. The escalating armed conflict remains one of the main root causes of acute malnutrition during the current analysis period in several zones. New conflicts in Marib and Al Jawf have caused displacement, especially in Marib city, which was already hosting more than half a million IDPs before the conflict. Surrounding governorates, in particular Ad Dhale'e and Al-Bayda, are expected to receive an influx of new IDPs due to the new conflict in Marib and Al Jawf. The conflict not only affects the delivery of health and nutrition and other humanitarian interventions, but also the markets and supplies. Additionally, new and protracted conflict has caused damages to livelihoods.
4. Several natural disasters occurred during the period of January to July 2020. They include flooding and desert locusts, that have negatively impacted nutrition by affecting food supplies to the markets and households, particularly in Marib Rural, Aljawf and part of Hadramout.
5. Humanitarian food assistance programmes were halved in parts of the country because of funding cuts in April 2020. The halved rations continued during the analysis period. Furthermore, access has been limited in some areas, particularly those affected by conflict such as Mareb and Al Jawf.

Key assumptions for the projection analysis

According to the IPC AMN projection analysis, the acute malnutrition situation is likely to worsen in the projection period, particularly due to the presence of threats and shocks affecting the already vulnerable population, along with the fragile healthcare and food systems. The following assumptions were taken into account in the projection analysis:

1. **Continuation of conflict:** Escalation of the prolonged armed conflict remains a major contributor negatively impacting the nutrition situation in Yemen. From the analyses, the devastating effects of conflict will likely increase the population's internal displacement, leading to increased vulnerability, and hamper humanitarian services from reaching communities in dire need of life-saving interventions and humanitarian assistance. Without access to critical humanitarian aid, vulnerable groups will face additional hardships, resulting in the worsening of their nutritional status. If the conflict continues, the nutrition situation is projected to further deteriorate, moving from Serious to Critical phases in zones such as Saada Highland and lowland. In addition, the situation could further deteriorate in zones already in the Critical phase, including Taiz Lowland and Highland, Hajjah Highland and Lowland, Hodeidah Highland, Al Jawf, and Mareb Rural. The ongoing conflict will continue to hamper the delivery of humanitarian assistance and the functioning of the markets and food supply.
2. **Economic crisis:** The depreciation of the Yemeni Rial (YER) and the reduced remittances in conjunction with the COVID-19 containment measures, have had a significantly negative impact on the economic situation, which is expected to deteriorate further. Non-payment or irregular payment of monthly wages to public servants will have a ripple effect on the economic situation. This will lead to increased hardship in already deprived households and communities and will have a devastating effect on children's nutritional status, as the hardest-hit age group.
3. **Suboptimal caring and feeding practices:** Suboptimal infant and young child caring and feeding practices remained a significant contributor to the appalling level of childhood malnutrition. Given the instability and worsening economy, mothers and caregivers are less likely to find time to seek and follow the recommended infant and young child feeding practices, instead, struggle for family survival will be prioritized. Limited access to health and nutrition services, especially in conflict-stricken areas, will hinder infant and young child feeding messaging and services from reaching mothers and caregivers. Therefore, childhood malnutrition will continue to deteriorate unless there is significant improvement in infant and young child feeding practices.
4. **Public health emergencies:** Disease outbreaks are critical contributors to malnutrition in the projection periods (i.e. August – December 2020 and January – March 2021). Yemen is prone to disease outbreaks such as cholera, malaria, and Acute Respiratory Infections (ARI), which are common and are expected to continue in the given circumstances. Since the health services are greatly constrained in terms of skilled personnel, functionality, supplies, logistics, and poor health-seeking behaviour, the situation is projected to continue. This will have an impact on the health status of children, hence resulting in an increased number of children with malnutrition.

Governorate and zonal levels malnutrition trends since 2015

Comparable data on acute malnutrition is limited in many zones. However, available information suggests the acute malnutrition situation has deteriorated over the past years in several zones. Given the projected trends of the contributing factors and other contextual information, the situation is likely to further deteriorate.

In the Lowland of Abyan and Lahj zones, the acute malnutrition situation was projected to deteriorate significantly from the current IPC AMN classification of Serious (IPC AMN Phase 3) to Critical (IPC AMN Phase 4) during the period of August – December 2020. According to the available data, in the Lowlands of Abyan, the nutrition situation has deteriorated from 16.3% of GAM in 2017 to 20.8% of GAM in 2019. The GAM prevalence in Lahj Lowland has persistently remained at Critical levels in the recent past: 25.3% in 2017, 22.2% in 2018, and 19.8% in 2019.

The acute malnutrition situation in the Lowlands of Taiz and Hodeidah, which are both currently classified as Critical (IPC AMN Phase 4), is expected to remain the same during the projected period, although the overall situation could deteriorate within the Phase. Historical data shows the GAM prevalence has consistently remained in Critical (IPC AMN Phase 4) in Taiz Lowland over the past years: 25.1% in 2017 and 22.6% in 2018. Although the actual prevalence has slightly varied between districts within the zone: Maqbanah and Al-Mukha districts with the prevalence of 21.8%, and Dhubab, Mawza, and Al Waza'iyah with the prevalence of 17.8% and classified in Serious (IPC AMN Phase 3). One prevalence estimate available for Hodeidah Lowland indicated it was in Critical (IPC AMN Phase 4) in 2017 with a GAM prevalence of 25.2%.

The acute malnutrition situation in the zones of Taiz highland, Al Jawf, Hajjah highland, Al Hodeidah, Dhamar West, Marib Rural, Al Mahwit lowland and Raymah is projected to deteriorate significantly from the current IPC AMN classification of Serious (IPC AMN Phase 3) to Critical (IPC AMN Phase 4) during the period of August to December 2020 and will likely remain in this Phase between January and March 2021. According to the available data from the nutrition SMART surveys, the global acute malnutrition in Taiz highland deteriorated slightly between 2017 and 2019 (from 14.4% in 2017 to 15% in 2019). In Hajjah highland zone, the prevalence of acute malnutrition fluctuated between 11.3% in 2017 to 8.9% in 2018 and 11.2% in 2019. The acute malnutrition levels in Hajjah lowlands has been on an increasing trend over the last three years: 11.3% in 2017, 14.9% in 2018, and 17.5% in 2019.

In Hodeidah, there has not been any nutrition assessment since 2016. According to the Emergency Food Security and Nutrition Assessments (EFSNA), the acute malnutrition was at a very high level with 25.2% in 2016. This is considered the highest level in the whole country and is consistent with the deterioration of the nutrition situation in the IPC AMN analysis periods. In Raymah governorate, the acute malnutrition prevalence was 9.6% based on the SMART survey in 2017. No SMART surveys have been conducted in the governorate in the last three years and therefore historical trend analysis cannot be done. In Dhamar West, the nutrition situation deteriorated gradually – i.e. from 9% of acute malnutrition prevalence in 2017 to 10.1% in 2018 and 12.8% in 2019. Similarly, the acute malnutrition levels fluctuated in Damar East with 9% in 2017, 5.9% in 2018 and 10.6% in 2019.

In Marib Rural, the prevalence of acute malnutrition fluctuated between 8.1% in 2017, 10% in 2018 but noted a significant improvement in 2019 with a prevalence of 6.8%. In Al Mahwit lowland, the acute malnutrition situation remained at Serious (IPC-AMN phase 3) with 12.1% of acute malnutrition in 2017 and 11.8% in 2019. The highland area of Al Mahwit has however seen a decrease in the prevalence of acute malnutrition - i.e. from 12.1% in 2017 to 5.5% in 2018.

The acute malnutrition situation in the governorates of Amant Al Asima and Sana'a city and Sana'a Temperate Highland, has deteriorated from Alert (IPC AMN Phase 2) to Serious (IPC AMN Phase 3) during the period of August – December 2020, and this deterioration is expected to last during the period of January to March 2021. However, based on the available SMART surveys data, Amanat Al Asimah reported a prevalence of 6.1% in the 2016 Survey, and Sana'a Temperate Highland had the acute malnutrition of 5.6% in 2017 and 7% in 2019, both corresponding to IPC AMN Phase 2 (Alert).

The acute malnutrition situation in the governorates of Amran, Al Dhale', Al Bayda, and Sa'ada is projected to deteriorate significantly from Serious (IPC AMN Phase 3) during the period of August to December 2020 to Critical (IPC AMN Phase 4) during the period of January to March 2021. According to the available data, the acute malnutrition situation in Amran remained at similar levels: 5.8% in 2017 and 7.4 in 2019. In Al Bayda, the nutrition situation has remained relatively stable in the last three years with an acute malnutrition prevalence of 7% in 2017 and 7.3% in 2019. Although, there was no significant change in nutrition situation in Al Dhale'e, in terms of classifications, the prevalence of acute malnutrition stayed relatively high at 13.5% in 2017 to 12.1% in 2019. In Sa'ada, the nutrition situation indicated a relative decrease in terms of the prevalence of acute malnutrition: from 9.9% in 2017 to 6.1% in 2019, though it still stayed at the same IPC AMN Phase 2 (Alert). The lowland of Sa'ada experienced a deterioration in the acute malnutrition from 8.7% in 2017 to 10.6% in 2019.

The acute malnutrition situation in the zones of Al-Mahwit highland, Dhamar East , Ibb West Ibb, East, and Sana'a Dry Highland has been projected to remain in Serious (IPC AMN Phase 3) in the two periods of August to December 2020, and January to March 2021. However, based on the SMART surveys data, the situation in Ibb East deteriorated from 3.9% of global acute malnutrition in 2017 to 6.6% in 2019, while the situation remained similar in Ibb West with the prevalence of acute malnutrition of 5.6% in 2017 and 6.6% in 2019.

The acute malnutrition situation in the governorates of Al-Jawf, Marib (Marib Rural), Socotra, Hadramawt (Hadramawt Coastal) and Shabwah, has fluctuated between Alert (IPC AMN Phase 2) and Serious (IPC AMN Phase 3) in the past. Based on the latest data available, they are now classified in Alert (IPC AMN Phase 2). However, according to the IPC AMN analysis, these areas will move to Serious (IPC AMN Phase 3) in the projection period, as a result of changes in the contributing and contextual factors.

According to historical survey data on GAM for Al Jawf, the acute malnutrition situation slightly improved from Serious (IPC AMN Phase 3) in 2017 (GAM: 11.2%) to Alert (IPC AMN Phase 2) in 2018 (GAM: 9.2%). Acute malnutrition in Marib Rural has also fluctuated between Alert (IPC AMN Phase 2) and Serious (IPC AMN Phase 3) with the GAM prevalence of 8.1% in 2017, 10% in 2018, and 6.8% in 2019. The GAM prevalence available for the two districts of Socotra (Hidaybu and Qulensya Wa Abd Al Kuri) shows Serious (IPC AMN Phase 3) levels of acute malnutrition in 2017 with a GAM of 13% and 11.6% in 2019. In 2017, Hadramawt was in Critical (IPC AMN Phase 4) with the GAM prevalence of 20.3%. However, according to a survey in 2019, the coastal districts of the Governorate moved to Serious (IPC AMN Phase 3) with the GAM prevalence of 12.5%. Shabwah Governorate (Plateau and Lowlands has consistently remained in Alert (IPC AMN Phase 2) over the past several years with the GAM prevalence of 6.2% and 8.5% respectively in 2017; and 5.9% in 2019).

Risk factors to monitor

Given that the acute malnutrition situation is likely to deteriorate further in a majority of the zones, and coupled with the fact that there are limited chances to conduct population-based surveys in the aftermath of the COVID-19 pandemic, it is imperative that the following risk factors are monitored and that the IPC Acute Malnutrition projections are updated as risk factors change:

Immediate and underlying drivers to monitor

1. Morbidity patterns: increased prevalence, especially cholera and other seasonal diseases such as malaria and Acute Respiratory Infections (ARIs), are likely to occur across the zones.
2. Immunization trends: both as a result of the weak health infrastructure and the COVID-19 pandemic.
3. Health and nutrition service availability, access and utilization: the impact of COVID-19 on an already fragile health system, including: an increase in the number of COVID-19 cases, the availability of healthcare staff and equipment, altered health-seeking behaviours due to fear of COVID-19 and reduced household economic resources.
4. Health and nutrition funding: Given the deteriorating levels of acute malnutrition across Yemen, it is crucial to monitor nutrition supplies and the funding situation for nutrition programming. Any negative effects on health and nutrition funding and supplies will also negatively impact the nutrition services, leading to further deterioration of the nutrition situation.

Basic drivers to monitor

1. Conflict: Remains one of the major basic drivers of acute malnutrition, particularly in areas that are directly affected by fighting (e.g. Mareb, Al-Jawf, Al Baydha, Al Dhalea, Taiz and Al Hodeidah), but also in other areas that are indirectly affected. May cause disruption in the provision of much-needed humanitarian services.
2. Impact of COVID-19 on the economy: containment measures such as movement restrictions and/or lockdown measures to curtail the spread of the virus have caused an increase in food prices, a reduction of food imports, lower remittances, inflation, and food insecurity at the household level.
3. Natural disasters: floods, cyclones and desert locust infestations in areas that are vulnerable to these hazards.
4. Humanitarian food assistance: Even though it is anticipated that humanitarian food assistance will be sustained, COVID-19 containment measures and/or conflict-related challenges may cause disruption in the provision of much-needed services to the affected groups.
5. Food access and utilization, price inflation and the economic situation.

RECOMMENDATIONS FOR ACTION

This section outlines the broad recommendations across the zones/governorates for both the immediate/short-term and medium-to-longer-term timeframe based on the situation analysis. Specific response actions focusing on treatment, prevention, WASH, infrastructure development, integrated primary health care services, social and behaviour change communication, strengthening information systems and improving monitoring will then need to be outlined along with resource requirements for each governorate/zone through an integrated multi-sectoral response analysis. This process should be led by the Nutrition Cluster together with the MOPHP and in collaboration with other relevant sectors.

Immediate/short term recommendations and objectives in host and IDP communities

• Implement Blanket Supplementary Feeding Programmes (BSFP) targeting vulnerable groups (children under two, pregnant and lactating women) for prevention of malnutrition based on solid needs assessment and identified gaps in priority locations;

• Strengthen Community-based Management of Acute Malnutrition (CMAM) program - ensuring optimal coverage of Severe Acute Malnutrition (SAM), SAM with medical complication and Moderate Acute Malnutrition (MAM) treatment, expansion of appropriate treatment services based on solid needs assessment and identified gaps; and strengthening community screening and referrals from community to facility and from Out-patient Therapeutic Programme (OTP) to Therapeutic Feeding Centre (TFC) (support transport and caregiver costs);

• Strengthen Micronutrient Powder supplementation programme;

• Strengthen infant and young child feeding (IYCF) messaging and counselling at Health Facilities and community level;

• Continue provision of primary health care including vaccination services and referrals of medically complicated cases of acute malnutrition;

• Scale up efforts for community awareness-building on COVID-19, children health and nutritional need for a healthy growth and engagement with the relevant authority to mitigate the likely impact on food and nutrition security;

• Strengthening WASH interventions including e.g. water chlorination, distribution of chlorine tablets for water chlorination and hand-washing;

• Ensure adherence to Infection Prevention and Control procedures during healthcare interaction, provision of nutrition services, assessments and surveys, to protect nutrition/health workers and populations from risks of exposure to COVID-19;

• Enhance intersectoral coordination between all stakeholders for efficient utilization of resources;

• Scale-up of health system capacity especially in under-covered zones including areas with IDPs, including the use of mobile clinics for health and nutrition service delivery;

• Strengthen partnership and engagement with Ministry of Health and other nutrition stakeholders;

• Plan for timely nutrition assessments including the Nutrition SMART surveys, integrating and mainstreaming key nutrition indicators in multi-sectoral assessments.

Medium to long term recommendations and objectives in host and IDP communities

• Advocate for enhanced WASH services intervention at health facilities and communities, aiming to improve the infrastructure;

• Support integrated livelihood and nutrition programming for improved nutrition and food security by providing general food assistances (food, vouchers and cash) as well as supporting locally feasible livelihood options including support for the fisheries industry in coastal areas, supporting small businesses, promoting kitchen gardening at household and community level and supporting cash programming;

• Support the Social Behaviour Change for Communication (SBCC) to improve home diets, infant and young child feeding as well as proper use of nutrition products and hygiene promotion;

• Strengthen nutrition information systems (system for routine nutrition programme data, surveillance system, surveys, and risk monitoring) by ensuring that the system is adapted to the response, provides timely information for decision-making and actions, is based on quality-assured data and analysis and addresses challenges of information-gathering in the context of COVID-19;

• Strengthen nutrition monitoring systems across inpatient and outpatient care for acute malnutrition and ensure continuum of care for severe and moderate acute malnutrition;

• Advocate for strengthening disease surveillance and maintain updated preparedness and response plans for health outbreaks and seasonal increase of malnutrition;

• Promote multi-sectoral engagement and collaboration to ensure coordinated efforts and synergy to address acute malnutrition;

• Strengthen resilience and shock recovery action to reduce the impact of flooding in low lying areas – e,g. Hajjah Lowlands.

TOTAL NUMBER OF CASES OF CHILDREN 0-59 MONTHS AND PREGNANT AND BREASTFEEDING WOMEN AFFECTED BY ACUTE MALNUTRITION AND IN NEED OF TREATMENT

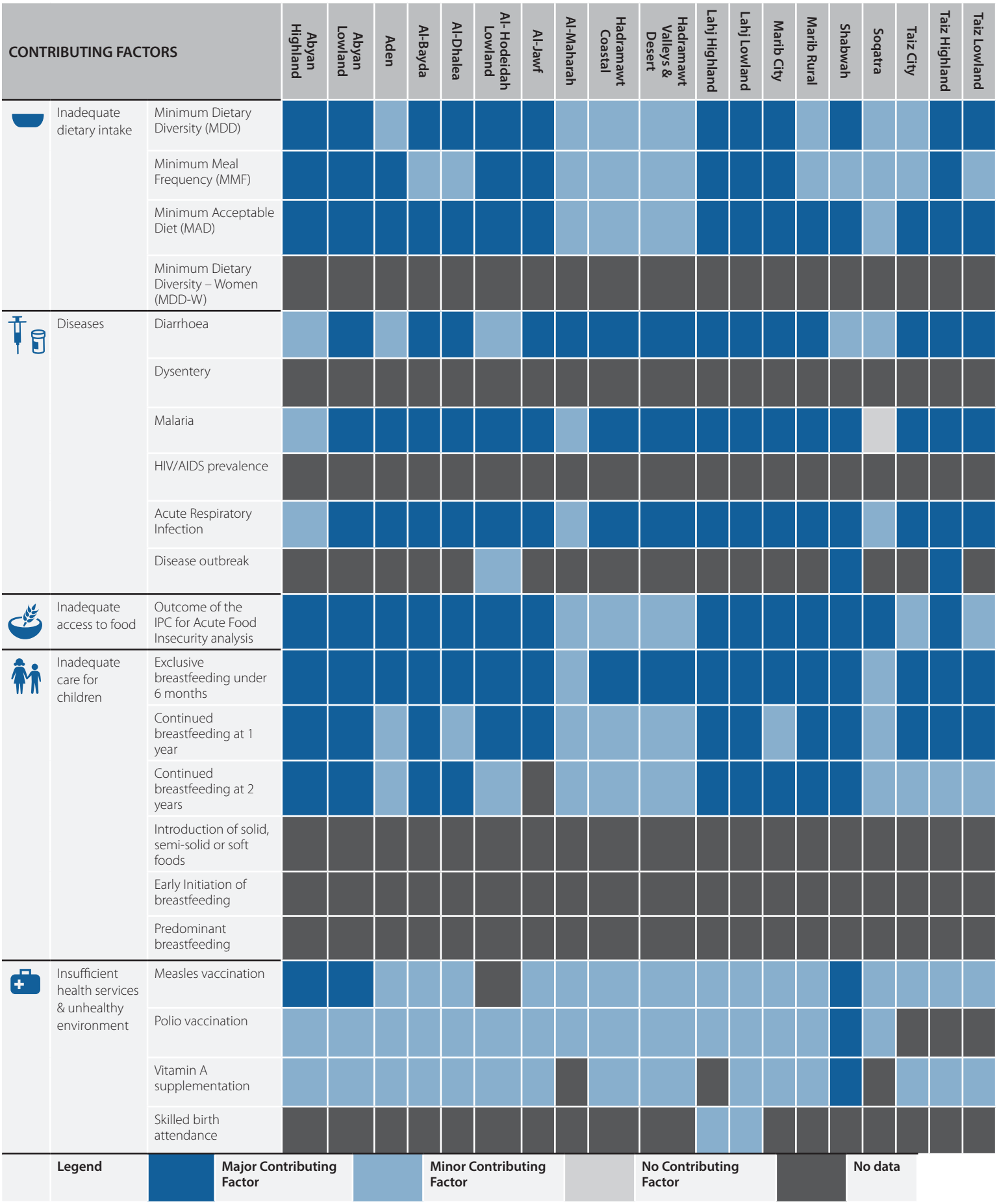
The expected number of cases of acute malnutrition among children was calculated using the following formula: *npk*, where *n* is the number of children under the age of five, *p* is the prevalence of acute malnutrition, and *k* is the incident correction factor of 2.6. Given that the prevalence of GAM based on MUAC, which was used as the primary data in the IPC AMN analysis, would underestimate the magnitude of the problem, latest available information on the combined GAM, MAM, and SAM estimates was used in calculation of the total burden of acute malnutrition. The acute malnutrition burden was calculated for the whole year (January to December 2021) using this procedure: (1) for districts with the same phase classification between the current and projection period (a total of 58 districts), point prevalence of combined GAM, SAM, and MAM prevalence estimates were used in the formula and an additional 11% increase was included to cover for the anticipated impact of COVID-19 based on global guidance; (2) for districts with a deterioration in Phase classification between the current and projection period (a total of 149 districts), the Upper Confidence Level (UCL) of the combined GAM, SAM, and MAM prevalence estimates were used in the formula and an additional 11% increase was also included to account for the anticipated impact of COVID-19 based on global guidance.

The expected number of cases of acute malnutrition among pregnant and lactating women was calculated by multiplying the number of pregnant and lactating women by the prevalence of acute malnutrition in each zone. The same procedures that were used to calculate the total burden of acute malnutrition among children (described above) were also applied.

Table 2: Total number of cases of children 0-59 months and pregnant and breastfeeding women affected by acute malnutrition and in need of treatment in January to December 2021

Zone	Children under 5							Pregnant and Lactating women		
	Total #	Combined GAM (%)	Combined MAM (%)	Combined SAM (%)	Estimated number of GAM cases	Estimated number of MAM cases	Estimated number of SAM cases	Total #	% AMN	# of cases AMN
Abyan Highland	67,370	14	11	2	26,831	22,165	4,666	30,570	15	9,171
Abyan Lowland	41,741	27	21	6	27,827	22,768	5,060	18,941	15	5,682
Aden	185,724	17	14	3	89,512	75,040	14,472	84,276	14	23,597
Al Bayda	140,177	13	9	3	43,380	33,883	9,497	63,609	19	24,680
Al Dhale'e	144,303	18	16	2	71,625	63,240	8,385	65,481	17	22,525
Al Jawf	107,535	15	13	3	39,738	34,318	5,420	48,796	16	15,224
Al Maharah	30,959	7	6	1	5,897	5,093	804	14,048	11	3,063
Al-Mahweet Highland	66,231	8	7	1	15,100	13,189	1,911	30,054	26	15,748
Al-Mahweet Lowland	69,682	19	15	4	32,527	27,638	4,889	31,620	26	16,569
Amran	215,422	13	11	2	69,588	61,378	8,210	97,753	25	49,267
East Dhamar	229,571	15	13	2	98,719	83,170	15,549	104,173	27	56,670
East Ibb	321,012	9	7	2	87,086	68,557	18,529	145,666	14	39,913
Hadhramaut Coastal	108,996	16	13	3	41,837	36,175	5,662	49,459	13	12,859
Hadhramaut Valleys & Desert	164,507	10	8	2	45,103	37,507	7,596	74,649	13	19,409
Hajjah Highland	224,732	16	14	2	92,343	81,281	11,062	101,977	44	89,740
Hajjah Lowland	239,057	21	17	3	144,364	121,190	23,174	108,477	44	95,460
Hodeidah Highland	29,767	31	23	9	23,516	17,819	5,697	13,507	31	8,429
Hodeidah Lowland	498,487	31	22	8	393,578	298,548	95,029	226,199	31	141,148
Lahj Highland	119,552	13	11	2	43,128	36,573	6,555	54,249	26	28,427
Lahj Lowland	70,199	24	19	5	42,545	35,859	6,686	31,855	26	16,692
Marib City	113,320	15	10	4	37,937	29,434	8,503	51,421	12	11,930
Marib Rural	74,872	11	7	3	18,480	13,895	4,585	33,975	12	7,882
Raymah	99,245	13	10	3	31,200	25,763	5,437	45,034	33	29,272
Sa'ada Highland	77,634	12	8	3	21,095	16,506	4,589	35,228	39	27,126
Sa'ada Lowland	87,065	18	13	5	37,833	29,708	8,125	39,508	39	30,421
Sana'a City	581,145	11	8	2	135,640	116,889	18,751	263,707	14	73,838
Sana'a Dry Highland	62,321	11	9	2	18,885	16,187	2,698	28,280	27	15,497
Sana'a Temperate Highland	179,350	13	10	4	54,430	43,579	10,851	81,384	27	44,598
Shabwah	119,251	11	9	3	30,286	25,812	4,474	54,113	20	22,078
Socotra	12,165	15	12	3	4,354	3,827	527	5,520	25	2,760
Taiz City	69,061	17	13	4	33,883	26,707	7,175	31,338	26	16,170
Taiz Highland	405,961	19	16	3	208,497	178,272	30,226	184,214	26	95,054
Taiz Lowland	72,316	23	19	4	48,101	38,877	9,224	32,815	26	16,932
West Dhamar	157,259	20	15	5	75,178	60,060	15,118	71,360	27	38,820
West Ibb	233,243	10	9	1	64,621	58,563	6,058	105,839	14	29,000
Grand Total	5,419,231	N/A	N/A	N/A	2,254,663	1,859,468	395,195	2,459,095	N/A	1,155,653

FACTORS CONTRIBUTING TO ACUTE MALNUTRITION



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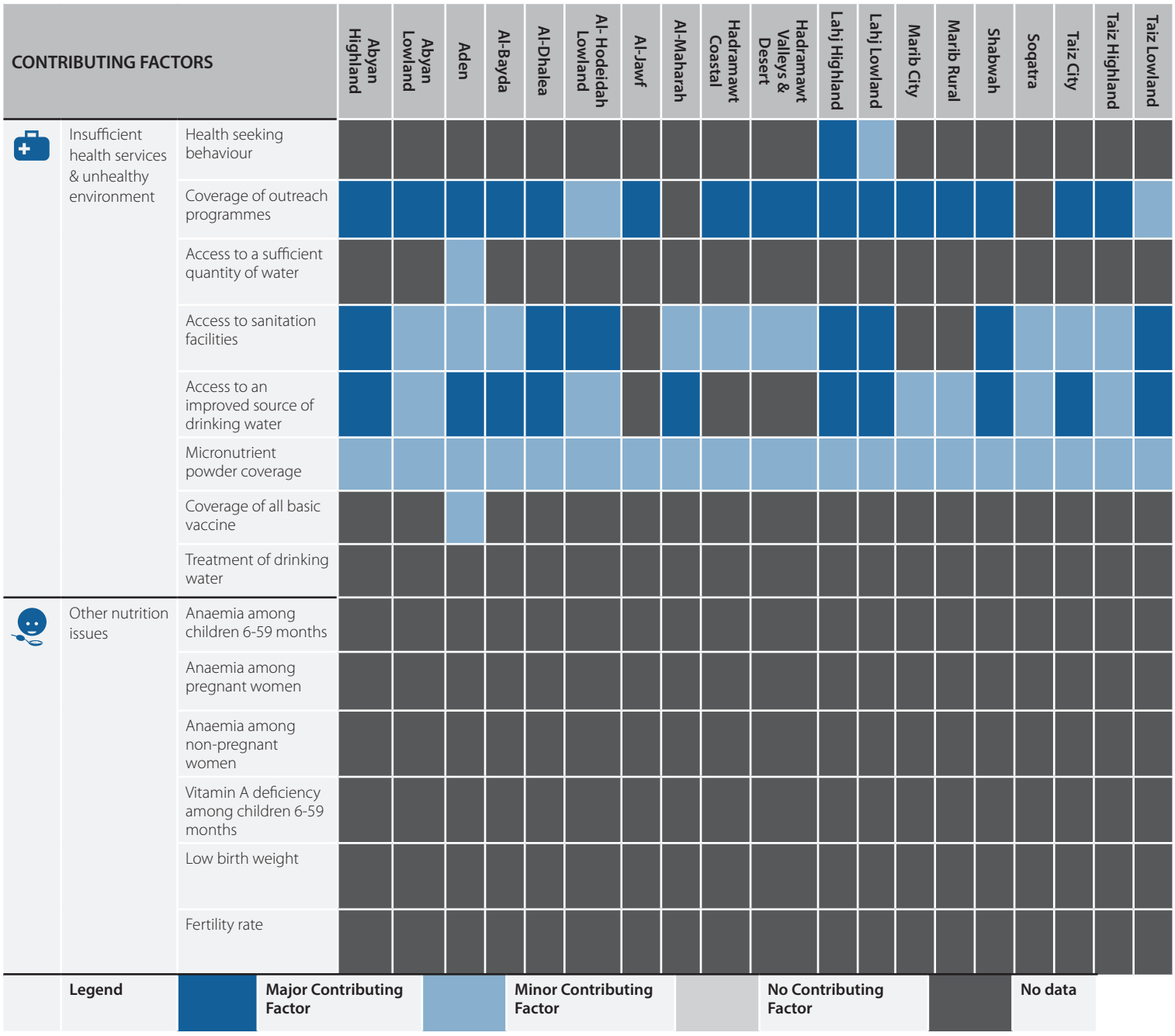

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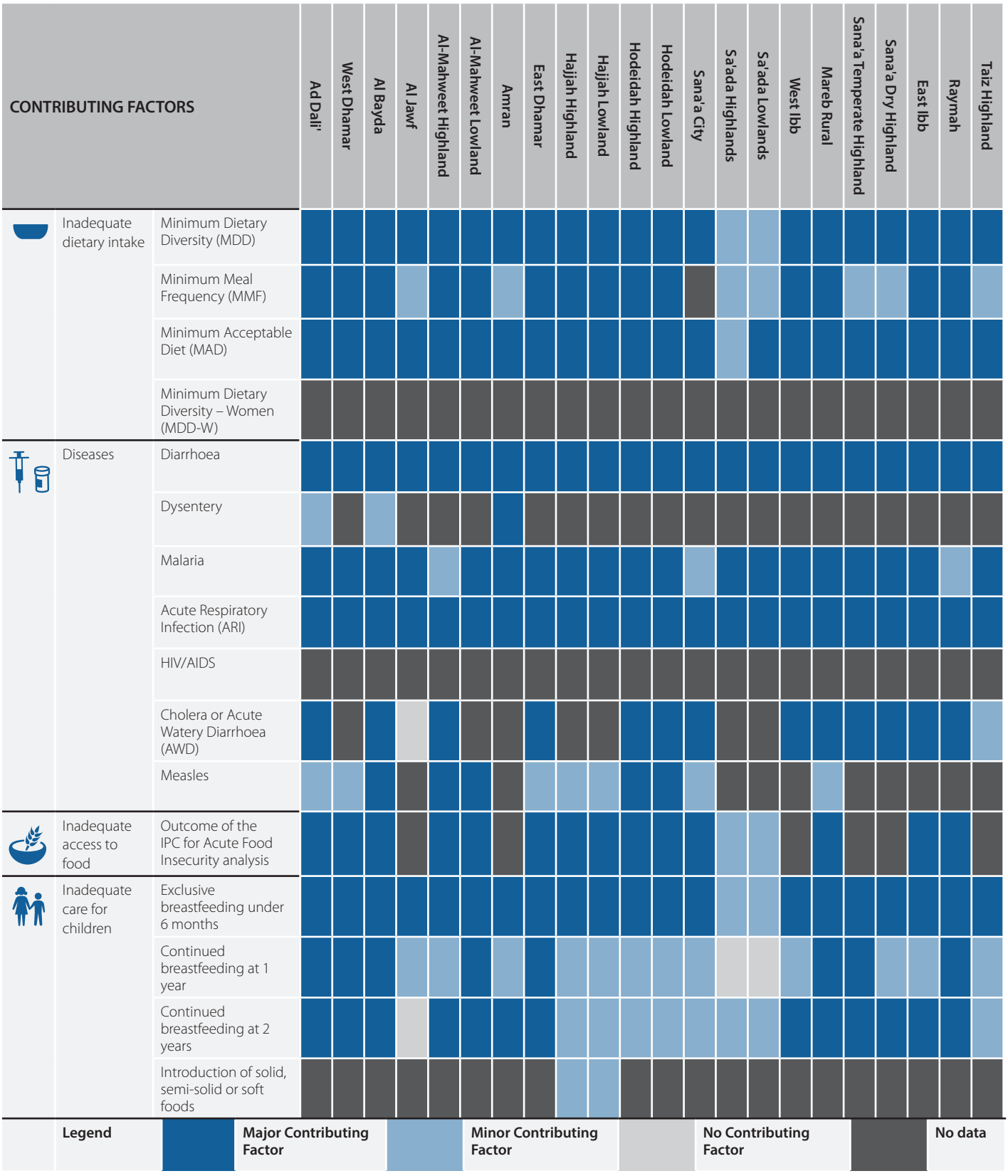

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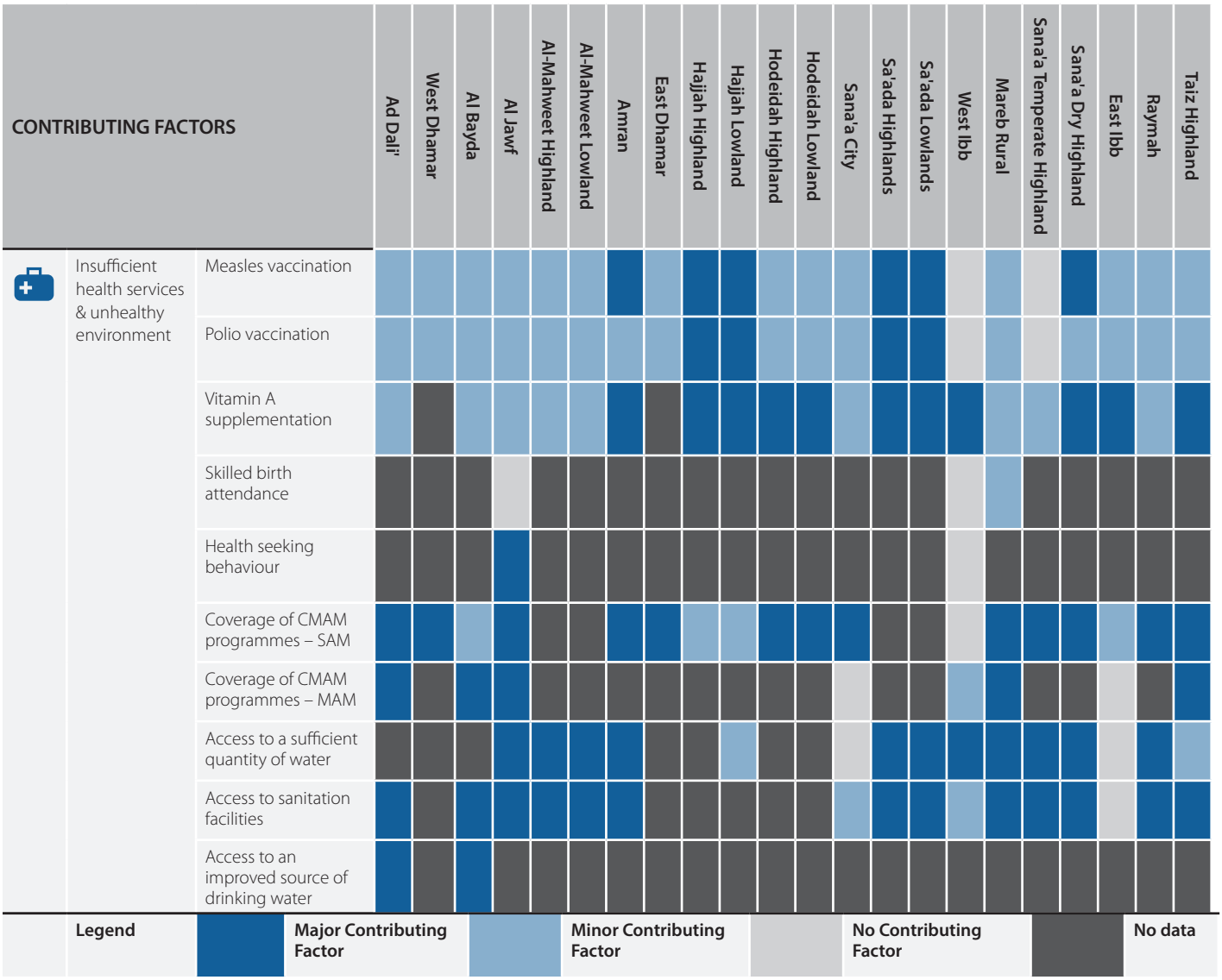

PROCESS AND METHODOLOGY

The Yemen IPC Technical Working Group (TWG) brought together available nutrition data and related information in a systematic manner to analyse the acute malnutrition situation across 333 districts in 35 zones of Yemen. The earlier partial IPC AMN analysis conducted for the 133 districts in southern Yemen were merged with the northern analysis to come up with one country-wide report. Even though the overall management and coordination of the IPC analysis process were provided by the FAO-Food Security Information Systems program, the Yemen IPC Nutrition Subgroup TWG conducted a series of consultative and technical meetings with different stakeholders to plan, prepare and conduct the IPC AMN analyses. The IPC Nutrition Subgroup TWG is made up of multiple agencies representing different governmental and non-governmental sectors, including UN agencies, Nutrition Cluster resource partners and international agencies.

The 2020 IPC process started in late 2019 and early 2020 by preparing a detailed implementation plan and establishing timelines of activities, including an inventory of available information and determining the need for fresh data required for the analysis. To ensure good participation of local experts from governorate level government offices, the TWG decided to carry out the 2020 analyses with the involvement of at least two representatives from the governorate levels (a representative from governorate health offices and from the supreme council for coordination and management of humanitarian and international affairs). The two analyses were carried out in two different periods. The first analysis targeting 133 districts/19 zones in southern Yemen used primary MUAC data collected in Dec 2019/January 2020. This analysis was conducted in August 16 - 20, 2020. The second analysis was conducted from November 25 – December 7, 2020, targeting all the remaining 200 districts mainly located in northern Yemen. During the Sana' analysis, seven districts all located in Marib governorate were re-analysed due to change of control from the internationally recognized government to Sana'a Based Authorities (SBA).

Due to COVID-19 restrictions, the southern analysis was conducted virtually, with 61 individuals from government ministry staff, local NGOs, INGOs, UN agencies and Cluster partners participating. For the north, the analysis was conducted mainly through face to face, with more than 100 analysts participating. The IPC AMN 2020 analyses were the first IPC AMN analyses conducted in Yemen and for most of the analysts it was the first time to participate in such workshops. A refresher training was carried out two days in advance of the analyses. The analyses were conducted in line with global guidance and tools, with technical support provided in real time by several IPC experts under the auspice of the IPC Global Support Unit. The analyses started by the formation of analysis teams, which were composed of multiple agencies representing different governmental and non-governmental organizations, including UN agencies, resource partners, and international partners.

Main sources of evidence used in the IPC analysis

The primary source of data for the IPC AMN analyses was the Food Security and Livelihood Assessment (FSLA) MUAC data collected between December 2019 and April 2020. The MUAC data was cleaned and prepared for IPC analysis, with technical support and guidance from Action against Hunger (ACF), the IPC Global Support Unit, and the Centre for Disease Control and Prevention Atlanta due to concerns raised about the quality of the data, particularly in southern Yemen. Following the ACF-GSU-CDC review recommendations, the National SMART Technical Committee endorsed the MUAC data for IPC analysis, with the provision that the IPC AMN analyses are conducted at the zonal level, taking into consideration that all historical data concerning nutrition and other contributing factors are mainly available at the zonal level (especially those collected during SMART surveys in 2017/2019). Additionally, all nutrition programme reports (admission and service coverage) and health programme data were summarised at zonal level to be consistent with the IPC AMN unit of analysis.

Limitations and learning

• Daily quality checks for MUAC were not feasible during the data collection period. Due to concerns of the quality of the data, MUAC data was used at the zonal level and not at the district level.

• Delays in obtaining, cleaning and preparing the primary data resulted in this IPC AMN analysis being conducted much later than the IPC AFI analysis, and just within the acceptable time frame as per IPC protocols. Clearer guidance on criteria for obtaining relevant datasets, cleaning and preparing data to be provided in future IPC AMN analyses.

• Absence of recent SMART survey data is a major challenge. In the absence of recent SMART survey data, MUAC from the FSLA and historical SMART survey data were used in the analysis with medium reliability. Since the MUAC data did not meet IPC reliability criteria, historical data alone was used in the classification of Hodeidah Lowland with low reliability.

• Given that zonal level projections were extrapolated to district level in estimation of the burden of acute malnutrition among children under five years, it might have overestimated / underestimated the burden in some districts that either had lower or higher than the zonal averages of the combined acute malnutrition prevalence respectively. The burden of acute malnutrition might also be underestimated in the districts where an evolving nutrition situation was not sufficient to move the district into a higher IPC AMN phase.

• Overall, the virtual experience was successful, however, there were some limitations: weak internet connectivity hindered the continuous participation of some analysts during the workshop; simultaneous translation worked effectively for the training but it did not work so well for the plenary sessions.

What is the IPC and IPC Acute Malnutrition?

The IPC is a set of tools and procedures to classify the severity and characteristics of acute food insecurity and acute malnutrition crises as well as chronic food insecurity based on international standards. The IPC consists of four mutually reinforcing functions, each with a set of specific protocols (tools and procedures).

The core IPC parameters include consensus building, convergence of evidence, accountability, transparency and comparability. The IPC analysis aims at informing emergency response as well as medium and long-term food security policy and programming.

The IPC Acute Malnutrition Classification provides information on the severity of acute malnutrition, highlights the major contributing factors to acute malnutrition, and provides actionable knowledge by consolidating wide-ranging evidence on acute malnutrition and contributing factors.

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Classification of food insecurity and malnutrition was conducted using the IPC protocols, which are developed and implemented worldwide by the IPC Global Partnership - Action Against Hunger, CARE, CILSS, EC-JRC , FAO, FEWSNET, Global Food Security Cluster, Global Nutrition Cluster, IGAD, Oxfam, PROGRESAN-SICA, SADC, Save the Children, UNICEF and WFP.

Acute Malnutrition Phase name and description

Phase 1 Acceptable	Phase 2 Alert	Phase 3 Serious	Phase 4 Critical	Phase 5 Extremely Critical
Less than 5% of children are acutely malnourished.	**5–9.9%** of children are acutely malnourished.	**10–14.9%** of children are acutely malnourished.	**15–29.9%** of children are acutely malnourished. The mortality and morbidity levels are elevated or increasing. Individual food consumption is likely to be compromised.	**30% or more** children are acutely malnourished. Widespread morbidity and/or very large individual food consumption gaps are likely evident.

IPC Analysis Partners: