

Strengthening Nutrition Information Systems in Emergencies
Inception Report
Final September 10 2021

Background

In early 2020, as the scale of the COVID-19 pandemic became clear, humanitarians predicted significant impacts on food security and undernutrition—a crisis that would be “biblical, on steroids and across generations” was even forewarned (Haddad 2020). As the situation unfolded, the impacts on food and nutrition security were highly varied within and across countries and regions. Other, more recognizable factors such as conflict and climatic shocks interacted with the pandemic in complex ways. Consequently, Nutrition Information Systems (NIS) and the people who rely on them were forced to adjust to assess the variable and complex impact of the pandemic on the nutrition situation. This information was used for multiple purposes, including early warning, current assessment, projections, and monitoring (Lentz et al. 2020).¹

The potential impact of the pandemic was particularly worrying for already highly fragile and vulnerable countries. To provide just one example, in April 2020, as the first COVID-19 cases were detected in Yemen, the Famine Early Warning Systems Network (FEWS NET) (2020) predicted that the pandemic would have a compounding effect on the already critical nutrition situation, due to the partial loss of food assistance, rising food prices and escalation in conflict. As a result, the response plan forecast unmet funding needs of \$189.5 million. The Integrated Food Security Phase Classification (IPC) projected that Yemen would experience an estimated 16 percent increase in Global Acute Malnutrition (GAM) caseload and a 22 percent increase in the Severe Acute Malnutrition (SAM) caseload by the end of 2020 and forecast that in 2021, over 2.25 million children would be moderately to severely malnourished with higher risk of dying without urgent treatment (IPC, Yemen 2021).

Nutrition Information Systems- Definitions

GNC - An NIS is an integrated and centrally coordinated set of processes to continuously collect, analyze and interpret nutrition-related data, transform it into tangible information and disseminate it for making timely and effective decisions to improve the nutritional health of a population.

DataDent - A global nutrition data ecosystem characterized by a strong leadership, consensus on data priorities, and capacity to generate, analyse and use data, analytics and evidence is need to tackle malnutrition in all its forms.

The COVID-19 pandemic has exposed many weaknesses and gaps associated with NIS in emergencies (NIS-e). UNICEF HQ is working in collaboration with the GNC-Technical Alliance and other partners and platforms to develop a roadmap for system wide improvements of NIS-e. The study outlined in this Inception Report will build on the successes and progress in NIS-e to date, whilst taking the opportunity to learn from the Covid-19 pandemic and its’ significant impact on the use of nutrition information for decision-making in nutrition crises.

The impact of Covid-19 on NIS-e data collection

The prevalence of GAM has long been established as a key outcome indicator, used to judge the severity of an emergency, the nutrition service needs or caseload, and associated funding requirements. It is used as a type of scorecard for the impact of the ongoing response on earlier estimates of acute malnutrition. The Standardized Monitoring and Assessment of Relief and Transitions (SMART) survey provides an accurate and trusted estimate of GAM prevalence, which contributes to the confidence that decision makers and donors have in the process of estimating needs, calculating caseloads, and forecasting funding requirements. SMART surveys have thus become the widely recognised “gold standard” tool for estimating the prevalence of acute malnutrition, used for example by the IPC, to contribute to an understanding of the severity of an emergency.

Covid-19-related social distancing protocols made SMART surveys impossible in almost all emergencies during most of 2020 (Global Nutrition Cluster, 2020) and into 2021. As it became clear that the pandemic would have severe impacts on nutrition, the nutrition community had its gold standard tool removed from its analysis tool kit to detect this impact and monitor the veracity of worrying predictions. In addition, the resulting lack of up-to-date analysis meant that measures of the effectiveness of the nutrition response to this situation, and other shocks, was (and remains) sorely lacking. Decision makers, including key donors, have since felt much less confident in estimates of actual and predicted nutrition caseloads and associated financing and programme planning requests.

By July 2020, analysis teams were advised to extrapolate prevalence estimates from past SMART survey results using data on contributing (or causal) factors (Global Nutrition Cluster, 2020). The guidance advised that, if the situation had not changed since the last survey, then the point prevalence was to remain the same. If analysis of contributing factors suggested a worsening situation however, the upper confidence interval from the previous survey were to be used as the new prevalence estimate. Although this is a pragmatic approach, no advice was given in the guidance on how to utilise contributing factors information and data to alter the severity classification and how to adjust prevalence and caseload extrapolations. This meant that country actors were left judging severity and projecting caseloads based on less than optimum analysis of contributing factors. It should be noted that, even prior to the pandemic, contributing factors analysis was not strong and to large degree, had ‘atrophied’ due to the lack of a clear systematic analytical framework for contributing factors analysis. The Nutrition Causal Framework is used to identify which data on contributing factors should be collected and it is assumed that the framework will be used as the analytical structure to take into account contributing factors. However, there remains many opportunities to strengthen the analysis of contributing factors and to improve the use of this analysis in decision making about projections of severity and caseloads. Ultimately, in Yemen for example, caseloads in 2020/21 were estimated from SMART surveys conducted in previous years and early 2020, with few if any adjustments made as a result of an analysis of changes in context and contributing factors.

Continuing the example of Yemen, support for the Humanitarian Response Plan (HRP) throughout 2020 was only around half of the sum requested. Whilst HRP s historically have experienced different degrees of underfunding, the fragile confidence in the evidence of the deteriorating nutrition situation certainly weakened efforts to strongly advocate for increased funding on the basis of a thorough analysis. In November 2020, the Emergency Relief Coordinator of the United Nations (UN) asserted to the United Nations Security Council (UNSC) that “Yemenis are not going hungry. They are being starved” and called for earlier and increased funding for 2021 to “prevent UN programme closures and famine in Yemen” (OCHA 2020). This call however, was not based on recent analysis to

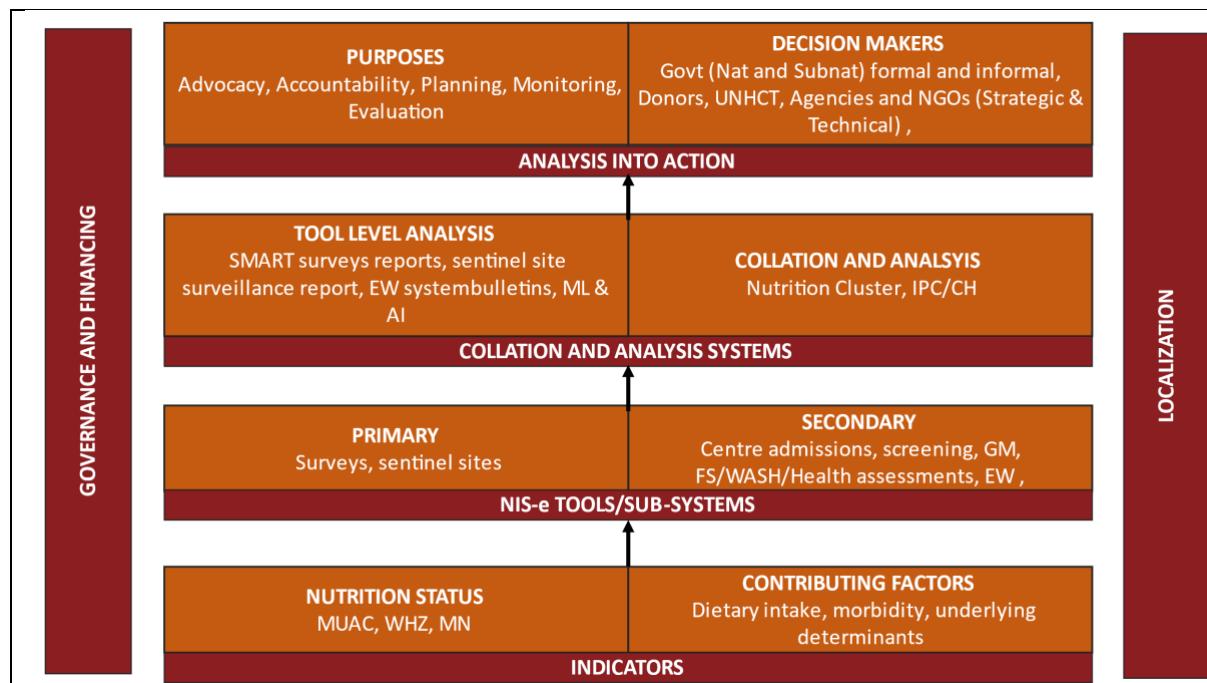
underpin a warning of mass starvation and, to date, very fortunately, there has not been evidence of mass starvation in Yemen.

An ecosystem approach

NIS-e is best considered using an ecosystem approach whereby ‘ecosystem’ is defined as ‘a group of interacting or interrelated elements that act according to a set of rules to form a unified whole’. Using this lens, the NIS-e ecosystem can be characterised as a network comprising a complex array of initiatives, activities and stakeholders operating at country, regional and global level. In a typical country, NIS-e might include the IPC, the Nutrition Cluster information system, SMART surveys, nutrition surveillance, nutrition early warning systems and monitoring or nutrition programme information. Data from these tools and platforms is collated together with data from other emergency information systems such as health, WASH and food security to inform a holistic analysis of the nutrition situation and needs.

To consider the contribution of each NIS-e to the whole ecosystem, any analysis must therefore go beyond a consideration of indicators, tools, platforms and analytical frameworks to include each system’s purpose, governance and financing systems from country to global level, and linkages to other information systems. Figure 1 below provides an early framework for connecting these elements to understand how each NIS-e contributes to the whole. Governance structures already exists at each level within NIS-e and many have demonstrated success in improving the quality and effectiveness of the system. However, preliminary feedback suggests that governance systems could still improve. Feedback also suggests that current financing of NIS-e is fractured with little clarity of how NIS-e are costed and financed at global, regional and country level.

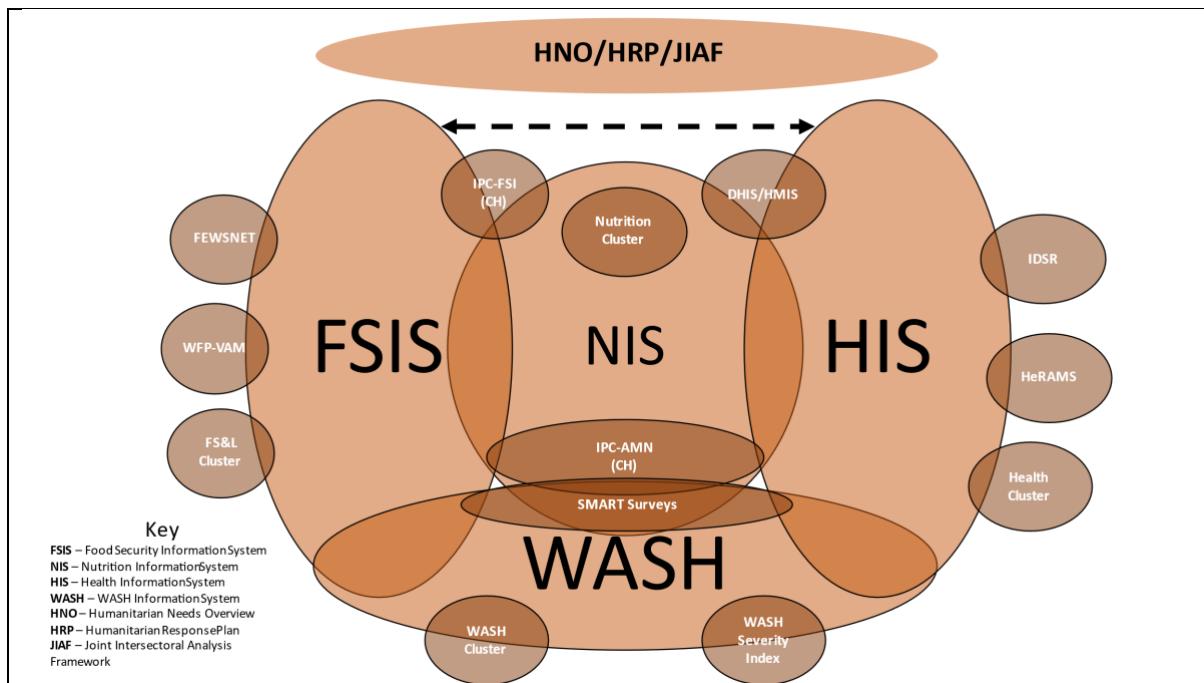
Figure 1: An NISe framework



Source: Authors

As indicated above, the Covid-19 experience has thrown into sharp relief the fallibility of over-relying on SMART surveys where there are severe restrictions in terms of access. The need for the development and deployment of other methods to build a more complete and up to date picture of nutrition needs in populations affected by emergencies is clear. Figure 2 below gives an initial picture of the tools and platforms that can contribute to this wider and more holistic analysis which will be further developed in this study.

Figure 2: Early draft of the NIS-e and linked Information Systems, Tools and Platforms



Source: Authors

The who and what of NIS-e data

The Covid-19 experiences have highlighted that the NIS-e ecosystem is not yet ‘fit for purpose’ in providing clarity on the analysis needed to inform a response to nutrition related needs. This is not to deny that significant attention has been given to successfully improving the quality of parts of the data collection, collation and curation of what we refer to as an NIS-e ecosystem but we need to go much further. A more systematic approach to how and what data and information is collected and collated and the right tools to analyse this data will better validate current and projected needs estimates.

While it is implicitly understood that NIS-e are primarily used to inform the need for an emergency nutrition response and in turn to show the effectiveness of that response or where responses may need to be improved or modified, there is currently limited focus on how data and analysis from NIS-e are actually used to inform decision making and response. Preliminary feedback from donor and senior UN decision makers suggests that NIS-e data and analysis as it appears on Cluster Dashboards for example or the IPC platforms provides little clarity or direction for decision-making or indeed, who the data and analyses are meant to inform and influence. In 2020, DataDENT completed a landscaping of data visualization tools (DVT) for nutrition and concluded that a “clear theory of change helps ensure the DVT will lead to the intended action” and that “DVT’s should include more actionable indicators for their target audience to influence their behaviour and decisions”.

With these observations in mind, all stages of the data cycle should be considered when analysing the NIS-e, with particular attention to how analysis and decision making are linked. The data cycle shown in Figure 3 below illustrates the importance of defining purpose, the indicators to be collected and collated and the analysis and communications approaches used to influence decisions that lead to action. This cycle can be used for the entire NIS-e ecosystem or for sub-systems such as SMART surveys or nutrition early warning. Feedback from decision makers indicates that the current understanding of the purposes of the different parts of the NIS-e ecosystem needs to be reviewed.



Localisation and NIS-e

An ecosystem is made up of its parts and NIS-e involves not just global and international organisations but, critically, national and local governments, non-governmental organisations (NGOs), civil society organisations and formal and informal community groups. Each group of stakeholders has a role to play in NIS-e, especially in emergencies, and experience from other related technical fields in emergencies shows that, where attention to ‘localization’ is paid, this can result in systems that are more resilient and greater than the sum of their parts. Localisation refers in this context to joint political, economic and technical ownership of NIS-e. Political ownership requires political support for the NIS-e and willingness of decision-makers to respond to agreed thresholds and analysis emanating from NIS-e. Economic ownership necessitates a level of local financing for NIS-e to ensure sustainability even if this is supplemented by international actors. Technical ownership requires that national and local technicians and professionals help design and operate the system and work with decision-makers to ensure that the design and operation of the system meets the needs of decision-makers.

Study Scope and Methodology

The aim of this study is to examine the current NIS-e ecosystem in terms of the organization and utility of each of its parts and the whole, with a view to identifying how to strengthen existing systems to better inform response to the nutrition needs of populations in crisis. The study will also review the current state of governance, how effectively existing arrangements responded to the pandemic and make suggestions/recommendations on next steps. Linked to these perceptions of the effectiveness of NIS-e governance are perceptions that the financing of NIS-e seems to be fractured with little clarity of how NIS-e are costed and financed at global, regional and country level. This study will therefore also look at these arrangements.

Objectives

1. To map the main NIS-e systems in the overall NIS-e ecosystem at global, regional and country level to understand how they are defined, their stated purpose/s, utility for decision making and where there may be potential for strengthening these systems through greater linkages and coherence.
2. To map the governance and financing arrangements of NIS-e to determine where these might be strengthened.
3. To examine the potential for strengthening NIS-e using a localisation lens.

Outputs

A Roadmap with key recommendations on the main steps to achieve an improved NIS-e ecosystem

In order to understand NIE-e prior to the Covid-19 pandemic and its adaptation in response to the pandemic, this study will focus on the evidence for what worked and didn't work in NIS-e prior to and during the Covid-19 pandemic. This will be approached by investigating the adaptations that were made during the COVID-19 pandemic and lessons learned, the theoretical stated and actual purposes of NIS-e systems and sub-systems. With a better understanding of how the NIS-e system is currently working, adaptations to the governance and financing, localisation and the data value cycle can be suggested in a roadmap.

As stated above, the study will use an 'eco-systems view' of NIS-e where all types of nutrition information systems, and other emergency information systems, are considered. A systems view of NIS-e ensures that the study will not only examine the Data Value Cycle but also take into account how the NIS-e system is governed, financed, linked to other emergency information systems and through a localization lens is more resilient and functions more effectively, efficiently and equitably.

A Diagnostic Paper will focus on the main data collation, curation and analysis of each NIS-e within the NIS-e ecosystem (such as the GNC Information Systems, the Integrated Phased Classification (IPC) - Acute Malnutrition (AMN) or Cadre Harmonise (CH) systems) and the nutrition data collection systems that feed into them e.g. SMART surveys and nutrition programme monitoring. Early Warning and Real Time Monitoring systems that collect significant nutrition status related data will also be considered. As nutrition status is the result of multi-sectoral immediate and underlying determinants described in the conceptual framework a good proportion of the data important for nutrition analysis are collected, collated and curated by other interconnected humanitarian information systems e.g. health or WASH data. The study will look at how these linked information sources contribute to the analysis phase of the nutrition data cycle. Finally, in recent years, predictive analytics, machine learning and artificial intelligence are beginning to test approaches to contribute to the NIS-e ecosystem. The study will bring together the latest thinking on these new approaches and their potential contribution.

Step one

Map the main global and regional NIS-e sub-systems and platforms, their characteristics, governance and financing structures, their level of connectedness and their definitions, stated purpose/s including, IPC/CH, GNC-Information Systems, and the main tools that they are based on (SMART, SQUEAC). As part of this mapping, we will consider how systems have been adapted to the COVID-19 pandemic, how information on immediate and underlying causes of malnutrition are incorporated

into the analytical framework and NIS-e conclusions and recommendations. As part of the Inception period, work has already started on Step 1 and an annex is attached here of the draft mapping process.

Step two

Consolidate the mapping of stated purposes underpinned by a framework with four layers of characteristics of NIS-e including their indicators; tools and sub-systems; collation and analysis; and decision making. A framework for this step has been considered during the Inception Phase and will be further developed as the phased work gets underway.

Step three

Based on the findings from steps one and two, develop a questionnaire to guide a small number (up to 15) of targeted key informant interviews (KII) at the global, regional (for example the Nutrition Information Systems Global Technical Working Group (NISGTWG)) and country levels to better understand the strengths, constraints and opportunities to achieving a stronger NIS-e ecosystem and agree the identification of case examples that highlight elements of this analysis. This activity will focus on the needs of decision makers and the extent to which each current NIS-e meets their needs.

Step four

Based on the KIIs, map the characteristics of NIS-e governance and financing structures, and their current localization status. The KIIs will also allow the study to compare and contrast the stated purposes with the KIIs perception of the purpose of each NIS-e at global, regional and country levels.

Step five

Carry out a small number of illustrative case examples (up to three) of countries experiencing protracted crisis that offer lessons learned on key aspects of the analysis. This will focus on current large scale protracted emergencies in Yemen, Somalia, South Sudan, Northern Nigeria, Democratic Republic of Congo, Afghanistan, Tigray (Ethiopia) and other countries in the Sahel region. This step may also involve a limited number of KIIs.

Step six

Develop a roadmap that sets out practical recommendations and key steps (technical, financial, governance, and localization) to adapt, transform and deliver a stronger NIE-e ecosystem that fulfills the needs of decision makers to respond to the needs of crisis affected populations.

Step seven

Conduct a research uptake event with major NIS-e stakeholders to reflect on the proposed roadmap to identify areas of consensus and agree next steps.

Deliverables and timing

This assignment will involve two main deliverables: the Inception Report (this document) to be delivered and agreed by mid-July 2021, and the Diagnostic Paper to be delivered by late October 2021. The more detailed anticipated timings are indicated in Table 1 below but will need to be adapted and updated, depending on the availability of participants of KIIs and those feeding into the deliverables.

Consultancy Governance

UNICEF Nutrition will supervise the consultancy. The Global Nutrition Information Systems Technical Working Group will guide, review and support the consultancy.

1. Review/ feedback on the Inception Report
2. Participate in interviews/ provide insights into NISe at all levels
3. Review final draft of the diagnostic paper
4. Co-chair the research uptake event (consultative workshop)
5. Review recommendations
6. Consider recommendations in 2 year work-plan

Table 1: Indicative timings

Activities	July					August					September					October				November				
	Wk1	Wk2	Wk3	Wk4	Wk5	Wk1	Wk2	Wk3	Wk4	Wk1	Wk2	Wk3	Wk4	Wk5	Wk1	Wk2	Wk3	Wk4	Wk1	Wk2	Wk3	Wk4		
Diagnostic - Operational																								
Inception Report																								
Steering Committee Meeting																								
Final Draft																								
Steering Committee Meeting																								
Consultative Workshop																								
Final Draft and Road Map Development																								

Roles of team members

This work is led by Peter Hailey (Annex 2) from Centre for Humanitarian Change (Annex 3). N4D will also support the several steps of this work, but with a specific focus on the Diagnostic Paper, mapping and planning for the KIIs and feeding into the Road Map. N4D comprises an experienced team of partners including Chris Leather, Jeremy Shoham and Carmel Dolan who specialise in governance and financing, humanitarian systems and responses and a variety of technical nutrition considerations as well as a small number of skilled and experienced associates who support N4D activities (see <https://www.n4d.group/> for more detailed biographies)

Risks and assumptions

The NIS-e ecosystem, as outlined above is a complex array of systems, platforms and approaches underpinned by strong views on the role of these systems in informing emergency decision making and response. There is a risk that whilst this assignment is focussed on system strengthening, the questions it will raise may be viewed as threatening to the current modus operandi of these systems. This will be managed by engaging the key stakeholders very early on in the process and creating an open and transparent dialogue to mitigate these concerns wherever possible. In particular the NISGTWG will be invited to form a steering group to provide guidance on the study, review the final draft versions of the deliverables and take a lead on the research uptake phase of the work.

The assignment team will need to access a range of resources and key people and in this sense, the process is dependent on the willingness of people to share their expertise and insights. By fostering a collaborative approach to this work it is hoped that people will share freely and without recourse to limiting our access to the information needed.

The work covers the summer period and there is an inevitability about delays in reaching people during the seasonal holiday. Forward planning will help mitigate the risk of delays, but it is not a total guarantee.