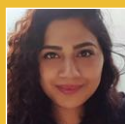


The nutrition hotspot analysis: Prioritising intervention areas in the Sahel countries

This article outlines the reflections, technical approach and development of a tool to identify the priority areas in Sahel countries on which to focus nutrition interventions



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SAHEL REGION

Key messages:

- Since 2019, humanitarian and government partners have collaborated to develop a nutrition hotspot analysis tool.
- Despite the challenges associated with engaging with multiple partners, the development of the tool has led to the creation of knowledge that can be used to improve nutrition surveillance and inform programming in Sahelian countries.
- Moving forward, the scoring tool will enable the six Sahelian countries to regularly update this hotspot analysis by performing simple data entry tasks.

Introduction

In the Sahel countries, wasting continues to be a major public health problem. While significant efforts have been put into achieving Sustainable Development Goal #2 (Zero Hunger), progress towards ending hunger, achieving food security and improving nutrition remains slow (United Nations, 2021). This has enormous human and economic costs, especially for the poorest and most vulnerable populations. In the Sahel, an average of 4.9 million children are estimated to suffer from wasting at any given time especially during the lean season when food becomes scarce and diarrhoeal and respiratory illnesses multiply (UNICEF et al, 2020). During 2020, the Sahelian countries experienced serious food and nutrition security issues due to escalating armed conflict, recurrent climate shocks, mass population displacement and the socioeconomic impacts of the COVID-19 pandemic on both households and systems (food, health, social protection, etc.) (OCHA, 2020).

Both humanitarian and development partners have determined that addressing wasting and food insecurity requires a multi-sector approach that ensures geographical prioritisation (the identification of hotspots), convergence and high population coverage (Ma'alin et al, 2016). Such approaches must be coordinated, adapted to

needs and should prioritise the areas and populations with the highest underlying risks and aggravating factors associated with wasting.

To prioritise their humanitarian efforts, countries in the West Africa region mainly rely on the 'Cadre Harmonisé' exercise, an early warning tool employed to conduct an integrated analysis of acute food and nutrition insecurity (CILSS, 2019). This exercise aims to identify the severity of food and nutrition insecurity, estimate and prioritise the population in need of immediate assistance based on the severity of food insecurity, classify geographical areas based on phases of severity for the current or projected situation and identify the most affected areas, key drivers and appropriate actions. The method utilised to conduct the nutrition insecurity analysis is based on the prevalence of wasting (either derived from weight-for-height or mid-upper arm circumference measurements or the presence of oedema in children 6-59 months) and the prevalence of malnutrition in women aged 15-49 years (estimated from body mass index).

The method used did not directly account for the link between malnutrition – both acute and chronic – and aggravating factors, co-morbidities or risk factors within the region. The regional Food Security and Nutrition (FSN) working

group therefore requested the World Food Programme (WFP) and UNICEF to reflect on ways to develop a comprehensive analytical method that would account for associated aggravating factors to improve the identification, targeting and prioritisation of those intervention areas in need of nutrition assistance (nutrition hotspots). This article describes the approach undertaken to develop what became known as the 'nutrition hotspot analysis' in the six countries that are referred to as the 'G5+1 Sahel countries' – Burkina Faso, Mali, Mauritania, Niger, Chad and Senegal.

Consultative and technical approach

A first version of the tool based on region-specific evidence

In 2018, the G5+1 Sahel countries experienced an acute food crisis which resulted in an estimated 3.6 million wasted children under five years of age with 1.3 million children severely wasted (UNICEF, 2018). This led the regional FSN working group to undertake a consultative and technical approach to identify nutrition hotspots and develop a method for the early warning of acute nutrition insecurity, the prioritisation of geographical intervention areas and the estimation of the expected caseload of wasted children during a given time period. As a result, WFP and UNICEF regional offices started to develop this approach in 2019, in close collaboration with the national nutrition working groups or clusters in the six Sahelian countries.

The first version of the method was developed using nutrition indicators such as the prevalence of global acute malnutrition (GAM), severe acute malnutrition (SAM) and stunting, the most recent data on internally displaced populations and the regional indicators for hazard and exposure, vulnerability and lack of coping capacity (INFORM Risk Index for Sahel¹). Region-specific evidence was used to estimate incidence correction factors per quarter which accounted for the impact of food insecurity,

seasonality and COVID-19 on the nutritional status of children under five years of age and adjusted the expected caseload of wasting in the G5+1 Sahel countries accordingly (WFP, 2020). The methodology and results of the first version were published in Field Exchange issue 65 (Magagi et al, 2021).

A second version of the tool based on stronger evidence

Although the use of the first version proved helpful for programmatic purposes, the FSN working group requested that the tool be revised so that it would be grounded in stronger evidence and a data-based methodology. The same data from country-level SMART surveys and INFORM Sahel was used for the second version. However, the key difference was the extensive literature review of 120 articles that helped to identify, classify and create scores for regional-level contributing or aggravating factors, especially related to food insecurity, seasonality and COVID-19. The literature review focused mainly on the G5+1 Sahel countries.

The Universities of Tours in France and Cheikh Anta Diop in Senegal provided support for the development of the methodology (University of Tours, 2020; UCAD, 2019). The objectives of the tool were refined to meet the following:

1. To identify the contributing or aggravating factors associated with malnutrition
2. To classify the identified factors according to risk level
3. To develop a scoring tool for the identified factors
4. To use the scoring tool to prioritise geographical intervention areas (hotspots)
5. To estimate the expected caseload of wasted children during 2021

After a technical review and endorsement by the regional FSN working group and national nutrition working groups or clusters involved, data from the March 2021 Cadre Harmonisé, recent SMART surveys from 2019-2020 (preva-

lence and risk factors of malnutrition), the October 2020 regional INFORM Sahel and the March 2020 economic and market impact analysis of COVID-19 was entered into the scoring tool to prioritise intervention areas (hotspots) and those populations in need of assistance in the G5+1 Sahel countries. When data on contributing or aggravating factors was not available or was outdated in a country, weighted averages were used from the other countries. Details on the methodology, data analysis and results are available in the FSN working group's Hotspot Analysis Technical Brief (WFP & UNICEF, 2021).

This initial round of nutrition hotspot analysis was conducted at the second-level administrative zones to align with the Cadre Harmonisé and resulted in a map of hotspots, as shown on the map in Figure 1.

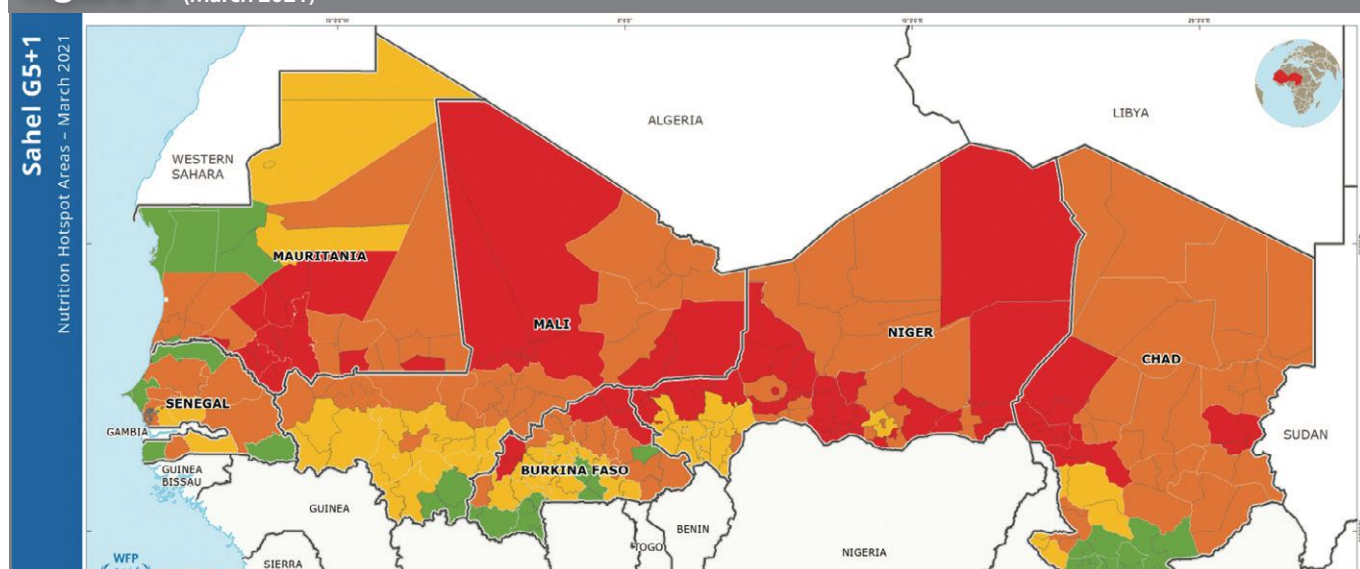
What we have learnt from developing the nutrition hotspot analysis tool

The overall success of this approach was the creation of knowledge that can be used to improve the targeting of food security and nutrition as well as healthcare services for priority areas (hotspots) and populations in need of urgent assistance in G5+1 Sahel countries. Another success was the use of an additional 23 criteria in the second version of the tool which made it more robust as it is based on broader evidence whereas the first version only used nine factors to prioritise nutrition hotspots and the expected caseload.

Government ownership, input and engagement through the national nutrition working groups or clusters was essential for strengthening partnerships between governments, non-gov-

¹ INFORM is a multi-stakeholder forum for developing shared, quantitative analysis relevant to humanitarian crises and disasters. The INFORM Risk Index is a global, open-source risk assessment for humanitarian crises and disasters. It can support decisions about prevention, preparedness and response. More information can be found at: <https://drmkc.jrc.ec.europa.eu/inform-index>

Figure 1 Number of children aged 6-59 months expected with GAM and SAM by priority areas in the G5+1 Sahel countries (March 2021)



ernmental organisations and the United Nations agencies. Ensuring government engagement can at times be challenging and labour-intensive but this was identified as critical to help to ensure the success of the hotspot analysis and the implementation of needs-based interventions. This was achieved through regular presentations and discussions with government partners and by involving government representatives in the validation of the tool, in data analysis and in interpreting the results (hotspots and caseloads) through the national working groups.

A key challenge was to harmonise the data that was used in the scoring tool as the indicators used and the data analysis methodology were different between studies. The value of the contributing or aggravating factors associated with the outcome of interest, namely wasting and stunting, along with their associated odds ratio and p-values, was extracted from the 120 studies reviewed from the literature and compiled in an Excel spreadsheet. The median value for each measure of association was then calculated when at least five articles from five consecutive (most recent) years were available. This was followed by a 'format standardisation of data' which consisted of converting disparate data structures into a common format while also correcting for inconsistencies, duplications and missing values. A decision tree approach, i.e., the Classification And Regression Trees (CART) method (Breiman et al. 1984), was used to validate the factors associated with both GAM (wasting) and stunting.

It has also been challenging to ensure the timely release of the nutrition hotspot analysis. Indeed, the nutrition hotspot analysis relies on

data from SMART surveys and the priority zones identified in the Cadre Harmonisé. Any delays in the availability of either of these documents can negatively affect the analysis. This was mitigated by using older data from previous SMART surveys. From 2019 to 2021, there have been no delays in the annual SMART surveys or the Cadre Harmonisé conducted in the six countries. However, to anticipate any concerns that may arise in the future, discussions are ongoing with the relevant regional working groups to ensure that both the national SMART surveys and Cadre Harmonisé analysis are conducted according to an agreed calendar.

The analysis has enabled adjusting and orienting planned preventive and curative interventions, strategies and approaches as well as resources to address wasting in the priority areas. It also allowed for a harmonised regional-level analysis that enabled a comparison of malnutrition severity between countries and performance analysis (response coverage and the number of expected wasted cases reached) at national and sub-national levels across the G5+1 Sahel countries. Finally, this created opportunities for advocacy with decision-makers and donors for funding.

Conclusion

The nutrition hotspot analysis methodology is an approach that allows for the rapid harmonisation and analysis of a wide range of data available on nutrition, food security and country-specific conditions (conflict, displacement, etc.) in order to prioritise geographic areas at the lowest administrative level as well to anticipate the number of wasted cases in need of urgent assistance by geographic area.

Moving forward, the scoring tool will enable the six Sahelian countries to regularly update this hotspot analysis by conducting simple data entry. However, it should be noted that the current tool uses context-specific causal factors of wasting which means that the tool can only be used in and by the G5+1 Sahel countries.

In an effort to institutionalise routine predictive analysis, WFP has initiated a collaboration with leading universities in the Sahel, Europe and the United States. This collaboration aims at further strengthening the tool's contribution to programmatic decision-making for improved timely nutrition emergency response in the Sahel.

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A mother breastfeeding her child at a cooking demonstration where mothers learn how to prepare enriched children's porridge with locally available ingredients in Chad