METHODOLOGY

This HNO is based on the 2018 population projections issued by the Yemen Central Statistical Organization, adjusted with data generated through the 16th TFPM report. Sectoral and inter-sectoral figures on people in need and needs severity have been calculated by using the below methodology:

Sector-specific needs severity

Each cluster was asked to estimate the severity of needs in their sector for all 333 districts in Yemen, using a mutually agreed seven-point severity scale (0 to 6). This work included agreeing on thresholds for indicator values along the seven-point severity scale to ensure that datasets from different clusters could be aggregated across clusters, even though widely divergent datasets would be used. Using the indicators developed for the 2017 HNO as a basis, clusters reviewed their indicators and thresholds and updated them as needed.

In parallel, partners worked to organize and carry out assessments that would provide data to populate the severity scales, and overview of which is presented in Annex 1 of this HNO. Recognizing the difficult data collection environment in Yemen, partners agreed that hard data would likely be unavailable for all indicators in all 333 districts. As a backup, every indicator was translated into a focused discussion question with answer choices mapped along the same seven-point severity scale.

OCHA organized needs analysis workshops in Sana'a, Ibb, Sa'ada, Hudaydah, Mukhallah and Aden in September to review these questions and provide answers through Delphi analysis (Expert Consultations). This approach is methodologically sound and already employed in humanitarian and other programmes around the world. Delphi results were used to triangulate data-based scores or to replace data-based scores in districts where data was unavailable. They also significantly contributed to de-centralizing the overall analysis work. Once all data and Delphi results had been collected, clusters translated these results into severity scores (0 to 6) according to the thresholds in their agreed severity scales.

Each cluster then combined individual indicator scores into a single composite severity score for every district. Formulas for generating composite scores were determined by the clusters based on internal technical agreement (simple average, weighted average, etc.). Composite severity scores are the basis for all sector specific needs severity maps in the 2018 HNO. A full list of sector severity indicators and sources appears in the table at the end of this annex.

Inter-sector needs severity

Inter-sector needs severity overlays all clusters' severity analysis to identify districts with the greatest concentration of severe needs across multiple sectors. Clusters calculated their composite needs severity scores for every district. Cluster scores for every district were then added together to generate a "needs severity sum" for all districts. District sums were clustered using Jenks natural breaks so that each district was assigned a score based on its sum. Composite scores from the EECR Cluster were not included in this analysis due to data shortages that required EECR scores to be based on Delphi analysis only. Severity indicators measuring the needs of Refugees and Migrants were also excluded from the inter-sectoral severity analysis given the limited number of affected populations.

In line with the 2017 methodology, the Yemen Inter-Cluster Coordination Mechanism (ICCM) endorsed a seven-point severity scale (0 to 6) against which to "grade" these values, and implemented this scale for every district accordingly. A score of 2 to 3 indicates people in moderate need, who require assistance to stabilize their situation and prevent them from slipping into acute need. A score of 4 to 6 indicates people in acute need, who require immediate assistance to save and sustain their lives. The outcome of this process forms the basis of the inter-sector needs severity map in the "Severity of Needs" chapter of the 2018 HNO.

Sector-specific estimates of people in need (acute/ moderate)

OCHA designed a flexible methodology for clusters to estimate people in need (PIN), including distinctions between acute and moderate need. Recognizing that clusters possess varying degrees of data on which to base district-level PIN estimates, two options were provided to maintain flexibility without sacrificing rigor:

Under Option 1, clusters designed their own methodology entirely. This option was selected by two clusters, the Food Security and Agriculture Cluster (FSAC), and the Nutrition Cluster. For FSAC, the severity of needs was determined by the percentage of severely food insecure populations based on Food Consumption Score (FCS) cut off points on a scale of 1 to 5 (with 5 being the most severe). The FCS thresholds applied were based on the internationally recognized thresholds, and applicable thresholds in Yemen. District level data was collected by FSAC partners in 182 districts. For the other 151 districts where district level data was not collected, extrapolations were made based on the March 2017 IPC, EFSNA 2016, and CFSS 2014 data sets.

For Nutrition, Combined GAM/SAM prevalence (EFSNA 2016, SMART 2016-2017, CHFS 2014) was used for the CMAM caseloads calculations, which accounts for a child being identified as acutely malnourished based on one or more of the following: MUAC, WFH Z-score, oedema. Number of PLW was estimated as 8 per cent of total population per district based on global estimates.

Under Option 2, clusters relied on their composite severity scores to estimate total PIN and to categorize this estimate as moderate or acute. This option was best suited to clusters that

lack sufficient data to support district-level PIN estimates. Severity scores were mapped to broad percentage estimates of the total district population (adjusted for displacement), with each score point (0-6) equivalent to 15 per cent of the population (0= 0 per cent; 6= 90 per cent). For example, a district that received a score of 5 would estimate 75 per cent of the adjusted population of that district to be in need, and those people would be categorized as acute PIN. Five clusters selected Option 2: WASH, Education, Shelter/NFIs/CCCM, Protection and Health. However, some clusters used different multipliers.

Inter-sector estimates of people in need (acute/moderate)

OCHA estimated total PIN in Yemen across clusters in three steps: 1) Identifying the single-highest cluster total PIN estimate in every district; 2) Adding the estimate of refugees and migrants in need in every district to the single-highest cluster PIN figure; 3) Adding all district-level totals together. This approach provides district-level total PIN estimates without double counting. To categorize total PIN as acute or moderate, OCHA relied on sectors' needs severity scores and the total PIN for each district. Scores of 2 or 3 were categorized as moderate, and scores of 4, 5 or 6 were categorized as acute. The proportion of moderate and acute scores in each district were then applied to the PIN for each district (e.g. if 45 per cent of sector severity scores fell in the acute range (4-6), 45 per cent of total PIN were categorized as acute, and 55 per cent as moderate). Similar to the overall PIN calculations, for each district acute people in need for RAM cluster was added to the calculated inter-cluster acute pin.

Refugees, asylum seekers and migrants

District-level population estimates of refugees, asylum seekers and migrants were developed by using 2017 estimates as the baseline. These baseline figures were adjusted using new arrivals data and the UNHCR proGres database to extrapolate refugee and asylum seeker statistics and profiles (location and gender). Field-based consultations in humanitarian hubs (Delphi methodology) were conducted to collect feedback from partners operating in different field locations. Reports on services provided last year were also drawn from various assessments carried out by protection and other actors. Analysis of these information sources informed final severity scores for each hub, the average being from all severity scores from delphi-discussion questions. This average was given a weight; districts receiving a score of 4 to 6 were categorized as having acute needs, whereas districts with scores of 2 and 3 were considered having moderate needs (districts which scored 0 and 1 were not included in total population in need estimates). Such weight was calculated against the total population number to give the final PIN.

Inter-sector IDP/refugee/host community severity

The Inter-Cluster Coordination Mechanism (ICCM) identified a set of multi-cluster indicators (see table below) to estimate the severity of needs per districts, in districts hosting IDPs and where returnees are residing. Indicators' scores for each district were summed up. The district sums were then clustered using Jenks natural breaks so that each district was assigned a score based on its sum. Districts with no IDPs or returnees were assigned a score of zero. Districts where the inter-sector needs converge with highest scores will be identified as high priority districts to be prioritized for inter-sector IDP/returnee/host community response. In addition to this, the respective clusters will identify other priority districts for their specific cluster response.

INDICATORS OF INTER-SECTOR IDP/REFUGEES/HOST COMMUNITY SEVERITY

INDICATOR	SECTOR	SOURCE
IDPs and returnees as percentage of current community population	Cross-sector	October 2017 TFPM data
% of IDPs in Hosting Sites / total IDPs population	Shelter, NFIs and CCCM	From cluster
Ratio of persons with vulnerabilities/specific needs to host population	Shelter, NFIs and CCCM	From cluster
% of IDPs hosting sites under threats of eviction	Protection	From cluster
Proportion of IDP and returnee communities in the district accessing an improved water source; and Proportion of IDP and returnee communities in district accessing a functioning latrine	WASH	From cluster
School aged IDPs/returnees as percentage of same age group in the resident community	Education	From cluster
Proportion of IDPs and returnee communities in the district accessing health services	Health	Calculated from MCLA 2017, 2016
Intensity of conflict in the same governorate		
Food security score	FSAC	From cluster