

Nutrition Information Systems in Fragile and Conflict Situations

A Diagnostics paper

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Acronyms

AFI- Acute Food Insecurity	IPC AFI- Integrated Food Security Phase Classification Acute Food Insecurity
CDC- Centres for Disease Control and Prevention	IPC AMN- Integrated Food Security Phase Classification Acute Malnutrition
CH- Cadre Harmonise	JIAF- Joint Intersectoral Analysis Framework
CMAM- Community Management of Acute Malnutrition	KII- Key Informant Interviews
DHS- Demographic Health Survey	MAD- Minimum Acceptable Diet
DHIS2- District Health Information Software	MAM- Moderate Acute Malnutrition
ECHO- European Civil Protection and Humanitarian Aid Operations	MDD- Minimum Dietary Diversity
FAO- Food and Agriculture Organization	MDD-W - Minimum Dietary Diversity – Women
FCS- Fragile and Conflict Settings	MICS- Multi-Indicator Cluster Surveys
FEWS NET- Famine Early Warning Systems Network	MIYCN- maternal, infant and young child nutrition
FS- Food Security	MMF- Minimum Meal Frequency
GAM- Global Acute Malnutrition	MoH- Ministry of Health
GNC- Global Nutrition Cluster	MUAC- Mid Upper Arm Circumference
GSU- Global Support Hub	NCC- Nutrition Cluster Coordinator
HIS- Health Information System	NGO- Non-Governmental Organisation
HISP- Health Information Support Programme	NIS- Nutrition Information System
HMIS- Health Management Information System	NIS GTWG Nutrition Information System Global Thematic Working Group
HNO- Humanitarian Needs Overview	NIS GC- Nutrition Information System Governance Committee
HRP- Humanitarian Response Plan	SAM- Severe Acute Malnutrition
IDP- Internally displaced persons	SMART- Standardised Monitoring of Relief and Transition
INGO- International Non-Governmental Organisation	SUN- Scaling Up Nutrition Movement
IMC- International Medical Corps	UNICEF- United Nations Children’s Fund
IM- Information Management	VAM- Vulnerability Analysis and Mapping
IMO- Information Management Officer	WASH- Water, Hygiene and Sanitation
IPC- Integrated Food Security Phase Classification	WFP- World Food Programme
	WHO- World Health Organization

Section One: Introduction

Strong and resilient nutrition information systems (NIS) enable the collection, analysis, and use of nutrition status and nutrition-related information to support timely decision-making to improve maternal and child nutrition and other vulnerable groups. The development of NIS to support nutrition responses in Fragile and Conflict Situations¹ (FCS) is hugely important, due to the extreme fragility of people's nutrition, and the fast-changing nature of such contexts. However, it is in these environments that building strong and resilient NIS is the most challenging, due to fragility in national, development, and humanitarian systems, and the complexity of the environment.

A complex array of initiatives, activities, and stakeholders for NIS currently operate at country, regional and global levels. Collectively these multiple NIS constitute a NI ecosystem that extends from local to global levels as interacting or interrelated elements and functions that act according to a set of rules to form a unified whole.

There are many strengths within the current NI ecosystem and its parts, and much progress has been made in implementing stronger processes in recent years. However, the COVID-19 pandemic has exposed weaknesses and gaps that remain. For example, due to social distancing protocols, Standardised Monitoring of Relief and Transition (SMART) surveys (the gold standard tool for NIS (FCS)) were often impossible to conduct during the pandemic and were advised against². The absence of these surveys made the task of detecting the extent of COVID-19 impact on nutrition very challenging as well as the tasks of guiding appropriate responses and monitoring response effectiveness.

Responding to these challenges, UNICEF is working with the GNC Technical Alliance (referred to from hereon in as the Alliance) and other partners and platforms to develop a roadmap for system-wide improvements in NIS (FCS). This represents a critical moment for positive system change to build on what has been learnt from the pandemic, given the growing risk of famine and increasing malnutrition due to increasing intensity of climate change, conflict, and widespread economic and political pressures. Now more than ever, the nutrition community needs analysis that will enable the prioritisation of limited resources for the most effective, efficient, equitable, and timely responses possible. There are also opportunities: including increased availability of digital technologies, the attention being afforded to the humanitarian and development nexus and the localisation agenda³. NIS can capitalise on these opportunities to create greater effectiveness, equity, and increased levels of system resilience, sustainability and accountability. Together these realities make this a critical moment to step back and analyse the current NIS (FCS) ecosystem and its parts, with a view to identify how best NIS (FCS) can be strengthened to better inform responses to the nutrition needs of the worlds' most vulnerable populations living in FCS.

The purpose of this diagnostic paper is to present the results of an examination of the current NI ecosystem and the opportunities that exist for system strengthening to help inform the UNICEF and

¹ The [World Bank list of FCS](#) is released annually and is widely used and adapted by other organisations so that different lists of countries, territories and states are common though they share many similar features. Because of the complexity of fragility and conflict, the list is not comprehensive, nor does it include all countries affected nor rank countries by the degree of severity. The list is based on publicly available global indicators and uses the following categories: those with high levels of institutional and social fragility, identified based on publicly available indicators that measure the quality of policy and institutions and manifestations of fragility; those affected by violent conflict, identified based on a threshold number of conflict-related deaths relative to the population and placed into two sub-categories of high and medium intensity. It must be noted that there are other lists of FCS and for the purposes of this paper with its focus on NIS, it may be worth considering whether all countries in which the nutrition cluster is activated should be classified as FCS.

² As per the Global Nutrition Cluster (GNC)/UNICEF global guidance [Briefs #1&2: Nutrition Information Management, Surveillance and Monitoring in the context of COVID-19 | Nutrition Cluster](#)

³ The localisation agenda is part of the Grand Bargain, a set of 51 commitments made by governments and humanitarian aid agencies at the World Humanitarian Summit in May 2016, which commits to "making principled humanitarian action as local as possible and as international as necessary."

Alliance work on a NIS (FCS) roadmap. UNICEF and the Alliance are the main audiences for this paper; however, the paper has wider relevance for regional, national, sub-national, and global actors, who are engaged in nutrition in FCS.

This diagnostic discusses the purposes of NIS in FCS contexts. These NIS purposes while broadly the same in more stable contexts, differ in terms of some areas of focus and priority. For example, the needs and targets set in Humanitarian Response Plans (HRPs) have a different focus to the needs and targets identified in national multi-sectoral nutrition strategies. Despite this difference, there is increasing convergence between the purposes, structures and processes of NIS originally designed for either development or emergency contexts. Therefore, the strengthening of NIS (FCS) should consider the differing priorities and focuses with a nexus lens. Many of the observations and conclusions in this diagnosis paper are focused on the humanitarian parts of the NI ecosystem but also have relevance to the nexus agenda for NIS and indeed, to the development parts of the NI ecosystem. Visioning NIS (FCS) as an ecosystem, including both national, humanitarian and development objectives, is vital to ensure that humanitarian and development actors align and work together to create a strong and functioning NIS to address nutrition needs and monitor progress.

The approach used for this diagnostic paper involved a desk-based review of available documentation describing NIS at global, regional and national levels (Annex 1) and key informant interviews were carried out with individuals representing donors, UN agency and INGO staff, and academia to obtain their views and insights (Annex 2). The paper benefited from comments on an early draft prior to finalisation, from UNICEF Headquarter staff and members of the Alliance NIS Global Technical Working Group (NIS GTWG).

This paper is made up of six sections with a summary of the main points provided in each section. Section One (this section) introduces the paper, Section Two explores the views of stakeholders on the NIS (FCS) ecosystem and its governance with direct quotes included where relevant (denoted in italics). Section Three suggests definitions of the purposes of the NI ecosystem in FCS, based on the literature and Section Four describes the current structures of the ecosystem as well as how it overlaps with other sectoral information systems. Section Five is the most detailed and lengthy section as it provides critique of the strengths and weaknesses of the NIS (FCS) ecosystem and in particular, the different functions arranged in the data cycle. Some major conclusions and recommended ways forward are contained in Section Five (denoted in shaded text) and Section Six provides suggested next steps for future action to inform the NIS (FCS) Road Map.

Summary Points

- Multiple NIS initiatives, activities, and stakeholders operate locally, nationally and internationally and together, constitute a Nutrition Information Ecosystem which has interrelated purposes, structures and processes that, together, form an ecosystem.
- Progress in strengthening NIS has been evident in recent years thanks to the efforts of global, regional, and national actors. Nonetheless, COVID-19 has highlighted weaknesses and lessons to be learnt to continue to strengthen NIS in FCS.
- This paper, commissioned by UNICEF, is a narrative review that describes and analyses the current state of NIS (FCS) to help inform a new Road Map towards a more resilient and reliable NIS, recognising the global climate, economic, and systems-wide fragility and its impact on people and systems in FCS.

Section Two: Stakeholders views on the NI ecosystem and Governance

Stakeholder views on the NI ecosystem

As described above, NIS (FCS) is made up of an array of multiple partners, sectors, tools and platforms with varying but linked purposes, and application in a wide variety of country contexts, scales (local to global) and processes which form the NI 'ecosystem'. Elements of NIS have been strengthened in recent years and the COVID-19 pandemic provided opportunities for NIS innovations and creativity as well as highlighting the fault lines which need to be addressed. This section draws heavily on the insights and expertise of key stakeholders representing international donors, UN agencies and INGOs at global and regional levels who were interviewed to gain insights into what is going well and what needs strengthening⁴. The reflections have been broadly organised under four sub-headings: strategic approach, analytical limitations, communication analysis and localisation.

The need for a more strategic approach to developing and strengthening NIS in FCS

The lack of an overall vision for NIS (FCS) and the need for much greater resourcing, capacities and strategic planning was a recurring concern of stakeholders. These needs exist across the ecosystem and stakeholders emphasised the importance of investing in resourcing, capacities and strategic planning at global, national and sub-national levels. As one respondent noted, *"We need clearer and improved institutional commitment to lead on NIS and it has to be an agency that is best placed to have this strategic role"*.

Stakeholders characterised current NIS elements as lacking consensus and coherence with dissenting or critical voices undermining a clear narrative on the vision for NIS (FCS) and for analysis to inform decision making and resource allocations. They noted that *"Too often there are dissenting voices especially in global fora and any creative approaches are stifled such as the good work on S3M [Simple Spatial Sampling Methods] or LQAS [Lot Quality Assurance Sampling] which were all dismissed"*. Interviewees felt that a common vision among NIS (FCS) ecosystem partners and mechanisms would enable, and lead to, common purposes, guiding principles and approaches as well as a shared message on costing of attaining this common vision. As one stakeholder put it, *"We need a unified and confident voice"*.

There is also a strong sense among stakeholders interviewed that the plethora of NIS related initiatives at both global and national levels are too often uncoordinated and at times, siloed with one respondent noting, *"At the moment 'too many cooks' are involved in NIS"*. It is very clear that there have been efforts to address gaps and weaknesses as evidenced by, for example to name a few, [UNICEF's guidance on NIS](#), the work within the Alliance's NIS GTWG and the Integrated Food Security Phase Classification (IPC) Acute Malnutrition Classification (AMN)⁵ development of action plans to strengthen elements of NIS. The most recent IPC Road Map (to be published) highlights the need to establish a joint and inclusive IPC AMN and IPC Acute Food Insecurity (AFI) Technical Working Group in priority countries and recommends a task force to foster improved coordination around NIS. However, these mechanisms, being largely concerned with technical considerations and processes, and their authority to steer the NI ecosystem towards the bigger picture framing is unclear. The following sections use a structure that might be used to construct this common vision.

The need for stronger leadership, good governance and more resources for NIS (FCS)

Strong leadership and good governance are necessary to foster collective impact. Within the UN system, responsibility for NIS falls to UNICEF as the lead nutrition agency and the provider of last resort for the

⁴ National stakeholders were not interviewed as the audience for this phase of diagnosis was primarily at an international level, but future phases during the development of the Road Map will ensure greater representation of national and sub-national actors.

⁵ These mechanisms are further explored in Section 3.

IASC Nutrition Cluster mechanism. Those interviewed view UNICEF as needing to “*get further ahead*” in this area as the lack of clarity as to who has overall responsibility for strategy, influencing and resourcing for NIS (FCS) amongst the main stakeholders is a concern. [UNICEF’s latest Nutrition Strategy \(2020-2030\)](#) does not afford a major priority to NIS strengthening, though recent appointments of HQ level staff with a focus on NIS (FCS), UNICEF’s co-chairing role of the NISGTWG and the commissioning of this diagnostic paper are signals of the strong intent to strengthen NIS (FCS) emerging out of lessons from the COVID-19 pandemic. Additionally, there are discussions taking place between the IPC and UNICEF for UNICEF to take on more of a leadership role on the IPCAMN. WFP’s leadership for Food Security (FS) Information Systems (FSIS) was highlighted by many of those interviewed as a ‘model’ for NIS (FCS) given the attention WFP affords to staffing, tools, advocacy and communication through the VAM Unit amongst other initiatives. As one donor commented, “*The current NI ecosystem doesn’t help...to advocate for nutrition and this is in contrast to the FSIS via the FS Cluster or WFP which do a much better job*”.

Arguably, the reported lack of a common vision and strong leadership for NIS (FCS) has meant that attempts to address the many technical and political challenges facing the ecosystem are more reactive than pre-emptive or strategic and progress has been slower than should be the case. Stakeholders were unable to pinpoint an agreed forum for developing a unifying vision and promoting coherence between the components of the NI ecosystem in order to deliver collective impact. Whilst the NIS GTWG brings multiple actors together, according to some of those interviewed “*it is not dealing with the (strategic) issues but is more of an information exchange/updating platform*”, and it “*has no clear purpose other than to hear updates*” and appears to be missing opportunities to drive attention and investments towards NIS as indicated by one interviewee who stated that “*I have no idea what to bring back to my agency to effect change following an NIS GTWG meeting*”.

While there is a great deal of interaction between different NIS (FCS) actors and mechanisms, for example the IPC and CH are very closely connected with shared approaches and learning and the GNC and IPC actors work closely together at the country and international level, the lack of a coordination mechanism and forum for the many actors and mechanisms in the ecosystem maintains the siloed way of working. It also mitigates against consensus, transparency and inclusivity.

There are no concrete figures on the levels of financing for NIS (FCS) currently although most stakeholders reported that resources for NIS (FCS) are insufficient. Existing work plans or road maps aiming to strengthen NIS (FCS) (for example, GNC and IPC/AMN) are viewed as largely aspirational as many activities therein do not have committed funding. The work undertaken by experts who are members of the NIS GTWG or IPC or CH for example is most often reliant on the dedication of those already in demanding full-time roles. Stakeholders reported very few human resources dedicated to NIS (FCS) at global or national level. As stated by some informants, “*unlike the WFP VAM Unit or the IFE Core Group, there aren’t dedicated, funded positions to oversee a NIS vision, strategy, coherence and day-to-day NIS activities and processes*”. Additionally, gaps were noted at the national level with stakeholders commenting, “*a significant gap currently is who is responsible for financing and strengthening NIS and surge capacity at country level*”.

Stakeholders also reported a lack of analytical capacity at national level. As one interviewee commented “*it often feels as though we need to start from scratch every time there is an emergency*”. Many platforms such as the IPC, CH, UNICEF and WFP, SMART and initiatives like NIPN⁶ have invested in NIS capacity strengthening, and systems strengthening of national and local level NIS (FCS). However, many of those interviewed asserted the need to invest more in strengthening NIS at the national and local level. There are no data available for financing of data collected and collated by all national NIS actors

⁶ NIPN is a donor funded initiative to support national information platforms for nutrition. These platforms aim to support policy formulation, programme design and investment decisions for nutrition. NIPN currently operates in nine countries. Teams are hosted in national organisations and a NIPN multi-sector advisory committee guides country teams.

including national ministries and parastatals. Yet, as numerous stakeholders commented, national and sub-national systems for nutrition related data collection, collation and analysis can only be strengthened through greater commitments and investments and that this in turn closely relates to the realisation of the nexus between development and humanitarian NIS efforts. Efforts in this regard are underway, for example, *“The GNC are increasing their focus on HDN issues and will be working towards strengthening NIS long-term in countries so that these can be scaled up in acute emergencies”*. Good examples of investment in strengthening government NIS include Kenya which now uses a variety of data sources and tools under the leadership of the Ministry of Health (MoH) with clarity and consensus amongst stakeholders about the data purposes, structures and processes. UNICEF Kenya provided significant leadership and capacity building to support this system. The UNISE programme in Ethiopia is another example of a national NIS strengthening initiative⁷.

When nutrition surveys are needed, it has often proven difficult to secure funding, especially in countries referred to as *‘forgotten emergencies’*⁸ so coverage of survey data is variable and patchy. For example, in Central African Republic, up until recently there had not been funding for surveys since 2014 and in 2021, and *“when the food security situation had deteriorated, funding for surveys took time to organise and surveys were delayed by many months”*.

Some donors interviewed stated that they have funding for NIS but are not sure what to prioritise for spending. They also indicated a willingness *“to fund UNICEF to beef up its capacity in analytical/epidemiological work (using multiple sources of data) to get a handle on trends, use of overlaying data etc., but first, UNICEF governance needs to take this (i.e., NIS) much more seriously”*.

Stakeholders noted that the areas where greater investment is needed include activity monitoring, surveillance systems, collection, collation and analysis of determinants of nutrition outcomes. As one respondent indicated, *“NIS is much bigger than SMART though people tend to pay too much attention to it. People need to view NIS as a portfolio of tools including screening, routine programme data, predictive modelling, surveillance, programme coverage, surveys. These activities and functions need sustainable funding”*. Section 6 makes suggestions on possible approaches to strengthen the vision, governance, leadership and financing of NIS in FCS.

Analytical challenges

Stakeholders reported that NIS (FCS) have increasingly focussed on anthropometric data, particularly Global Acute Malnutrition (GAM) prevalence data, to determine needs and to compare severity and magnitude of needs across countries. As one respondent noted, *“The over-riding need for GAM is highly socialised in people’s psyche”*. Yet, the COVID-19 pandemic was highlighted as an example of how, when access issues prevented SMART surveys from being conducted, needs assessment analysis such as the IPC AMN struggled to conduct a full analysis for all areas of concern, in the absence of anthropometric data. As a result, advisors within donor and other organisations were unable to say with any confidence what the nutrition situation was or to *“advocate for nutrition as decisions on resource allocation were being made”*. Stakeholders highlighted that before and after the peaks of the pandemic, resource and access issues created challenges to being able to fully represent the nutritional needs of all parts of an FCS. International guidance (IPC and GNC) has evolved to deal with such access constraints with an increasing number of options to increase coverage of anthropometric assessments, but feedback suggests that more needs to be done (see Section 5).

⁷ UNISE is a nutrition focussed dashboard designed to monitor implementation of Ethiopia’s National Nutrition Plan -11

⁸ The term ‘Forgotten Emergencies’ is often used to indicate emergencies which have slipped off the radar of international stakeholders. It is often implied that these emergencies become ‘forgotten’ as they have less international strategic importance or because they have been ongoing for many years and displaced in the media and international for a by more current high-profile crisis.

Respondents reported that the considerable efforts invested in improving the standardisation, quality and capacity to conduct SMART surveys have produced remarkable results with SMART surveys becoming a trusted and valued source of data and analysis for nutrition needs. However, they reported that *“nutritionists tend towards the relative comfort of quantitative outcome-based data and statistics”* at the expense of qualitative data and data on determinants of nutrition status that could be used to plan and implement nutrition activities in addition to those aimed at addressing wasting outcomes. The users of nutrition analysis pointed out that the volatility of FCS contexts and the difficult data environment means that all estimates of nutrition need are bound to be approximate and are quickly out of date. Interviewees stated that they would be willing to accept the use of lower quality data for needs assessment in exchange for a fuller analysis of nutrition needs, particularly in terms of having a wider geographic coverage and more dimensions of nutrition need as opposed to a concentration on the needs for CMAM services. Respondents noted that, *“We need to lower the bar for outcome data”* and *“We need a methodology that the nutrition community can rally around to use other data and to be clear this is not perfect data but ‘good enough data’”*.

Amongst a variety of suggested solutions to the issues of a more holistic representation of nutrition needs and using good enough data for the analysis, stakeholders emphasised the need to ensure that determinants of nutrition status including health status, access and utilisation of basic services, women’s agency and food security, time for child feeding and caring and nutrition related issues of social capital are given attention in the assessment and analysis of needs. Existing Alliance and IPC guidance advocate for the utilisation of data on the determinants of nutritional status. However, there is currently *“no credible or accepted internationally recognised methodology to underpin this guidance on the use of data from the causes of malnutrition”* or a clear analytical framework which sets out how this data should be analysed in any given context. Not everyone agrees with this direction of travel with some interviewees strongly of the view that it will not be technically or methodologically feasible to link determinants data to nutrition outcomes for needs assessment or indeed make decisions about the scale and targeting of nutrition activities based on determinants data alone. According to one interviewee, *‘nutritionists have been struggling with contributory factor analysis for year’s’*. Determinant data analysis is further explored in Section 5.

During the interviews it was notable that most key informants highlighted the needs assessment element of NIS and that only a few highlighted the limited availability, quality or use of activity monitoring data in NIS both to inform needs analysis, to monitor effectiveness of response and to be accountable for the activities.

The tendency towards the ‘food security first’ paradigm was raised in the interviews as an area of concern. Stakeholders reported that there is a strong tendency to assume that where food insecurity is high, high rates of malnutrition will follow i.e., wasting as a trailing indicator, for example, *“There are many situations where IPC Food Security analyses show the situation to be dire but wasting are only 8-12%. Donors will say there is something wrong with the nutrition data where this occurs”*. This paradigm has been an issue over many years and arises from the lack of understanding that the relationship between food security and nutrition is complex, non-linear and mediated by other issues such as health status. An example used several times by the interviewees was the possible famine situation in Madagascar in 2021 where claims of famine from a food security perspective were made but not substantiated by NIS data. Several stakeholders reported that FSIS seem to be more credible when compared to NIS. Where conflicting evidence arises, stakeholders felt that more attention is afforded to the FSIS analysis and raised the concern that the NIS community needs to do a much better job at overcoming the food security first view of malnutrition and explore *“How we deal with the lack of correlation between food security and nutrition outcomes”*. These observations are discussed below related to the analytical and communication capacity of NIS in FCS.

Challenges to effectively communicating analysis

Stakeholders representing donor agencies highlighted the difficulty of leveraging and advocating for action on nutrition needs when the analysis and communication capacity of NIS (FCS) is either weak, delayed or contested with the risk of *'nutrition being invisible'* when contrasted with other key sectors. The pandemic has raised a critical issue for the nutrition sector in that the lack of SMART surveys led to situations where it was not possible to describe the nutrition situation and claims of *'we don't know'* are viewed as an *'unacceptable default'* by many of the influential decision makers interviewed. *"Currently NIS gets away with saying 'we don't know'. It also suffers significant problems of timeliness. The idea that we cannot say what the nutrition situation is until a SMART survey is done is unacceptable"*.

Concerns were raised in the interviews that the *"NI ecosystem has allowed nutrition messaging to be subservient to data"*. Furthermore, at the global level, the *"nutrition story is diminished"*, it is not powerful enough to influence and *"the sector is filled with scientists and highly technical people and disagreement filters upwards and affects decision makers who sense a lack of confidence in the information"*.

A recurring observation from those interviewed is that the FS sector can describe and communicate a given situation in a clearer and more unified way than the nutrition sector, even though the data and tools are no more advanced or rigorous than those available to the nutrition community and their access to populations no less challenging in complex emergencies. Respondents noted, for example, *"Whilst FS sector had clarity and consensus on needs via the VAM approach, nutrition had fragmented thinking and time is wasted as individual agencies go collecting their own data...FS doesn't have any better tools or access but outperforms nutrition."*

Furthermore, the non-technical way VAM information is communicated through regular in-depth bulletins and infographics widens the level of understanding of non-technical people. In contrast, one key informant described how *"we need more than this (from nutrition) and are a bit fed up with being 'dumped' with a lot of 'nutrition-related' data and expecting them to work out what it means"*.

Potential approaches to addressing analytical and communication challenges

We heard from many key informants that they would like to see NIS get to the same place in terms of influencing that FSIS has occupied for many years. FS needs assessment and activity monitoring was seen as being regular, predictable and credible and whilst it was generally recognised that FSIS have their own inherent weaknesses, key differences between FSIS and NIS were the level of consensus and unified voice, significantly more investment in analytical capacity at all levels, how assessment and analysis is communicated to influence action and, the level of confidence donors and other decision makers have in the information. The *"FSIS ecosystem is a well-oiled machine"*. It has a strong understanding of data weaknesses, and what *'donors' and other senior decision maker can live with"* as well as a common understanding that stakeholders can accept the risks inherent in flawed data and the results.

Challenges to advance the Localisation Agenda

Interviewees highlighted that *"NIS lacks national voices"* and *"there needs to be more bottom-up approaches which are less dependent on INGOs who's role in supporting or implementing NIS is often ad hoc and not sustainable"*. Some key informants perceive a weakness in *"the disconnect between the field and the surveys which are mainly conducted and analysed through international support and processes whereas local actors will understand the context and be better able to interpret results taking into account seasonality and local factors"*. The advantage of greater local engagement is that *"INGO survey implementers may lack context understanding for GAM results"*, hence the Alliance is pushing for more local NGOs to do SMART surveys as they believe that *"this is left to too many external actors"*. Interviewees reported that there are good examples of jointly undertaken surveys such as the recent IPC in Yemen. In the Sahel, national SMART surveys led by the Government have become a standard annual nutrition needs assessment tool.

There has also been progress within the Cluster IM function, the IPC and in international agencies to ensure local actors take the lead in data collection, collation and analysis, though stakeholders acknowledged there is much more work to do. Key informants reported that the IPC has made significant efforts to establish the leadership, ownership and inclusion of national and local actors in the data collection, collation and analytical phases of the IPC. However, in many countries there remain steps to be taken to more fully integrate the IPC process into national planning and implementation systems for nutrition. The Cadre Harmonise (CH) in West and Central Africa has many lessons learnt that could guide these next steps for the IPC.

Experience in Ethiopia and South Sudan highlights the need to acknowledge that there is a tension between government systems strengthening and the humanitarian Responsibility to Protect⁹. Swift changes of regime or governments becoming parties to conflict are inherent risks of FCS. Nutrition and mortality data are always political and control of the structures and processes of the information system, particularly the analytical and communications steps, is part of the political economy in all FCS. Consequently, the strategic vision for strengthening the nexus of humanitarian and development objectives for NIS (FCS) needs to acknowledge the highly political nature of nutrition analysis and ensure that there are clear and flexible protocols for issues such as data sharing, access for data collection, joint data analysis and communication. Recent examples from Yemen and South Sudan are providing lessons for further developing these protocols.

Globally there appears to be a ground swell of understanding and opinion that the responsibilities and accountability for the overall effectiveness of NIS (FCS) are not sufficiently clear or demarcated and that this is hindering progress. For instance, the recommendation at the G7 conference to establish a new global food security and nutrition monitoring group to address data gaps and ensure more real time data, reflects this awareness and the appetite for strengthening NIS governance. At the recent Nutrition for Growth (N4G) Summit, considerable attention was given to FCS and the need for policies and action plans to be risk-informed and anticipatory of shocks, building in crisis modifiers, early warning and early action mechanisms to prevent a situation deteriorating. The Summit also called for more and better data to inform nutrition responses as well as financing that breaks out of the restrictions of annual budgeting. Finally, as reflected in the 2021 Lancet Nutrition Series, more and better data requires additional resources as well as being included in costed national plans.

The message was also loud and clear from the interviews regarding the need to interpret nutrition situations using different data drawn from predictive modelling, surveillance, programme coverage, surveys, programme, determinants data (including screening and routine nutrition activity data) to help nutrition needs assessment, activity monitoring and the interpretation of nutrition data in dynamic situations that typify FCS. As relayed by one key informant *“the exactitude around SMART surveys can appear crazy”* when other determinants data and the dynamic nature inherent to FCS are not being equally considered. There is a perception that GAM prevalence data has taken too much of a prominent role in triggering a response such as the nutrition related HRP allocations.

It is clear from the interviews that recent experiences from dealing with the COVID-19 pandemic, current and future risks from climate change, conflict, population displacement etc., have re-focused attention on the adequacy and functionality of NIS and that there is a strong appetite for change. All stakeholders interviewed would like to see progress and consensus around a strategic vision of the

⁹ The Responsibility to Protect populations from genocide, war crimes, crimes against humanity and ethnic cleansing has emerged as an important global principle since the adoption of the UN World Summit Outcome Document in 2005. Pillar 1: Every state has the Responsibility to Protect its populations from four mass atrocity crimes: genocide, war crimes, crimes against humanity and ethnic cleansing. Pillar 2: The wider international community has the responsibility to encourage and assist individual states in meeting that responsibility. Pillar 3: If a state is manifestly failing to protect its populations, the international community must be prepared to take appropriate collective action, in a timely and decisive manner and in accordance with the UN Charter.

purposes of NIS which enables stronger governance and leadership, analytical capacities and smarter dissemination and communication that results in action. In Section 3 therefore, this paper explores the purposes of NIS (FCS) as a starting point to developing a more strategic vision for NIS. It also seeks to address the perspective that there is an imbalance between the investment of resources in needs assessment and quantitative anthropometric data as opposed to investment in the use of nutrition data for activity monitoring, downwards accountability, qualitative data and data on determinants of nutrition status.

Section 4 of this paper recognises that current NIS are complex ecosystems of partners, sectors, tools, and platforms operating across scales from local and national to the global level and therefore a strategic vision, strategy and governance structure will need to use an ecosystem view of NIS (FCS). Nutrition is intersectoral and interdisciplinary and as a result NIS need to forge stronger links with other sectors with greater clarity on how data and analysis is shared and used across sectoral information system boundaries. As outlined in Section 5, to maximise the utility of the NIS data cycle, we need to attend to each stage of the cycle and recognise the interconnectedness of the key six stages and how they can serve to strengthen the delivery of actions that will support the nutrition needs of those living in FCS.

Summary Points

- The multitude of actors involved in the NI ecosystem have made considerable progress in strengthening NIS despite lacking clear governance, leadership, financing arrangements and clarity on a localisation strategy.
- The NI ecosystem lacks a coherent and unified strategic vision with confident and inclusive leadership for taking this vision forward.
- The lack of clarity on leadership and vision determines that progress on improving NIS structures and processes is constrained by analytical weaknesses and disagreements while decision-makers are often presented with inadequate evidence and analysis to make time-sensitive decisions on responding to needs, improving nutrition related activities and for NIS to be more accountable.
- The level of international investments in NIS are unknown. Without substantial investment increases in FCS contexts, a strengthened NI ecosystem capable of meeting current and future challenges will not be achieved.
- As a result of lack of clarity on vision and leadership but also because of substantial under resourcing of NIS, analytical capacity across the ecosystem has been forced to concentrate on an ad hoc approach to improving structures at the cost of a more holistic or ecosystem approach to systems strengthening. NIS actors find difficulty in the analysis of needs based on determinants data or to analyse monitoring data to ensure improvements in the efficiency or effectiveness of these activities.
- Strengthening routine national data collection, collation and analytical capabilities and resources is central to the NI ecosystem vision whilst continuing to mitigate the risks in contexts where the state is party to conflict and is denying people's rights to nutrition is paramount.
- The food security system offers a credible model for where NIS needs to be in terms of more coherent and strategic vision and strategy, analytical capacities and capabilities, and communication and advocacy for nutrition.
- In FCS the nexus is the reality. NIS structures, purposes and processes are increasingly converging. A strategic vision needs to ensure that this convergence accelerates and that local actors are increasingly included in a meaningful way at all levels of the NI ecosystem.

Section Three: NIS purposes and interconnections

In order to define a strategic system-wide vision for NIS (FCS), a need highlighted above in Section 2, the structures to which the vision applies need to be mapped, the purposes of the NI ecosystem need to be clearly defined and agreed and the priority areas for strengthening the processes of the system need to be identified. A clear vision of the structures, purposes, and processes of an NI ecosystem is also needed to adequately define a transparent and inclusive governance structure, that steers the vision for the NI ecosystem, guides strategic system-wide decision making, ensures accountability, designs ecosystem financing plans, and supports increasing leadership and ownership by local and national actors.

What is a NI ecosystem?

A system or an ecosystem is defined by its boundaries, and in this paper, the focus is on the NI ecosystem in FCS. An ecosystem is also defined by its structures, purposes, and processes which stretch from local to global scales and involve networks of actors, platforms, sectors, and processes across each of these scales.

The NI ecosystem in FCS usually operates within highly complex environments and therefore, a strategic vision needs to take this into account. In FCS, nutrition status and the determinants of nutrition status constantly change, are inherently volatile, and interact in non-linear ways. NIS (FCS) need to be resilient, shock responsive and able to measure, analyse and use analysis in challenging and changing environments where complexities are accentuated by institutional fragility and the negative impacts of conflict on all the building blocks of an information system.

This diagnostic paper suggests that the current NI ecosystem has evolved through a variety of initiatives to develop tools, processes or structures initiated for institutional purposes and/or emerging priorities. To take a more system-wide and strategic approach, NIS decision-makers need to agree on a clear definition of the overall purposes of the ecosystem a starting place is suggested below.

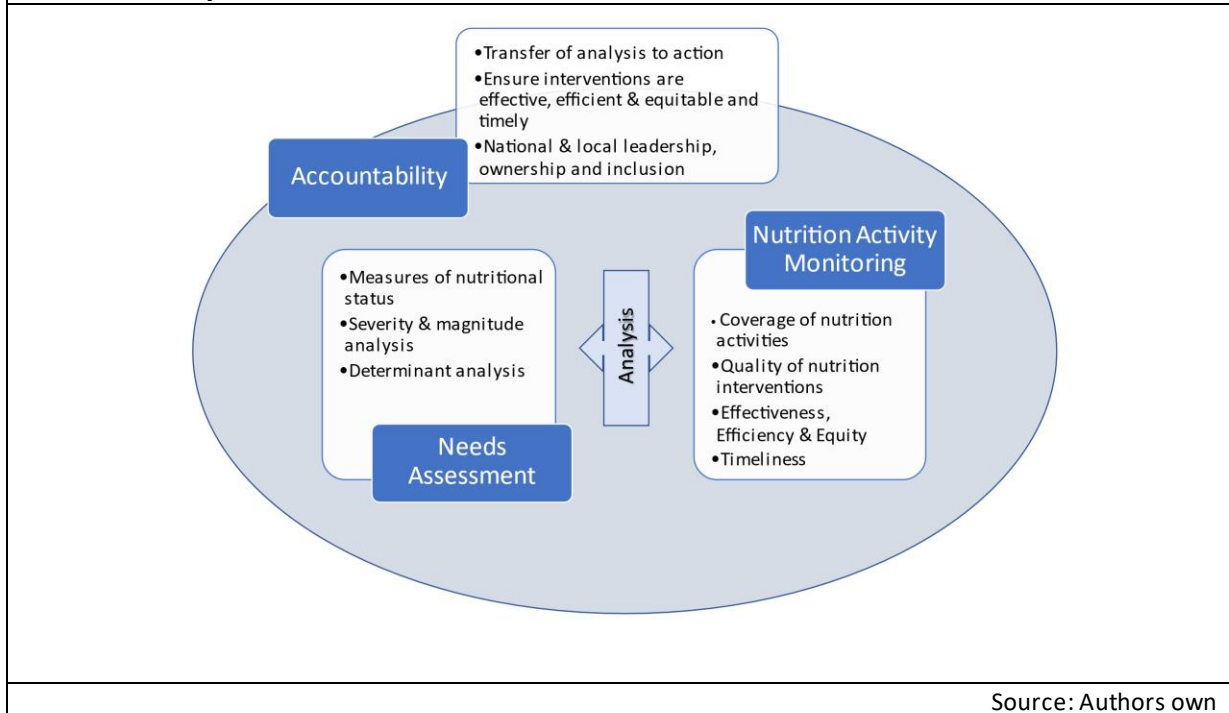
The overall purpose of NIS (FCS) is to provide analysis that is used to improve nutrition-related actions by guiding FCS wide responses that mitigate and prevent the negative effects fragility and conflict can have on nutrition whilst also promoting progress towards good nutrition for all. Specifically, this means NIS need to inform nutrition stakeholders to take appropriate and timely action in a more effective, efficient, equitable, timely and accountable manner.

This paper suggests using three interconnected NIS (FCS) purposes to help review the current system and as a starting point for the development of the future strategic vision:

1. Diagnostic -e.g., Needs Assessment and Situation Analysis
2. Evaluative – e.g., Nutrition Activity Monitoring
3. Accountability

Figure 1 provides an overview of these interconnected purposes and how, taken together, they ensure accountability for efforts addressing current and future population nutritional needs, as well as the status of interventions and activities to address these needs.

Figure 1: Relationship between Needs Assessments, Nutrition Activity Monitoring and Accountability



Evaluating the quality and coverage of nutrition activities not only facilitates decisions to be made about improving these activities but also contributes to the analysis of population nutritional needs. Duty bearers are accountable to advocate for actions to address population needs and are accountable to ensure that the actions taken are appropriate, effective, efficient, equitable and timely. NIS are accountable to ensure that their analysis influences actions taken to address nutritional needs. NIS utilise a variety of communication and advocacy approaches to aid the transfer of analysis to actions that address needs, to improve actions and to be accountable to the rights holders (i.e., those affected).

Diagnostic - Needs assessment and situation analysis

The objective of needs assessment is to utilise evidence and undertake analysis in order to influence and plan actions to meet people’s nutritional needs. Currently the scale of needs is typically represented by using measures of nutrition status¹⁰, for example, wasting, stunting, or micronutrient deficiency prevalence. The severity, magnitude, and distribution by geography, population group, age or by category e.g., marginalised, are used to communicate, advocate and plan for action.

Severity and magnitude analysis is usually used to aid geographical targeting of interventions and activities. A needs assessment also collects and analyses data on the determinants¹¹ of nutrition status envisioned in the UNICEF Nutrition Conceptual Framework at direct, underlying and basic levels (see Figure 5). Determinant’s analysis can help to understand current nutrition status prevalence and to

¹⁰ In this case nutritional status is a measure of the outcome of the nutrition system. Determinants drive changes in the nutrition outcome.

¹¹ Over time the determinants of malnutrition drive changes in other determinants. For example, improved human resources in the health system drives improvements in access to health and nutrition services which in turn drives improvements in nutrition status outcomes and reductions in mortality. The difference between determinants and drivers is that determinants are used as nouns in this description i.e., the parts of the conceptual framework that describes the causes/ elements that influence, positively or negatively, nutritional status. In contrast, drivers is used as verbs in this context i.e. the mechanisms that lead to malnutrition. For example, IYCF determines nutritional status and can drive nutritional status in several directions.

project or forecast future nutritional needs. Challenges in collecting, collating, and using data on nutritional status and determinants of nutrition status are discussed further below (section 5).

The main examples of elements of NIS with the principal objective of diagnostic needs assessments are the IPC AMN, SMART surveys, Demographic and Health Surveys (DHS), and Multi-Indicator Cluster Surveys (MICS). DHS and MICS tend to inform national nutrition policies and strategies. The IPC AMN and SMART surveys are carried out more frequently than the DHS and MICS and therefore, are the main needs assessment and situation analysis tools in many FCS. The IPC AMN also produces projections of future nutritional needs. Early warning systems are a special type of needs assessment that forecast future nutritional needs although examples of early warning to specifically forecast emergency nutrition needs are uncommon¹².

Evaluative - nutrition activity monitoring

Nutrition activity monitoring aims to provide evidence and analysis to improve nutrition actions being taken as a result of the findings of needs assessment and to ensure accountability for those actions. Examples of NIS tools that have the principal objective of evaluating or monitoring nutrition activities are District Health Information Software (DHIS2), Nutrition Cluster Information Management and individual agency monitoring systems. Nutrition activity monitoring analyses the coverage and quality of nutrition actions (such as maternal, infant and young child nutrition (MIYCN) and community-based management of acute malnutrition (CMAM)) and utilises this analysis to improve the effectiveness, efficiency, equity, and timeliness of nutrition actions. Data on the determinants of nutrition status from other sectors can also be analysed to influence the improvement of nutrition activities. This diagnosis has identified challenges in nutrition activity monitoring which limit the ability to improve nutrition interventions and are discussed in more detail below.

Linked purposes

Nutrition activities which seek to address poor nutritional status through MIYCN activities, WASH and food security interventions, health services, CMAM, and micronutrient supplementation can all affect the current prevalence of malnutrition and, therefore, this activity monitoring analysis should also be included in the analysis of the nutritional situation and estimation of needs. An example of this point from the Food Security Sector is the analysis of the contribution of Humanitarian Food Aid (HFA) to the current and future AFI estimations. Analysis of data from other sectors on the determinants of nutritional status is also key for nutritional needs assessment and the challenges in the use of determinants data in general and nutrition activity monitoring data specifically are discussed in detail below (section 5).

In other words, needs assessment, and nutrition activity monitoring are closely linked in that the former should consider the past effectiveness of nutrition actions in improving the determinants of malnutrition¹³. In many FCS, needs assessments analyses are used to prioritise actions deemed necessary to improve the effectiveness of these services, for instance, the scale-up of CMAM services as a result of projected increases in the incidence of wasting. Consequently, resources are invested in the services and activity monitoring produces analysis to constantly improve these services. If the programme analysis shows that the services are improving (in both scale and quality) then this analysis needs to be considered in the subsequent needs assessment, i.e., projected increases in wasting as a result of a drought will be mitigated by a highly efficient CMAM programme or an effective MIYCN activity can be expected to positively influence current and projected estimates of nutritional needs.

¹² Early warning uses a probabilistic approach to looking into the future. The IPC Acute Malnutrition (AMN) is one example of a system that projects (less probabilistic) some nutritional needs. IPC AMN projections start from the current case and project the future severity and magnitude of needs.

¹³ The UNICEF conceptual framework suggests that the effectiveness of basic services such as health, nutrition, and water and sanitation are the key underlying determinants of nutritional status. The effectiveness of household level nutrition related services such as MIYCN will also influence the Household Care practices determinant.

These linkages also strengthen accountability for taking effective action to respond to the measured needs.

The diagnosis has noted challenges in collecting and collating determinant data from nutrition and other sectors to be used in needs assessment analysis. Of particular concern are issues related to the completeness and appropriateness of data on the coverage and quality of nutrition services and nutrition related activities at household and community level, in the needs analysis as well as the coverage and quality of activities in other sectors which are likely to impact nutrition.

Accountability

All nutrition stakeholders are duty bearers, accountable to rights holders for the actions they take to address the nutritional needs of the population. Governments are accountable to their people, as are humanitarian and development actors (referred to as downwards accountability) who are also accountable to governments and donors (referred to as upwards accountability). The duty bearers: governments, donors and agencies use NIS needs assessment to make decisions about the scale and severity of the needs of the populations of FCS and the actions that need to be taken to address these needs. Nutrition activity monitoring analyses how well these actions are performing. The better the nutrition actions, the bigger the impact they will have on mitigating the nutritional needs of populations. Therefore, NIS actors are accountable to ensure that NIS analysis is fit for the purposes described above and effectively influences actions to address nutritional needs.

Duty Bearers use the reporting of needs analysis and actions to be accountable to the rights holders. For example, governments, agencies and donors often use IPC or DHS and MICS type needs analysis as an accountability scorecard so that improved nutritional status might be attributed to effective nutrition actions. Duty bearers can also be more accountable by ensuring the participation, leadership and inclusion of rights holders in the analytical and decision-making process. The IPC and nutrition cluster does this by including local government, civil society, and others in the data collection and analysis processes, although this diagnostic finds that a strategic vision for accountability, especially downwards accountability, appears to be missing. NIS analysts are also accountable for their analysis being transferred to action. An analytical process that does not transfer analysis into action is not achieving its purposes. Challenges to ensuring accountability for nutrition, particularly downwards accountability and NIS accountability for effectively influencing nutrition action, are discussed below.

Communicating with decision-makers

In order to translate analysis into action, those responsible for communicating NIS data and analysis should know what messages they are trying to communicate and the target audience. In FCS, a NIS needs to influence action across the government and the humanitarian and development nexus and at all scales from local to global. In these contexts, a NIS audience is comprised of decision-makers within a wide variety of institutions and at different levels including national and local government, donors, international and local agencies, and community leaders amongst others. Each of these stakeholders understands and uses information and analysis in different ways and therefore, any analysis needs to be communicated in a wide variety of formats, mediums, and channels. To maximise its influence on decisions about the best actions to address nutrition needs, a NIS must have a clear communication and advocacy plan. Where possible, efforts should be made to ensure participation of the audience in designing the communication plan. As pointed out by NIS stakeholders a good communication to influence action is a capacity of NIS that receives limited attention and less resources than it warrants. Weak communications capacity means that investment in data collection, collation and analysis is much less effective in achieving its goals to address nutrition needs. Through the integrated use of needs assessment, activity monitoring and accountability, a NIS is accountable to ensure that it effectively communicates analysis to drive better and accountable action for nutrition.

Developing a shared clarity of the purpose for NIS (FCS) is the starting point for a strategic adaptation of the system and to ensure the three purposes are fulfilled. Clarity of purpose also requires recognition that there remain gaps in the strategic vision for NIS especially in strengthening the linkages between the three purposes which themselves are often not explicit or established¹⁴. To realise a strategic vision a transparent and inclusive governance system is required. A strategic vision also enables the development of financing plans and ensures greater accountability of NIS to stakeholders. These issues are discussed further in Section 6 below.

Summary Points

- There is considerable debate about the purposes of a NIS (FCS). A crucial first step in developing a strategic vision for NIS (FCS) will be for NIS stakeholders to agree on a common understanding of the purposes of the NIS (FCS).
- A strategic vision for NIS (FCS) should clearly define the purposes of the NI ecosystem. It is proposed that using a framework of Diagnosis (Needs Assessment and Situation Analysis) and Evaluation (Nutrition Activity Monitoring) and Accountability to describe the purposes of the ecosystem will help to structure the strategic vision.
- Taking a NI ecosystem perspective recognises the interconnectedness of Needs Assessment and Situation Analysis, Nutrition Activity Monitoring and Accountability as critical to informing decision making on what actions and resources are needed to protect nutrition status and to be accountable to the rights holders. These three NIS functions are inter-connected and if operating well, provide highly connected information and iterative analysis on nutrition status and its determinants to inform actions for the most vulnerable global populations.
- NI ecosystem actors are accountable to ensure that their analysis influences actions to effectively address nutrition needs.
- The challenging FCS environment means that the strategic vision must ensure that NIS are resilient and shock responsive to inform appropriate and timely actions despite the challenging environment.
- A communication and advocacy plan is vital to ensure that NIS (FCS) are accountable and that analysis translates into decisions on actions to be taken to improve nutrition in FCS.

Section Four: The Ecosystem structures and elements

A strategic vision for a NI ecosystem needs to consider which structures are involved in achieving the purposes of the ecosystem. As outlined above, the NI ecosystem is made up of multiple systems and structures using a variety of indicators, data collection, collation and analytical tools and platforms, and communication approaches. In addition to their primary functions, they also have systems strengthening functions including capacity and coordination strengthening and technical assistance.

Elements in the NI ecosystem

Annex 3 describes some of the more important elements of the NI ecosystem for FCS organised under the headings: Collation and Analysis Systems, Primary Data Collection Tools, and Technical Assistance and Guidance as they relate to the main NIS working groups. NIS elements listed in the annex include the IPC AMN, CH, The Nutrition Cluster, Country Nutrition Information Systems, DHS, MICS, SMART, DHIS2, Government, UN and NGO monitoring systems, the NIS GTWG and the IPCAMN TWG. The annex demonstrates the variety of stated purposes of these NIS elements, the differences in scale and

¹⁴An example of this is when the nutrition activity monitoring system is implemented by the nutrition cluster which collects information on the underlying determinants of undernutrition status. Currently the cluster analyses this data mostly with an idea of upwards accountability rather than to inform needs assessment or activity monitoring.

interlinkages between each element. Many of these elements are crosscutting adding to the complexity of understanding the NI ecosystem.

Complexities in the ecosystem

Figure 2 below provides an incomplete and merely illustrative overview of the complex and layered process of converting data into actions that improve nutrition. As can be seen, governance and financing mechanisms are an important component of the NI ecosystem while localisation (defined as strengthening the leadership, inclusion and participation of 'local' actors in nutrition information systems) is a cross-cutting theme.

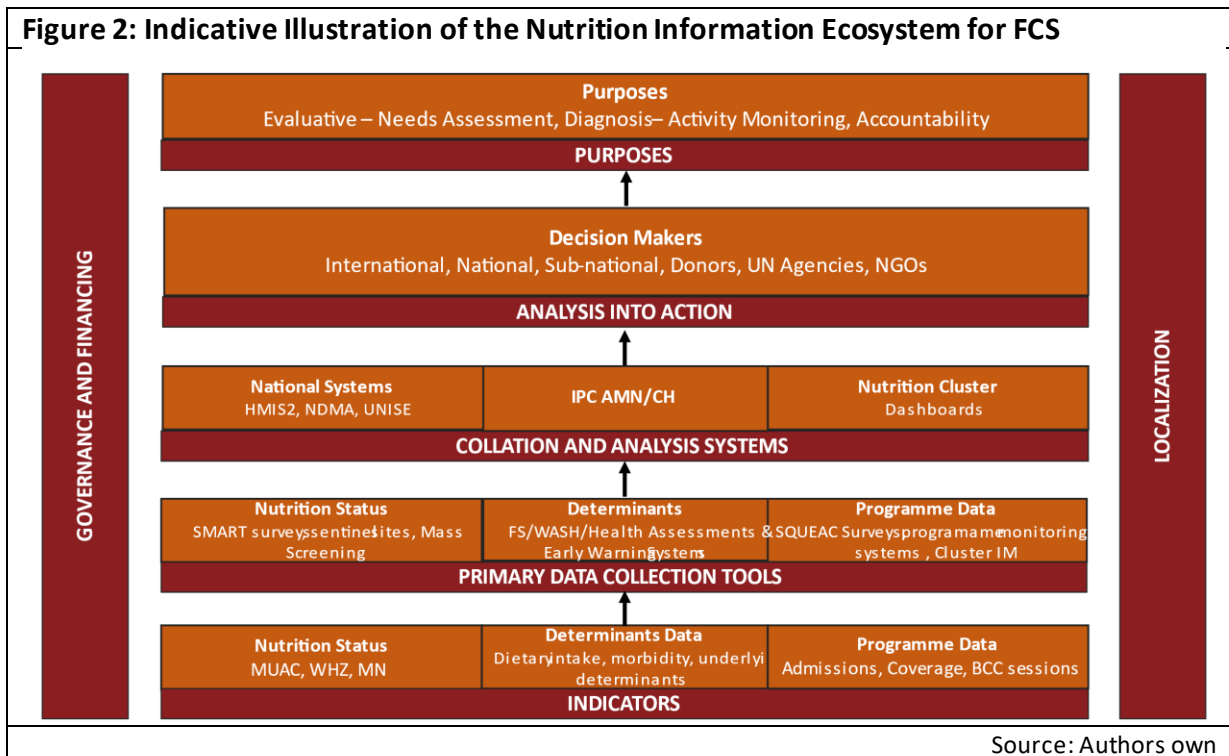
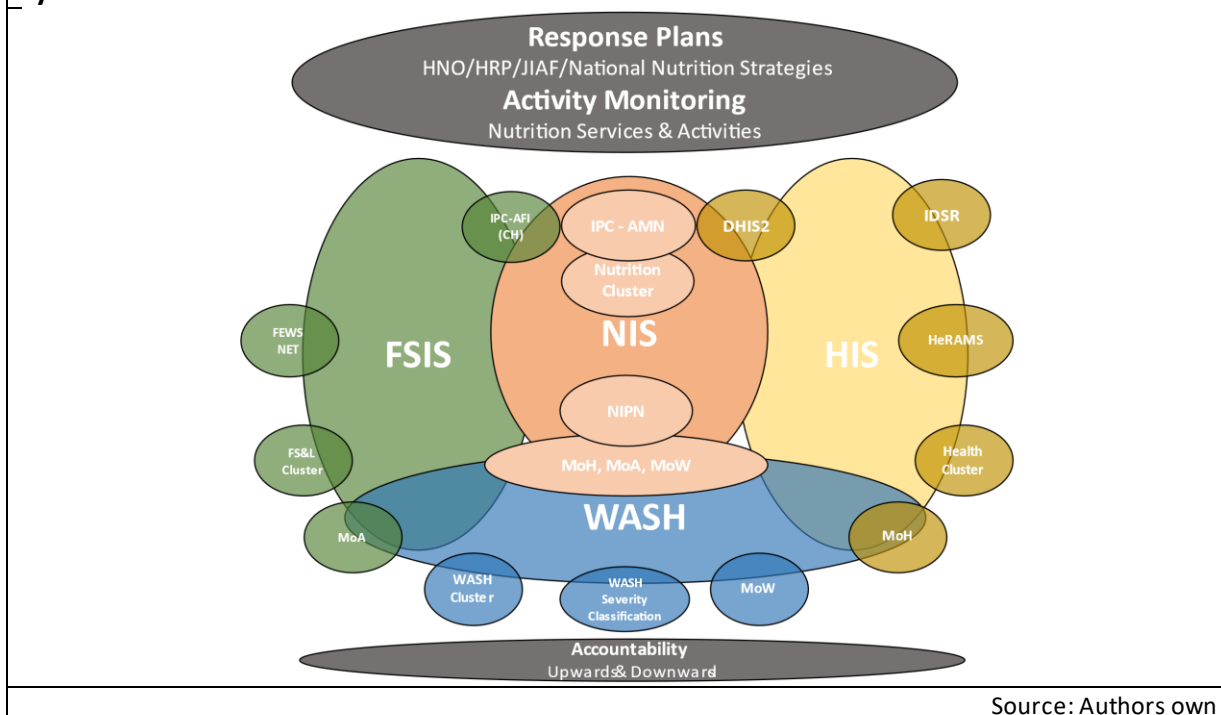


Figure 2 also highlights the complexity of the ecosystem structures, their linkages and roles all of which aim to achieve the three linked purposes of the NI ecosystem as set out in Figure 1. Because the current structure of the ecosystem has emerged over time with individual, institutional and contextual factors driving its evolution, this diagnosis has highlighted how inefficiencies have emerged in the way the ecosystem is structured to achieve its purposes.

The structure is also made more complex by the multi-sectoral nature of nutrition and as outlined above, a strategic vision for NIS (FCS) needs to consider this by incorporating data and analysis from the information systems of other sectors (and disciplines e.g., gender or protection) in order to better understand the determinants of nutrition status. Figure 3 below illustrates some elements of the linked and overlapping systems of nutrition-related information. These linkages are particularly concerned with exchanging and using data and analysis on the determinants of nutritional status including monitoring of nutrition actions. Other sectoral information systems also utilise NIS data and analysis. For example, the FS sector uses nutrition status data in its analysis of food security needs. Linking nutrition information to other related sector information systems takes place within the IPC which has recently embarked on a process of strengthening these linkages. The Nutrition Cluster has also included the strengthening of linkages with other clusters particularly food security, health, and WASH in their new four-year strategic plan but linking sector information systems is not made explicit in the plan. Some globally supported initiatives are also in the process of strengthening linkages between sector

information systems and nutrition information notably the National Information Platforms for Nutrition (NIPN) project and the Scaling up Nutrition (SUN) Movement.

Figure 3: Indicative diagram of links between NI ecosystem and other sector information systems



All these structures play a role in capacity and systems strengthening. Without question, there have been considerable efforts to strengthen NIS in recent years. For example, the new [GNC four-year strategy](#) highlights the frequent lack of data as a major challenge and the need for national NIS strengthening in priority countries with targets set for 2030¹⁵. In shifting their focus to NIS capacity strengthening, the GNC and UNICEF want to see a minimum capacity in place pre-crisis through investment in national NIS which can be ‘scaled up’ during a crisis to provide the information and analysis needed. Guidance on NIS with a section on emergencies, governance and financing has been published by UNICEF and the GNC. The Alliance have also supported initiatives such as the Yemen Risk Monitoring Framework which identifies selected indicators to provide advance warning of potential nutrition deterioration, an initiative which is viewed as a positive example of UN agency collaboration. The most recent IPC Road Map highlights the need to establish a joint and inclusive IPC AMN and IPC AFI Technical Working Group in priority countries and recommends a task force to foster improved coordination between IPC AFI and IPC AMN. According to one interviewee, “*The IPC RoadMap is a manifestation of the realisation of the need to do better and that nutrition has to be at the centre of IPC work*”. Finally, NIPN activities are operational in nine countries focussed on strengthening national NIS of which four are classified as FCS¹⁶. Despite all these efforts, many of these structures and systems strengthening initiatives have arisen in an ad-hoc manner, often with only limited coordination without a clear vision or strategy for NIS (FCS).

¹⁵ The GNC and Alliance (particularly through the NIS Global Thematic Working Group) are also involved in developing a predictive analysis tool using programme data, surveillance data, and other forms of survey data and donors report interest in investing in NIS innovations such as the FCDO’s support for predictive modelling development through the MERIAM project.

¹⁶ These are Burkina Faso, Niger, Ethiopia and Bangladesh.

Summary Points

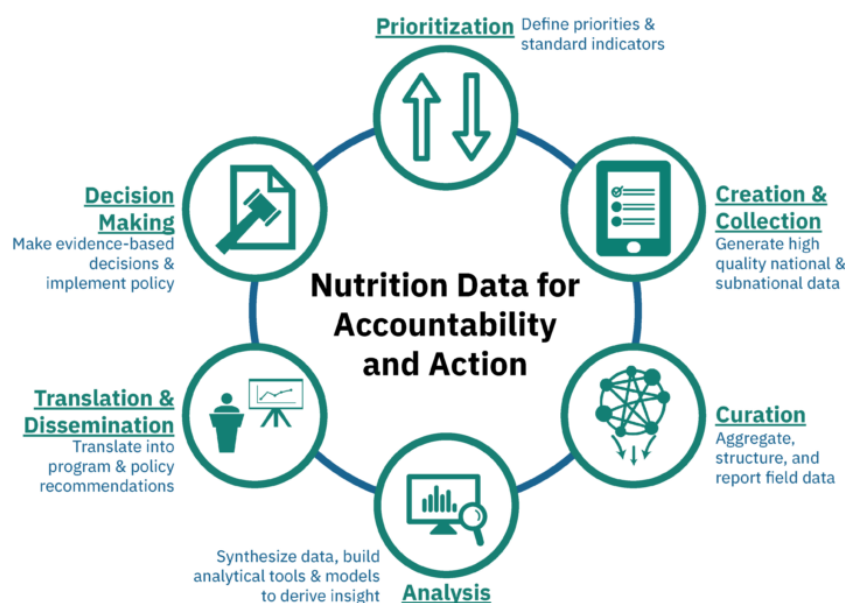
- A strategic vision for NIS (FCS) should understand the structures and roles of the systems that make up the NI ecosystem. It is proposed that a mapping of the structures and their roles in contributing to achieve the 3 purposes of the system is required to construct a strategic and systemic vision for the NI ecosystem in the future.
- The structures developed for NIS have evolved iteratively and often have afforded only limited attention to the linkages within nutrition and with other sectoral information systems yet the intersectoral and interdisciplinary nature of nutrition requires that a strategic vision for NIS gives considerable attention to strengthening the linkages with other sectors and disciplines.
- Employing a NI ecosystem perspective will support an analysis of the different elements and tools of a NIS, their overlapping and linked functions and the extent to which multi-sector information are utilised. This in turn offers significant opportunities to improve the overall effectiveness and efficiency of NIS (FCS).

Section Five: Strengths and weaknesses of the NI ecosystem

In this section, the main strengths and weaknesses of the existing NI ecosystem processes in FCS are described. The identification of gaps and weaknesses, including how NIS processes link together is essential for the development of a strategic vision for the strengthening of the NI ecosystem.

The data cycle model is outlined in Figure 4 and serves as the basis for exploring the strengths and weaknesses. The collection of data and translation of analysis into action forms the basis of assessment, activity monitoring and informs the accountability function of NIS. It is useful to look at the six steps to consider how each function has been strengthened in recent years and where gaps remain.

Figure 4: The NIS data cycle



A global nutrition data ecosystem characterized by strong leadership, consensus on data priorities and capacity to generate, analyze and use data, analytics, and evidence is needed to tackle malnutrition in all its forms and and monitor progress towards SDGs and global nutrition goals.

Source: DataDENT, 2020

Step 1+2: Creation, collection and collation

Currently, NIS (FCS) Needs Assessment functions are relatively strong in the data creation and collection step in general and particularly, in relation to the data that informs estimates of wasting prevalence and subsequent estimates of needs for CMAM services. The IPC AMN and CH¹⁷ severity and magnitude classification is based only on Global Acute Malnutrition (GAM) data. The gold standard source of GAM prevalence is validated SMART survey results based on weight-for-height (WHZ) data, representative at the unit of analysis.

Challenges in creation, collection and collation – Nutrition Status

Achieving full coverage of estimates of nutritional status

Despite considerable work undertaken in recent years to improve the collection of this type of data, achieving full coverage of GAM estimates for an area or country of concern remains an extremely challenging task. Nutritional and Food Security needs analysis in FCS is often organised around the district administrative level and to achieve full coverage requires many surveys (Box 1). Consequently, some countries use targeting strategies: South Sudan, Kenya, and Ethiopia target the areas (district and/or counties) that are expected to be the worst areas in that analysis season and/or areas that have not had a recent survey conducted. Alternatively, several countries conduct SMART surveys to represent larger administrative areas e.g., provinces (Afghanistan), Governorates (Yemen) or Counties (Kenya) than those usually used by food security (i.e., districts). This approach allows nutritionists to have an evidence-based estimate of the severity and magnitude of need, however the drivers of undernutrition are usually significantly different within administrative areas of this size, meaning the nuances of needs estimates at smaller scales and hot spot areas are more easily missed.

Box 1: Country examples of sub-national nutrition surveys

Nutritional and Food Security needs analysis in FCS are often organised around the district administrative level. In many FCS this involves conducting upwards of 100 representative surveys. For example, in Yemen food security analysis is done at the level of around 333 districts, in Ethiopia, the hot spot woreda identification process routinely considers between approximately 350-400 woredas each year (from over 1,000 woredas in the country). On a smaller scale, Kenya includes up to 26 ASAL counties and approximately 110 sub-counties in the long and short rains analysis¹⁸. In none of these contexts is this number of nutrition surveys financially or logistically feasible. Strategies to deal with this complexity, include conducting representative anthropometric surveys at a higher administrative level e.g., at the county level in Kenya. In Northern Nigeria, a survey surveillance system conducts twice a year surveys at sub-governorate level. However, even these strategies face logistical and financial barriers.

Even with these measures, a relatively large number of surveys are conducted each year. For example, Yemen planned to conduct 44 SMART surveys in 2021/2022 (with 39 already completed at the time of writing), in Ethiopia, 25 surveys were conducted in 2019, and in South Sudan in 2018, 51 surveys were conducted. Furthermore, the number of surveys seem to differ largely each year. For example, in Ethiopia, 10 surveys were conducted in 2021, 17 in 2020, 25 in 2019 and 21 in 2018. In South Sudan, 15 surveys were conducted in 2021, 3 surveys in 2020, 16 surveys in 2019 and 51 surveys in 2018. In Yemen, 39 surveys have been conducted to date this year, 0 surveys were conducted in 2020, 11 in 2019 and 17 in 2018.

¹⁷ As well as the Nutrition Cluster where no IPC/ CH exists – in these cases, The Nutrition Cluster follows IPC AMN methodology.

¹⁸ Kenya experiences a bimodal climate pattern. Therefore, two IPC type food security and nutrition assessments are made each year. Named Long and Short Rains assessment.

Security and access concerns are important barriers to obtaining full nutritional status survey coverage in many FCS as well as the resources to cover the cost of surveys, including in ‘forgotten emergency’ contexts. As a result, it is routine for some parts of an affected country or area not to be surveyed. The reasons for gaps in recent and reliable anthropometric GAM data estimates can be grouped into three overlapping categories, namely: inaccessible areas, difficult and variable access and resource limitations. Table 1 below gives examples for each of these, and the current solutions being adopted with Box 3 exploring the examples further.

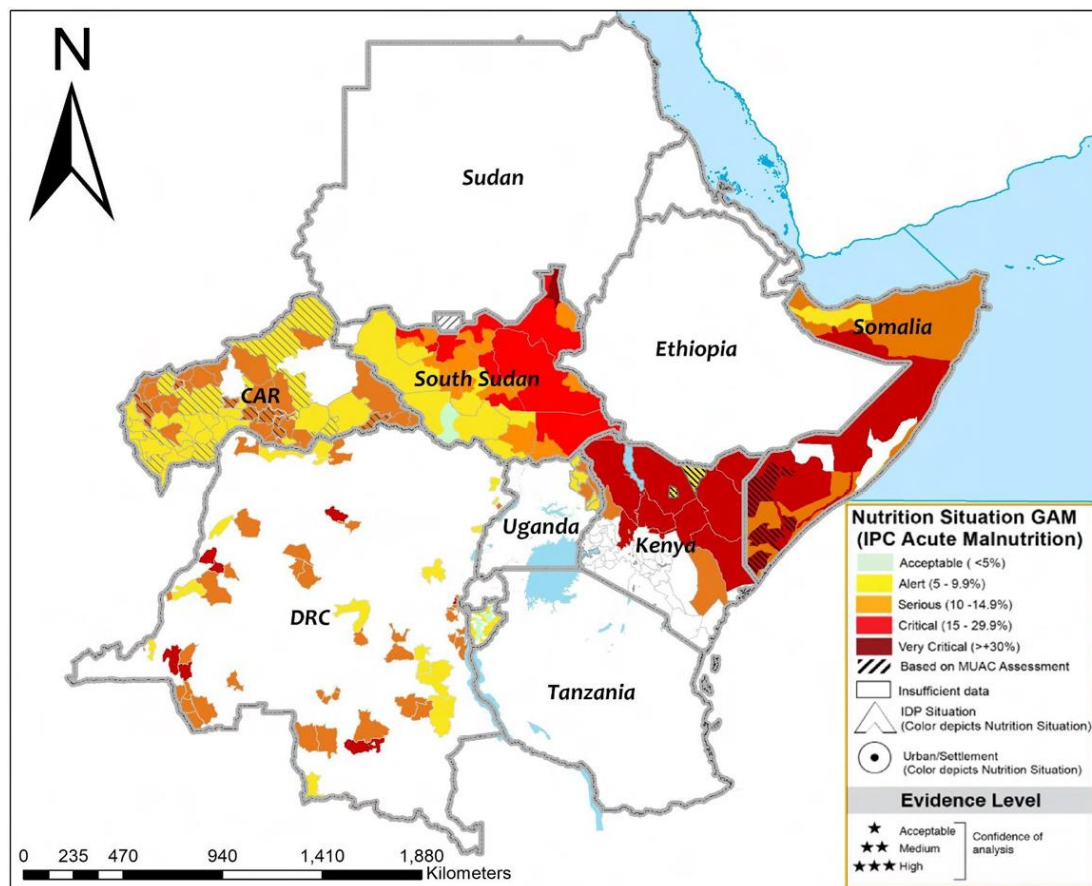
Table 1. Categories of reasons for gaps in anthropometric GAM estimates

Categories of reasons for gaps in surveys.	Description	Examples	Existing Solutions
Inaccessible areas	Very limited international and national access for any emergency activities including collection of data.	N. Nigeria parts of Borno State (Box 3), Somalia, parts of Southwest State and Jubaland, Ethiopia, parts of Tigray.	Monitoring of new IDP arrivals and those crossing front lines.
Difficult and variable access	Often the most conflict-affected areas of a country are held by armed opposition groups.	Conflict-affected parts of Yemen, Many areas of South Sudan (Box 3).	Requires negotiation and/or rapid approaches e.g., helicopter missions, to access and collect anthropometric data.
Resource limitations	Limitations in time, logistics, capacity and funds for surveys	All FCS countries (Box 3 provides examples from Kenya and Nigeria).	Prioritisation of hot spot areas or areas assumed to be changing fast e.g., In Kenya; survey larger administrative areas e.g. at Governorate-level in Yemen; inclusion of anthropometric indicators in food security surveys e.g. in South Sudan.

Areas not surveyed can represent small populations within an administrative area such as a district or large populations living in a group of many districts or several regions of a country (such as the Democratic Republic of Congo or Ethiopia). Map 1 outlines the extent of coverage of IPC AMN surveys in several East African countries (with white areas indicating where surveys did not take place¹⁹).

¹⁹ In many areas of South Sudan nutrition status data is obtained from MUAC measurements in the Food Security and Livelihoods Assessment and is extrapolated across counties to include inaccessible areas.

Map 1. IPC AMN Survey Map – March 2022



Source: IPC, 2022

In conflict-affected areas, these unreachable populations are usually assumed to have the highest risk of poor nutritional status. The COVID-19 pandemic brought even further challenges to conducting surveys. As a result, almost all large-scale needs assessment exercises such as the IPC AMN are conducted with missing recent GAM prevalence estimates with implications for prioritisation and resource mobilisation efforts.

Faced with gaps in the coverage of recent anthropometric prevalence estimates, the IPC, CDC and SMART Initiative continue to expand the methodologies and tools to collect anthropometric data that are acceptable to be used in AMN needs analysis. There is also provision within the IPC AMN to draw evidence from less reliable sources. Ranked in order of reliability (IPC, 2016²⁰) these include GAM by WHZ from sentinel sites; GAM by MUAC from representative surveys; GAM by MUAC from exhaustive screening; GAM by MUAC from sentinel sites; and GAM by MUAC from screening. However, no examples have been found of GAM by MUAC from sentinel sites or from routine screening programmes being used in IPC analysis. During the COVID-19 pandemic, there have been positive developments, including CDC guiding the piloting of rapid MUAC surveys using exhaustive sampling in both Tigray, Northern Ethiopia (although not used in IPC analysis) and more recently, in Myanmar.

²⁰ https://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/docs/IPC-GSU-gFSC_Guidance-2016.pdf

Box 2: Methods and tools to collect anthropometric data in challenging contexts

Inaccessible areas

Nigeria offers a useful example of obtaining information from inaccessible areas by interviewing new arrivals to more accessible/stable areas using mixed methods. Nigeria's Famine Monitoring System includes a process of monthly monitoring of new arrivals from inaccessible areas in Borno, Adamawa, and Yobe States using well-structured questionnaires examining six themes. These include food consumption, livelihood changes and related coping strategies, household consumption and household hunger levels, access to life-saving services and assistance, detection of malnutrition through nutrition screening (MUAC and weight-for-height), mortality-related indicators and changes in any causal factors. Journey durations and patterns of arrivals are also examined. While an important tool for obtaining information from inaccessible areas, it must be noted that it is limited as it only captures data from those who are able to leave such areas, and as such, not all inaccessible areas may be covered. The Famine Monitoring System is housed within the CH Inaccessible Areas Task Force, as a result, it supported decision making during and in-between CH classifications – including classification of inaccessible areas and updates to assumptions used for projections. Further, the system was designed to improve resource allocations and emergency scale up programming between annual needs overviews (i.e., HNO) by providing implementing partners, UN and donors, such as, Food Security sector, FCDO, WFP, UNICEF, National NGO partners and FAO, with the most recent information on influxes of new arrivals from inaccessible areas, including their current status.

Difficult and variable access areas

Areas that have variable or difficult access also pose challenges. Such areas may open for short periods of time through humanitarian aid convoys or, for example, if access has been negotiated with relevant parties during a conflict. In such situations, time is a factor and rapid approaches using purposive selection of sites/ villages rather than random sampling are advised. The IPC has developed guidelines for areas that are [difficult and/or variable to access](#), and advises on a combination of sources of evidence to be used, to the extent possible, including the use of rapid helicopter missions and evidence from distribution points as well as house-to-house methods with prevalence estimates being calculated separately and compared. An example of using the helicopter mission approach was seen in South Sudan in 2015. Access to areas of insecurity were negotiated for a maximum of five hours and aerial surveillance was used in conjunction with ad hoc MUAC screening and purposive key informant interviews.

Resource limited settings

Where surveys face resourcing challenges, including limitations in time, capacity, logistics and/or funding, 'hot spot' areas are sometimes selected or surveys from a larger administrative area are used as described above. For example, in Kenya, 23 out of the 26 ASAL counties are selected for seasonal assessments as these areas are known to be drought prone. For SMART surveys, 10 out of these counties are selected for surveying as these are arid areas and known for their high malnutrition rates. In previous years, more SMART surveys were conducted in other counties, but these have decreased due to a reduction in malnutrition rates in those areas and as a result of limited resources. Instead, Kenya has relied on information from routine programme monitoring data which is well captured in the country as well as information from MUAC sentinel sites as part of the National Drought Management Authority Early Warning/ Early Action monthly bulletins to enable estimates of the acute undernutrition situation for two periodic National/IPC needs analysis (Long and Short Rains assessments). In North-East Nigeria, a series of repeated surveys (typically twice a year) using standardised groupings of 65 accessible Local Government Areas are conducted to provide representative estimates of wasting prevalence and mortality rates to inform the ongoing emergency response. The first round of these surveys was conducted in October- November 2016 and the most recent assessment (9th round) took place in October 2020. The results of the repeated surveys are representative of accessible areas in Borno, Adamawa, and Yobe states.

Despite the considerable efforts made and successes in establishing protocols for using lower reliability anthropometric data, it is highly likely that gaps in GAM data coverage will be a constant feature of NIS in FCS. Key informant interviews (KIIs) have highlighted how a culture of high standards of quality and reliability for nutrition status analysis contributes to difficulties in including less reliable data in needs assessment processes. Therefore, there is a tension between better quality estimates of need and a greater coverage of needs assessment estimates, particularly amongst the most difficult to reach populations, who are often assumed to be the most vulnerable. Guidance is constantly being updated to expand methods and tools but NIS (FCS) needs to build greater tolerance for less reliable data collection to fill inevitable gaps in nutrition status estimates.

A lack of prioritising context-specific metrics and data

Current stunting, low birth weight and micronutrient status data are very often missing and there are regular gaps in data on vulnerable groups such as marginalised people, infants under six months of age, adolescents, the disabled, elderly and populations on the move. There are, however, examples of data collection amongst internally displaced persons (IDPs) and in urban areas. Although this data may not always be relevant, in some cases it may have as much significance as GAM data or data on children aged 6-59 months.

Global and National NIS governance structures do not appear to systematically make decisions on priorities for types of nutrition status collection, a systematic step in the design of NIS needs assessment processes. For example, recent experience in Tigray has suggested that estimation of changes in women's nutritional status (see Box 3) may be of equal or greater importance to the measurement of children under the age of five for the purpose of monitoring the effects of the conflict on nutritional status. Another example is in Yemen where parts of the conflict are concentrated in urban areas. The assumption is that the effects of the conflict on drivers of malnutrition will be particularly concentrated amongst the most vulnerable of these urban populations. In Yemen, at the time of writing, some urban surveys were conducted for this purpose. In a data constrained environment as complex as Tigray and Yemen difficult decisions to prioritise one type of data collection over another may have to be made more frequently and systematically. In some contexts, strategic decisions could also be made to change the frequency of GAM data collection to allow the collection of nutritional status data from other important nutritionally vulnerable groups or different measures of anthropometric or micronutrient status. For example, measuring a large administrative area once every two years and nowcasting in the year with no survey. This would allow limited resources in a complex environment to be used in the 'gap' years to focus on estimating the needs of other priority groups or needs based on other types of nutritional status data.

Box 3: The use of women's nutritional status to inform nutrition analysis

In Tigray, there is significant evidence that women are a highly nutritionally vulnerable group as demonstrated by the significant increases in measured malnutrition of pregnant and lactating women. However, no or very little data is collected on Minimum Dietary Diversity – Women (MDD-W) or qualitative data on women/household coping strategies in households. Therefore, explanations for this nutrition vulnerability are based on conjecture and assumptions. Thus, adaptations to response in order to protect their nutrition status is insufficiently evidenced.

Context-specific timing of nutrition status surveys

In recent years significant efforts in ensuring the quality of GAM status data collection have led to improvements and a resulting increase in the credibility of GAM estimates being used for decision making. However, timeliness remains an issue. Traditionally, the collection of GAM data has been seasonally timed and very often strongly linked to an agriculture or livestock hunger season understanding of fluctuations in GAM. Research has consistently demonstrated that seasons are crucial

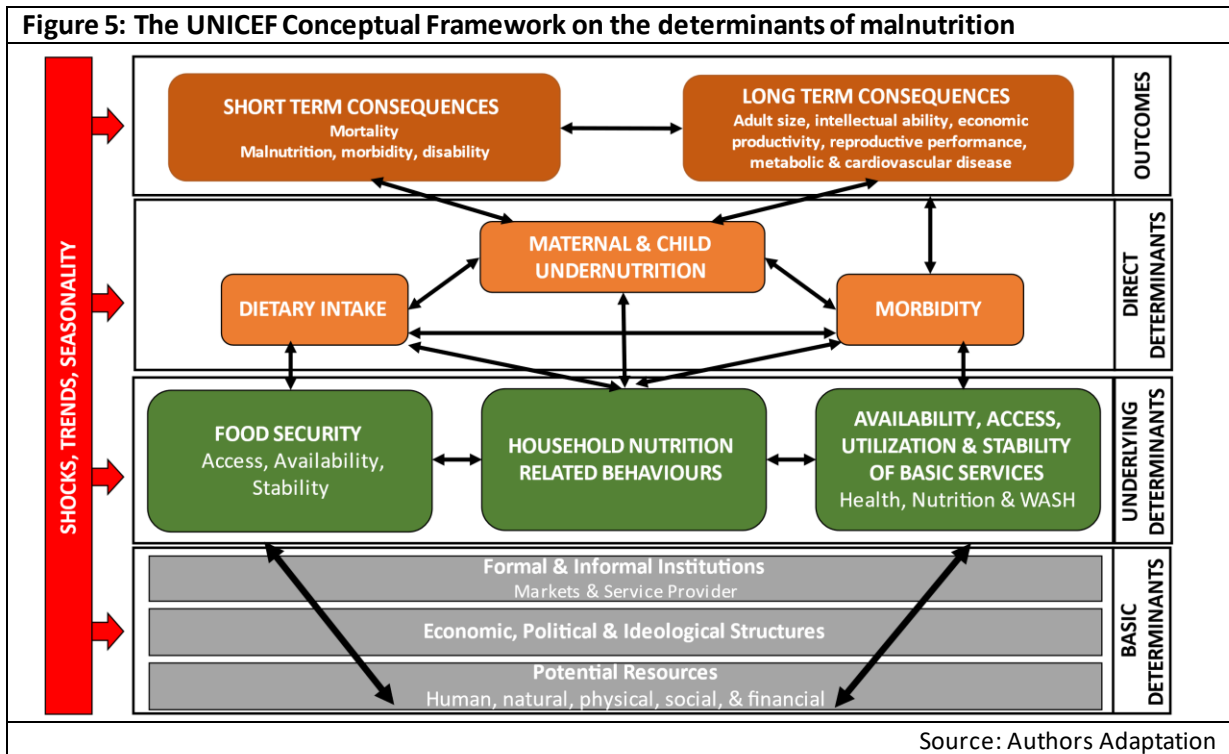
drivers of rural undernutrition patterns. However, recent research has shown that the timing of peaks in undernutrition is influenced by more than just agricultural or pastoral seasonality and is strongly impacted by conflict trends and environmental factors (FAO & Tufts University, 2019). Equally, experience in urban emergencies suggests that the optimum timing for a nutrition survey is not necessarily seasonal. WHO is conducting a study on the relationship between seasonal factors and levels of wasting which could contribute to models for using contributory factor data in the analysis of the nutrition situation.

The value of having a time series of nutrition status estimates is not to be underestimated, especially in countries where seasonal fluctuations in nutritional status make consideration of the timing of surveys and their interpretation in analysis essential. However, there are still gaps in our understanding of the timing of fluctuations of GAM, not to mention other measures of nutritional status. Therefore, the advantages and disadvantages of repeating surveys at the same time of the year need to be carefully weighed using an in-depth contextual analysis. The timing of the humanitarian cycle also has a significant impact on the timing of nutrition surveys as it uses the calendar year. The optimum timing for nutrition status estimates is very often not linked to the calendar year but at times there is pressure to conduct surveys to coincide with AFI surveys timing and /or to ensure that recent AMN analysis is used in the preparation of a new humanitarian appeal process. Decision making about optimum timing for a nutrition status data collection process needs to balance the contextual priorities with administrative priorities. Nevertheless, there are opportunities to use the recent learning on extrapolating or nowcasting, and forecasting/projecting needs estimates for administrative purposes to conduct surveys at times which are more contextually appropriate for nutrition.

[The creation, collection and collation of determinants of nutritional status](#)

The nutrition sector and linked sectoral information systems also collect data on the immediate, underlying and basic determinants of nutritional status (Figure 5). Understanding the contribution and trends of a range of determinants of nutritional status is vital as where these get worse, nutritional status is also likely to worsen. It is argued in this paper that the current system could more systematically and comprehensively create, collect and collate indicators from both within nutrition and other sectors to better inform analysis of nutrition status. If a recent GAM estimate is available for the analysis then data collected on the determinants of nutritional status can be used to add depth to the analysis of the current case needs assessment. For example, a high GAM prevalence might be partially driven by high diarrhoea prevalence and the needs analysis narrative exploring such aspects would recommend attention to diarrhoea as well as the management of acute malnutrition. In the absence of a recent GAM estimate, analysis of the determinants of nutritional status can help in the process of nowcasting GAM estimates and the resulting needs analysis. The projection (and forecasting) analysis phase of the IPC AMN would also benefit from a more holistic examination of determinants of undernutrition to inform the analysis of future nutrition needs. While the creation, collection and collation of determinant data is critical, it is faced with several challenges as outlined below.

Figure 5: The UNICEF Conceptual Framework on the determinants of malnutrition



Challenges in creation and collection of data on determinants of nutrition status

Gaps in determinant data creation, collection and collation

Data collection tools for needs assessment, for example, SMART surveys, often collect data on direct determinants such as health status (for example, diarrhoea or malaria) and underlying determinants such as access and utilisation of water. Linked sector needs assessment data collection tools also collect data on determinants of nutrition status. For instance, the Food Security and Nutrition Assessment (WFP) survey collects a range of data on the direct determinants of dietary utilisation, underlying determinants of food access and availability and basic determinants such as markets. However, the collection of data on many important indicators on direct and underlying determinants is limited in scope and regularity. Table 2 provides examples of the types of determinant data that may be missing and where responsibility for collecting these data may reside.

Data on the prevalence of common diseases are often incomplete, untimely and of poor quality. In many cases, FCS have already adopted or are in the process of adopting DHIS2 and the increased use of DHIS2 is an opportunity for health and nutrition, although it must be noted that challenges remain in using DHIS2 data for nutrition needs analysis. As health status is as important to nutrition status as dietary intake is, it is a priority to collaborate with the health sector to improve the use of DHIS2 in order to improve nutrition needs assessment.

Table 2: Examples of nutritional status determinant data gaps

Determinant of Nutrition Status	Type of data missing or weak	Examples	Examples of possible responsibilities to collect data.
Direct Determinants	Data on health status (prevalence of key morbidities)	Community-level estimates of prevalence of key morbidities	Ministry of Health, Health and Nutrition Cluster
Underlying Determinants	Inadequate care for children and women	Changes in women's workload, infant and women's dietary diversity, minimum acceptable diet, household water security	Ministries of Health, Nutrition, WASH and FS Clusters
	Insufficient health/nutrition and environmental services	Effective coverage of Health and Nutrition Services (e.g. CMAM, MIYCN and micronutrient), WASH severity Classification.	Ministries of Health, WASH and Nutrition Cluster

Nutrition-related determinants data at household level, sometimes called data on care practices, could also be improved. Data related to dietary intake are available, mostly from the FS sector, but much of the data is only available at household level and often not specifically for women and children. For example, the complexities of the sharing of food in a household, particularly when under stress or during a shock are such that nutrition analysis is weakened by only looking at dietary issues at the household level. This is important for the direct determinants of malnutrition, where indicators such as Minimum Acceptable Diet (MAD) are critical for analysis at this level. Other potential missing data includes analysis of data on women's workloads, regular analysis of data on household hygiene practices, analysis of data on women's livelihoods and coping strategies related to women's access to and control of household resources. Currently, the IPC AMN list uses breastfeeding and the introduction of semi-solid or solid foods as key indicators on caring practices and whilst these may be important, there are several other factors to consider. For example, whether breastfeeding indicators are sensitive to change related to the most common shocks and if not, if they still have a significant role to play in regular nutrition analysis. More efforts to collect nutrition-related household and women's and child's data will result in the need to accept and use much more qualitative data than is currently the case. Acceptance and trust of qualitative data in analyses such as the IPC are tied to increased capacity within NIS to design methods, collect qualitative data and analyse and use the qualitative data collected.

The coverage of nutrition services is one of the underlying determinants included in the UNICEF conceptual framework. Collection of data specifically to include CMAM coverage in the analysis is increasingly rare (for example, using SQUEAC surveys) and when measured is often only for a specific project for donor accountability purposes. New CMAM admissions are compared to forecast caseloads as a proxy bringing with it many weaknesses in the assumptions about how access and utilisation of nutrition (and health) services is contributing, or not, to current and future needs to address acute

malnutrition. Alternative methods, such as bottleneck analysis, using existing programme data, are available for the analysis of access and utilisation of health and nutrition services. There are very similar issues concerning the collection and analysis of data on the access and utilisation of other nutrition services, as well as health and water and sanitation services. Collaboration with the Health and WASH sector would significantly improve the indicators used in this part of the analysis.

Challenges in the collation of determinants of nutritional status

The aggregation and organisation of determinants data is usually organised within surveys, such as SMART, MICs and DHS surveys and within tools, including the IPC AMN, HMIS2 and the Nutrition Cluster Information Management System which collect and collate data from a variety of sources within nutrition and, to a varying degree, from linked sectors and disciplines. Government ministries also collate information to inform policy decision making and organisations such as UNICEF, WFP and a variety of INGOs also collate information, mostly from within their own programmes, but at times including data from other sources to inform future programming needs. The IPC AMN and other needs assessment processes collate this data to prepare for the analytical process of current needs assessment and to develop projections of nutritional needs. The IPC AMN with support from the cluster is strong at curating nutrition status data, particularly wasting prevalence and does a good job of curating data from across the Food Security, Health and WASH sectors.

The IPC AMN typically attempts to collate and use data on 37 determinants referred to as ‘factors contributing to acute malnutrition’. The determinants data covers direct, underlying and basic determinants of undernutrition, in this case, acute malnutrition. The IPC 2016 guidance (version 3) gives recommendations of possible sources of information on these contributing factors²¹. The Joint Intersectoral Analysis Framework (JIAF), an inter-sectoral methodology for the analysis of context, shocks and humanitarian conditions to accurately determine needs, collates determinants data on 123 [indicators](#). Determinant data collected includes, but is not limited to, quantitative and qualitative data on food intake (minimum dietary diversity (MDD), minimum meal frequency (MMF), and minimum acceptable diet (MAD)); diseases (diarrhoea, malaria and acute respiratory infection) and disease outbreaks; health system functioning (routine immunisation coverage); health-seeking behaviour; community-based management of acute malnutrition (CMAM) coverage; and outcomes of the IPC AFI analysis²². The collation and analysis of all this data is complex and suffers from several challenges.

Box 4: IPC AMN missing determinant data challenges

IPC AMN analyses explore a broad range of contributing factors; however, information is often missing for many of these determinants. For example in the latest [Nigeria AMN](#), data for all regions is only available for 16 of the determinants (39%), and in [Mozambique](#), determinant data for all districts was only available for 8 indicators (20%). Other countries are able to provide more data on such indicators with analysis from Karamoja, [Uganda](#) for example, only indicating that data was not available for all districts for 7 data points and information for 34 indicators (84%) was available. In contrast, some AMN analyses do not present any information on determinant data. For example, a recent analysis from [Burkina Faso](#) does not present data on contributing factors with only a small note identifying inadequate food intake, high prevalence of fever and diarrhoea and low coverage

²¹ SMART surveys, rapid SMART surveys, food security monitoring systems (FSMS), knowledge attitude and practice (KAP) surveys, S3M, national nutrition surveys, Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS), surveys and MoH records. More recent COVID-19 related guidance (IPC, 2021) states the need to include an analysis of the projected impact of the COVID-19 pandemic on relevant contributory factors.

²² The severity and magnitude of acute and chronic food insecurity.

of access to safe drinking water as contributing factors to high GAM prevalence rates. An analysis from [Somalia](#), [Kenya](#) and [Angola](#) also do not present determinant data in a systematic manner.

Much of the determinant data is collected, collated and analysed by other sectors allied to nutrition though these sectors have their own priorities in selecting indicators, the periodicity of collecting data and the analytical methods used. Other sectors also suffer from the same challenges of collecting quality data from all priority areas and as a result, the determinant data used in the nutrition needs analysis tends to be opportunistic and data is often missing or difficult to use in a nutrition analysis. Thus, the selection of indicators to include in the current list of 37 determinants is significantly influenced by the availability and quality of data from other sectors and therefore, compromises need to be made in balancing the availability of data with optimum selection of indicators. A review of the list should inform intersectoral and disciplinary discussions on possible adaptations of data collected. For example, can the Food Security Sector collect child dietary diversity data in addition to household data, or can the health sector collect and analyse data on health service functionality more regularly?

Added to this, a significant current challenge associated with nutrition's reliance on other sectors for data is the lack of protocols for sharing data between sectors. Data sharing presents numerous logistical, ethical and trust challenges but data collected in FCS is funded as a public or humanitarian good and the lack of clear protocols, until overcome, will continue to have a negative impact on evidence-based response to needs. An added constraint is in situations where there is a lack of accessible, quality-assured routine and programmatic data or a portal/platform where such data resides. In these situations, NIS actors find themselves "*having to effectively to start from scratch*" in order to understand and interpret an evolving situation thereby increasing the reliance on prevalence-based nutrition data to assess a situation.

An iterative adaptation of the list of determinants needs to consider several factors. For example, the consistent inability to collect data on an indicator should lead to the use of an alternative or agreement within nutrition or with allied sectors to adapt data collection methods to fill gaps. Furthermore, the volatile and uncertain contexts typical of FCS require some of the indicators to be sensitive to change and for all indicators to be analysed as trends. Some change insensitive indicators (e.g., exclusive breastfeeding) may still be appropriate for use but overall, much more deliberate and consistent attention should be paid to adapting the list of determinants indicators to context and in order to anticipate the volatile contexts of FCS.

FCS contexts vary and can be highly volatile and uncertain. Because of this, the 37 indicators need to be adapted to take account of context and must also be able to provide insights into how often rapid changes in the context are likely to be affecting current or future needs. A key objective of needs assessments mechanisms, such as the IPCAMN, is to allow an evidence-based comparison across a wide variety of contexts and therefore, the list of determinants is standardised. This diagnostic suggests that this is an inappropriate level of standardisation. The objective of comparing across contexts is appropriate at the level of severity and for estimations of people in need (PIN) but not at the level of determinants of those needs. Therefore, over time each FCS analytical process should iteratively adjust its list of determinants according to context- for example, the incidence of diarrhoea may be more appropriate in one context than another.

Important for the collation of data are ministry national and sub-national information systems for health (in which many nutrition indicators are embedded), food security, WASH, and social protection. In many FCS contexts (with some notable exceptions), national and sub-national data can be disparate and of poor quality as frontline staff working in clinics and communities are often over-stretched, under-resourced and disconnected from decision making. In addition, potentially useful data of adequate

quality may not be aggregated or collated, while there may be no mechanism for potentially useful data to be collated.

As the pathways to nutritional status are complex, constantly changing and affected by the shocks and stresses of FCS, improving the analysis of data on determinants could be seen to be so daunting and complex that questions are asked about the advisability of using resources to make the analysis stronger. However, for several practical and conceptual reasons the improvement of the use of data on determinants for needs analysis is critical. Limitations in the availability of resources for nutrition in FCS, combined with an increasing number and severity of crisis, strongly suggest that nutritionists need to be much better at forecasting critical needs, not only for CMAM services but also for other nutrition-related services and activities. Part of NIS accountability to FCS populations is to be able to represent the nutrition needs of all so decisions can be made with as much evidence as possible across all the nutritional vulnerabilities. In order to honour this accountability, NIS may need to opt for the collation of data with less than the highest reliability to represent needs in places and amongst populations where high-reliability data cannot be collected.

The range of possible nutrition determinant data to be collected and collated is wide but if based on a clear, contextualised conceptual understanding of key determinant indicators, the prioritisation step (Step 6 below) of the data cycle at global and national level can achieve consensus on appropriate indicators to be collected within the nutrition sector and through the linked sectoral information systems. Decisions on the contextually based prioritisation of data are decisions to be made by the national NIS structure. Global governance structures will need to provide guidance and technical support to this process. An agreement on a more systematic approach to collecting and, crucially, sharing data on determinants of nutrition status would be required for this potential to be achieved.

[Towards advancing the conceptual thinking on determinants data](#)

A significant challenge in developing a process to analyse determinants data is a focus on causality, i.e., how changes in determinants drives changes in the outcome (i.e., nutrition status). The complex nature of the causes of poor nutrition status coupled with the complex contexts of FCS will make the development of causal analytical frameworks for determinant data very challenging, if not impossible. A potential solution to the complexity of analysing determinant data is to re-conceptualise the purpose of nutrition activities, moving away from the prime objective of mitigating or improving nutrition status towards a focus on improving nutrition security which refers to nutrition activities aiming to improve all the determinants of nutrition status. For example, an activity to reduce the severity of diarrhoea incidence has a value for nutrition and not just as an activity to reduce GAM or stunting. The NIS would estimate the severity and magnitude of needs for each of the areas known to be direct and underlying determinants. IPC AMN severity classifications and derived PIN estimates would, therefore, not only be based on the nutrition status estimates and GAM but also on the estimates of needs for disease prevalence, access and utilisation of basic services, household care practices and food insecurity. An index from each determinant area would then be combined as an index to represent needs for nutrition or nutrition security. Using this approach could also significantly improve response analysis and programme monitoring. In an era where the importance of addressing all the determinants of undernutrition is undisputed, there is an urgent priority to improve this dimension of data collection on nutrition services.

[Further challenges in collation](#)

[Limited scope and clarity of dashboards and other nutrition data collation tools](#)

The Nutrition Cluster and the MoH collate data from the health and nutrition sector, in the case of the Ministry the principal tool used is DHIS2. However, there are several initiatives such as NIPN that are

developing country level multisectoral nutrition related data collation platforms. The Nutrition Cluster most often collates data on dashboards with the principal objective of coordinating programmes to avoid overlaps and identify gaps in the coverage of nutrition programming. The principal actions the dashboards seek to influence is accountability with donors and advocacy for more resources. Consequently, in almost all cases these dashboards concentrate on Humanitarian Nutrition Sector actions (for example, CMAM, Supplementary Feeding, vitamins and MIYCN).

There are ongoing significant improvements in the cluster use of dashboards but with a restricted focus on coordination and upwards accountability purposes. Despite these efforts, many of the cluster dashboards lack clarity of purpose, in terms of which decisions they are trying to inform. There is a limited amount of analysis of these data. The dashboard format does not lend itself to presenting analysis but there are opportunities to use the dynamic capabilities of apps like Powerbi to conduct and present analysis in a dashboard format. There are many more significant opportunities for the nutrition cluster to use the analytical step to improve the impact of their Information Management System to influence the needs assessment, programme monitoring and accountability functions (see step 3). Whilst DHIS2 has the capacity to move past the collation of data from health services, this capacity is rarely used, and the analytical step is left to other tools or processes to extract DHIS2 data for further analysis. It is not clear to what extent the new multisectoral data collation platforms, such as NIPN, are designed to also produce analysis of the data.

Finally, currently, all data curation sub-systems suffer from a lack of agreement on data transparency and sharing protocols. **Clearer protocols for data sharing are needed to guide relationships between organisations and with Government.** Agreement on data protection and research ethics would be a key part of these protocols.

Summary Points

- Gaps in the coverage and administrative detail of survey-based needs assessment are inevitable in FCS. More guidance is required to expand methods, and tools and tolerance for less rigorous data collection to fill the inevitable gaps in coverage of estimates of anthropometric status. Of particular importance is the attention to guidance on making decisions about the use of less rigorous data to represent the needs of the hardest to reach or marginalised populations.
- In several cases, data collection on other groups, areas or measures of nutrition status are as important or even more important than the current focus on children's acute malnutrition measurements. Guidance is required to support country-level decision making about the contextual prioritisation of needs assessment for particularly vulnerable groups (for example, the elderly), vulnerable areas (such as urban slums), and other measures of nutritional status (including micronutrient status).
- Decision-making in relation to the optimum timing for data collection processes need to carefully balance the local contextual priorities with the Humanitarian Cycle processes. Recent experience with nowcasting and projecting or forecasting needs may allow NIS to time surveys more appropriately for the nutrition context.
- Currently, the collection of data on determinants of nutrition status is mostly opportunistic. A systemic review of the context-specific priority needs for nutrition status determinant data collection is urgently required. This review should consider determinants data collection within the nutrition sector and with linked sectors and disciplines.
- Work needs to be undertaken to determine how best to contextualize determinant data collection to ensure information can be collected and analysed and the process made systematic and documented in all IPC analyses.
- NIS will need to review how to collaborate with other sectors and disciplines to modify the data they collect to strengthen the collation and analysis of data on nutrition determinants. In some

FCS, multi-sector data collation platforms will already exist within government or parastatal mechanisms and can be incorporated into the determinant analysis.

- The Nutrition Cluster should review the purpose of their dashboards to clarify which decisions the dashboards are trying to inform and adapt the dashboards accordingly.
- The Nutrition Cluster should clarify to what extent the IMO function could extend its role from collation and presentation of data to include a stronger analytical capacity.
- The establishment of data transparency and sharing protocols and agreements between sectors and with the government is a priority. Agreement on data protection and research ethics would be a key part of these protocols.

Step 3: Analysis

There are elements of NIS in FCS that utilise very sophisticated analytical frameworks and processes particularly for the analysis of nutrition status data, especially GAM, and its use in needs assessment, such as the IPC AMN and SMART surveys. These analytical processes have demonstrated considerable and successful strengthening over recent years.

Current challenges in analysis

Despite these advancements, there remain weaknesses in the elaboration and application of analytical frameworks for estimating current and projected number of PIN and associated severity classifications. The weaknesses can be seen in the analysis of the determinants of nutritional need- for needs assessment, in terms of numbers and severity of the needs and for the use of determinant analysis for recommending appropriate nutrition actions. There are also weaknesses in the use of programme monitoring data to influence actions to improve the coverage and quality of essential programmes. Finally, like many other information systems, there are weaknesses in analysing available data for the accountability function, particularly for downwards accountability.

Challenges in developing case estimates of severity and people in need without reliable nutrition status anthropometric data

Prevalence data for wasting are used to establish a current case estimate of severity and PIN. This is straightforward if there has been a recent anthropometric survey but gets more complicated if the data must be extrapolated from other surveys (historically or geographically) or by using less reliable anthropometric data. Despite improvements in getting data on nutrition status, it is highly likely that for some parts of an area of concern, recent anthropometric data will be missing or not at sufficiently disaggregated level, for example, available at county but not sub-county level. In this case, anthropometric nutrition status data can be 'nowcast'²³. This approach was widely used during the first 18 months of the COVID-19 pandemic (see Box 5).

Box 5: Country examples of nowcasting or forecasting caseloads in light on COVID-19

Global guidance, reflected in the UNICEF/ GNC/ GNC Alliance NIS guidance briefs in the context of COVID-19, recommended the utilisation of existing nutrition information from previous surveys with a review of contributing factors²⁴ that may have changed in light of COVID-19. It recommended that in light of changes to contributing factors, nutrition situation analysis should be based on previous estimates. If no changes in contributing factors were expected, previous estimates were used and if an increase was expected, using the upper confidence limit from the confidence interval from the latest survey was recommended. For example, an IPC AMN analysis in Yemen in March 2021 noted that the acute malnutrition situation was likely to deteriorate in the aftermath of the COVID-19 pandemic and

²³ Nowcasting. i.e., estimating the current situation by extrapolating from historic or adjacent or less reliable evidence.

²⁴ Contributing factors = determinants

adjusted point prevalence estimates for SAM, MAM and GAM by an additional 11% based on the global guidance.

A virtual IPC analysis was conducted in Madagascar wherein, while relatively recent survey data was available, estimates were re-calculated for district-level analysis. Indicators were also drawn from DHS data, coverage survey reports, SMART surveys, and LinkNCA²⁵ surveys conducted over the previous three years. The likely impact of COVID-19 on malnutrition was considered based on global IPC guidance on developing assumptions for programme analysis. This guidance includes a set of guiding questions on how non-pandemic shocks may have been impacted considering COVID-19 as well as the pandemic's potential impact on the immediate, underlying, and basic causes of malnutrition in the context analysed.

In Afghanistan, an alternative model was used in which recent SMART survey data (2018-2020) was only available in 17 provinces (out of 34). To mitigate this challenge, data from 2015 was used and, for provinces where even this was unavailable, extrapolations were made using data from adjacent provinces. To estimate the potential impact of COVID-19, global level estimates were used as well as estimates of an emergency response in Ethiopia (a previous malnutrition crisis) as no country-specific or regional data was available. Information on aggravating factors (diarrhoea prevalence, household food insecurity, immunisation coverage, conflict, and risk of COVID-19) were also considered for targeting purposes. These different methods have been proposed to extrapolate or nowcast GAM estimates and should be evaluated now that mitigation measures have shifted and Covid-19 protocols have relaxed so surveys are once again possible.

The determinants of nutritional status could play a greater role in improving the analysis of needs. Even when a recent and reliable estimate of anthropometric status is available, better use of the determinant data in the analysis can improve the response analysis part of the needs assessment and builds confidence in the estimates of severity and magnitude of needs. When less reliable data is used, analysis of determinants of nutritional status plays an even greater role in improving the analysis and provides more confidence in the estimates of need. The places where surveys or other methods are most needed are also the places where often anthropometric data is not available for example, inaccessible areas. In this case, needs analysts currently nowcast estimates or leave blanks in the estimates and on the maps of severity. However, leaving blank areas on a map has political risks when parties to the conflict dispute the degree of inaccessibility caused by the conflict (such as in Nigeria).

Nowcasting from adjacent surveys or the past should not assume that nutritional status changes in straight lines or is the same as similar administrative or livelihood zone. Current IPC guidance and the guidance produced for nowcasting during the pandemic are weak in describing how to analyse the determinants and thus, there is considerable room for an improvement, both in the guidance and in analysis conducted to adjust nowcast severity and magnitude estimates.

These case examples highlight the lack of clarity on how the determinants of GAM should be used in nowcasting or forecasting caseloads and severity. In the example from Madagascar, how this was done is not clear aside from assumptions around the impact of the pandemic and in Afghanistan, it does not appear that the determinants have been used to adjust caseloads outside of the impact of COVID-19. The UNICEF/ GNC/ GNC Alliance COVID-19 guidance briefly reflects the importance of considering such factors but does not elaborate on how to do so. As discussed above, nowcasting could also be of use to better identify contextually appropriate timings of nutrition surveys, allow time to measure other priority indicators of nutrition status and to investigate the nutrition needs of other priority groups than just children aged 6-59 months. Therefore, it is now a priority to evaluate these approaches based on the experience during the pandemic and in other circumstances. Lessons learned on the use of

²⁵ <https://linknca.org/?lng=en>

determinants data should be used to develop more robust guidance on nowcasting using determinants data (see below).

A lack of guidance and transparency on incidence calculations for projections

The current case analysis is the first step in estimating future needs, in terms of numbers in need or severity of that need. The forecast or projected needs are the most important output from IPC type needs assessments. Currently, GAM prevalence estimates, recent or nowcast, are converted into incidence using an incidence conversion factor. There is currently limited guidance on incidence calculations, which have a huge impact on PIN projections. In most cases of projection, the incidence conversion factor used is standard across all contexts. Incidence conversion factors have been shown to change according to context, temporally and geographically. New evidence demonstrates that the current standard conversion factor significantly underestimates needs in almost all contexts (Isanaka et al, 2021). For example, in Tigray, a standard calculation of 1.6 was used and resulted in an estimated need of 53,000 children for severe wasting treatment for 2021. Evidence on incidence previously collected in Ethiopia suggested that instead of 1.6, a much higher conversion factors should be used. A draft UNICEF guidance note suggests Tigray should have used a conversion factor of 6.1. A close analysis of the projected conflict-related drivers or determinants of GAM incidence would have allowed analysts to justify using a higher conversion factor and to monitor the assumptions used over time to more appropriately represent the need for nutrition services in Tigray.

As the methods to calculate incidence conversion factors are complicated, context-specific adjustments of the incidence conversion factor need to use an analysis of projected changes in the determinants of nutritional status to judge the conversion factor to be used. Projected PIN and severity estimation analysis does not yet have guidance to use data and information from the determinants of malnutrition to adjust incidence conversion factors, but draft guidance is in the works and its publication is urgent, even if only in draft form for pilot testing.

The projected or forecast PIN and severity analysis are key for programme planning, advocacy for funding, targeting, prioritisation and accountability for performance against targets. The discussions on incidence conversion factors can get very heated as it directly influences funding appeal sizes and priorities. However, key informants suggested that there is a tendency to overstate the precision and accuracy of the PIN estimates. In a context where current case estimates are often nowcast and where there is limited expertise and experience of how to use determinant data to calibrate incidence calculations, PIN calculations are probably only approximate at the tens of thousands level. Furthermore, during the period of the projection in a volatile FCS environment the assumptions about drivers of GAM used at the beginning of the projected period can very easily change several times and sometimes the change can be very significant, further adding to the uncertainty about projected PIN estimations.

Acknowledging the significant role assumptions play in nowcasting and forecasting, is a first step to addressing this issue. Secondly, monitoring the assumptions used will allow NIS to regularly adjust PIN estimations as required. A quarterly review of assumptions used to calculate PINs would allow NIS to be more accountable by representing changing needs amongst the population rather than giving a false impression of accuracy and precision of PIN and activity targets. This is important for funding advocacy, upwards and downwards accountability and for programme monitoring to better explain how the response is achieving targeted coverage. For instance, in several cases, clusters have reported greater than 100% coverage of targets. Justification for these impossible reported coverages could be that needs have increased, or initial target calculations were wrong. Better analysis of the reasons for issues such as greater than 100% coverage is vital for activity monitoring to improve activities and for needs assessment to represent changes in needs.

It is important to note that the incidence factor conversion only applies to the analysis of nutrition needs related to acute malnutrition and the methods for projecting other prevalence-based needs are unclear, for example, for acute malnutrition amongst women or management of micronutrient deficiencies. Projections of population-based needs, for example, the need for Vitamin A supplementation or for MIYCN communication activities are calculated in a wide variety of ways across countries and very often are not related to the severity of needs.

[A lack of clarity on how to analyze data on determinants to strengthen nowcasting and forecasting](#)

This paper has argued that the creation, collection, curation and analysis of data on the determinants of nutritional status is essential for all iterations of the needs assessment process to inform the current case estimates of needs and is especially important for the projections or forecasts of future needs and their severity. A fuller analysis of the determinants data is also required to make more evidence-based recommendations about required actions to take to mitigate malnutrition i.e., response analysis. Table 3 outlines how determinants data links to the estimates of need.

Table 3: Use of data on determinants of malnutrition in relation to nowcasting and forecasting

Purpose	Description	Source of Data	Use of Data on Determinants
Current Case Severity & PIN	Recent Reliable Nutrition Status estimate available	Recent SMART Survey	Improve explanation of situation.
	Nowcasting	Historic nutrition status estimate	Improve assumptions used to estimate needs
		Adjacent nutrition status estimate	
Projection Severity & PIN	Projecting or Forecasting	Less reliable nutrition status estimate	
		Projection using recent reliable current case estimate	Establish assumptions for projections. Including assumptions used to select incidence factor (k)
		Projection using Nowcast current case estimates.	Build assumptions for projection on assumptions for nowcasting. Including assumptions used to select incidence factor (k)
Response Analysis		Trends in determinants data	Use determinants data to recommend response actions for projection period.

The current IPC AMN and JIAF guidance for the use of determinants data, or data on contributing factors, could be strengthened through an iterative process. A first step would be to review the current list of indicators used by the IPC. This review should use a conceptual approach, be context-specific and use the experience of the current list to make decisions about which are useful indicators. Criteria should include indicator data availability (including availability of trends), how well they help inform assumptions used for nowcasting, forecasting and response analysis and how they are sensitive to change. At the same time, key indicator gaps can be identified and through collaboration with other

sectors, as well as the development of new or adapted methods for data collection on required indicators, some of these gaps can be filled. To enable an iterative improvement, each IPC AMN, or equivalent, needs assessment process should be reviewed after completion. The review should focus on the appropriateness of the indicators used, how the indicators were combined and used to develop assumptions that influence the nowcast and forecasts estimates of severity and caseloads. Prior to each new IPCAMN, or equivalent, a retrospective analysis should be conducted to verify the strength of the assumptions used in the previous forecasts, for example, was an assumption that diarrhoea would increase in the rainy season and result in an increase in demand for nutrition services strong or not.

Significant research has been carried out on the determinants of undernutrition and the relationships between determinants. The list of selected indicators could be considerably improved by a contextually appropriate analysis of past research. Iterative improvements could also be accelerated by commissioning context-specific research on determinants and their relationships. A key issue is to research the relationships between indicators as opposed to the indicators themselves. For example, research on the effect of changes in coverage and use of CMAM services on nutritional status, with an emphasis on how changes in coverage of services affect nutritional status. Another research example would be to explore how shock-related changes in women's workload affects the utilisation of health and nutrition services and as a result, impact on nutritional status. Using existing experience within nutrition, key research questions on the relationships between determinants and how shocks affect these relationships could be defined and research commissioned.

A lack of use and analysis of real-time data in FCS

In highly complex and volatile situations, a decision-maker must be regularly supplied with analysis to be able to adapt and focus resources. This is important for effectiveness, efficiency and equity. Therefore, more regular monitoring of indicators is required. The current system of projecting needs once or twice a year is ineffective because it does not allow flexibility to adapt according to changes in context in a volatile environment. Real-time monitoring (RTM) of the assumptions used to make the periodic projections will allow a context-specific change in estimated needs throughout the year. Near real-time monitoring (NRTM) is vital to monitor assumptions used to project needs, to allow for the use of determinants in needs projections and response planning and in order to make activity monitoring related decisions more effective.

The next step is to develop a NRTM to monitor these assumptions. As nutrition and the FCS context are very complex, the assumptions should be grouped in scenarios and the NRTM system should monitor the scenarios to periodically recommend changes in PIN or severity projections or even recommend new assessments or updates. Regular monitoring of changes in key determinants is also important for adaptation of the response to address emerging needs, respond to significant increases or decreases in need. For example, a better than forecast rainy season may have negative impacts on household hygiene with negative feedback on disease prevalence and a resultant increase in the incidence of acute malnutrition. Finally, RTM of determinants data can help to improve nutrition activities through the activity monitoring purpose. For example, RTM of CMAM service defaulter rates flags high defaulter rates and should prompt decisions to adapt activities to reduce these rates and subsequent activity monitoring will be able to monitor the success of these adaptations. As discussed above the improved use of determinants data requires an iterative approach to learning in relation to the relationships between determinants, context and outcomes such as GAM. The need for more investment in analytical capacity vis-à-vis determinants data for needs assessment is warranted and linked to this observation is the need for more RTM analytical capacity.

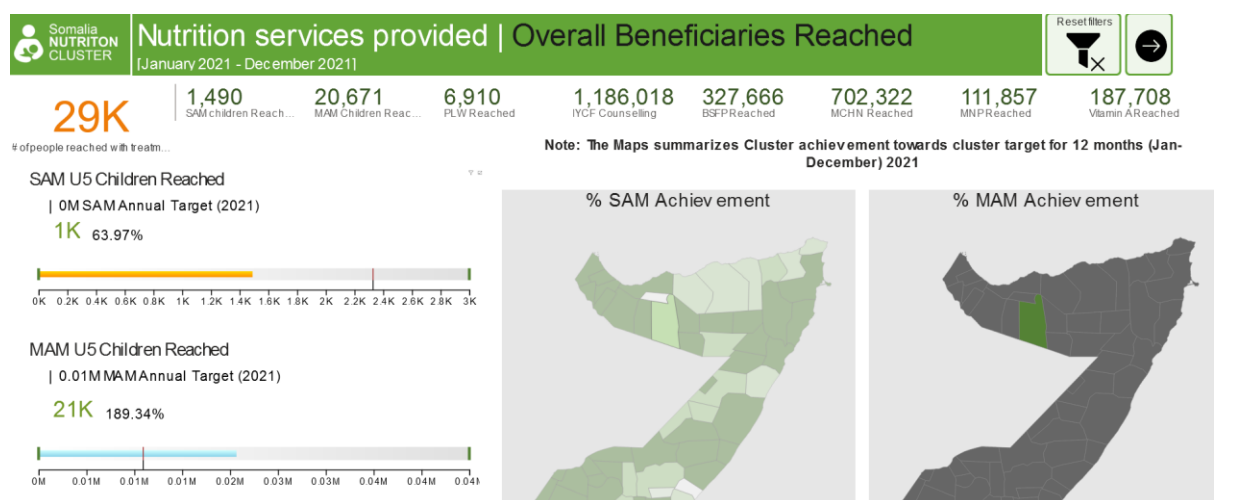
Weakness in analytical capacity for programme monitoring function

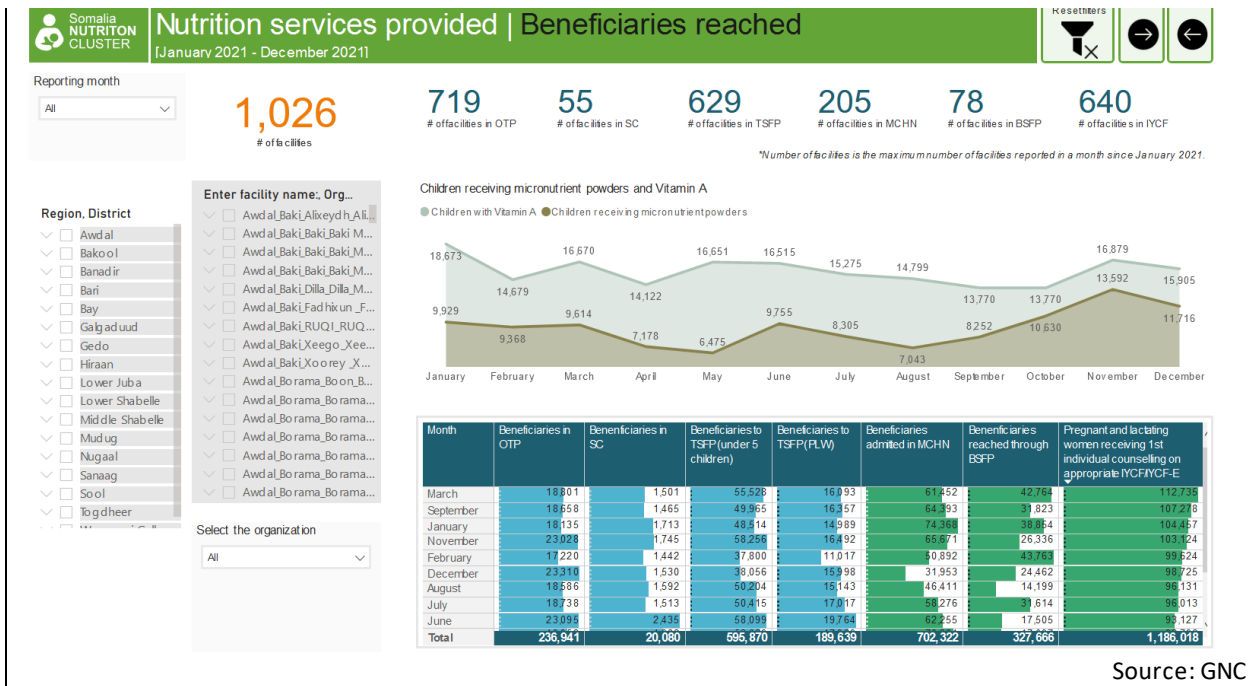
There has been a lack of clarity on roles and responsibilities and investment in capacity for analysis of activity monitoring data, for instance analysis of nutrition services data. The Nutrition Cluster and

individual agencies appear to be involved in analysing and using activity monitoring data, but interviews showed that there is confusion on this issue and as a result, opportunities to improve activities and to inform the needs assessment are missed. The biggest noticeable gap in the current roles of the IM function is the analysis of nutrition service data (activity monitoring) to guide actions to improve the coverage and quality of nutrition services. In Box 6 below, an example of the dashboard for Somalia illustrates the use of service data to ensure that cluster partner geographic overlaps are avoided, and gaps are highlighted.

Box 6: Somalia country dashboard

The dashboard from [Somalia](#) includes the reach of IYCF counselling, blanket feeding programmes, micronutrient supplementation distribution, vitamin A supplementation, and interventions for child health & nutrition, interventions for pregnant and lactating women as well as CMAM interventions. Visualisations are used to depict geographic reach and achievements towards cluster and SPHERE targets and standards. These are often presented during regular cluster meetings and are posted on cluster and humanitarian response websites, see the [example from Somalia](#), which provide a useful platform for accountability for targets and quality standards. However, beyond presenting collated information, there is very little evidence of the analysis of the data to inform decision-making in relation to adapting cluster nutrition programming to improve the coverage or quality of the services. An example of an analytical step that could be taken within a dashboard map is to present gaps in coverage of nutrition services. Such an analysis would allow planning and advocacy on how to fill critical gaps. There is also no evidence of incorporation of data from other sectors, for instance, public health and WASH, in the collation processes to improve programme monitoring and related decision-making.

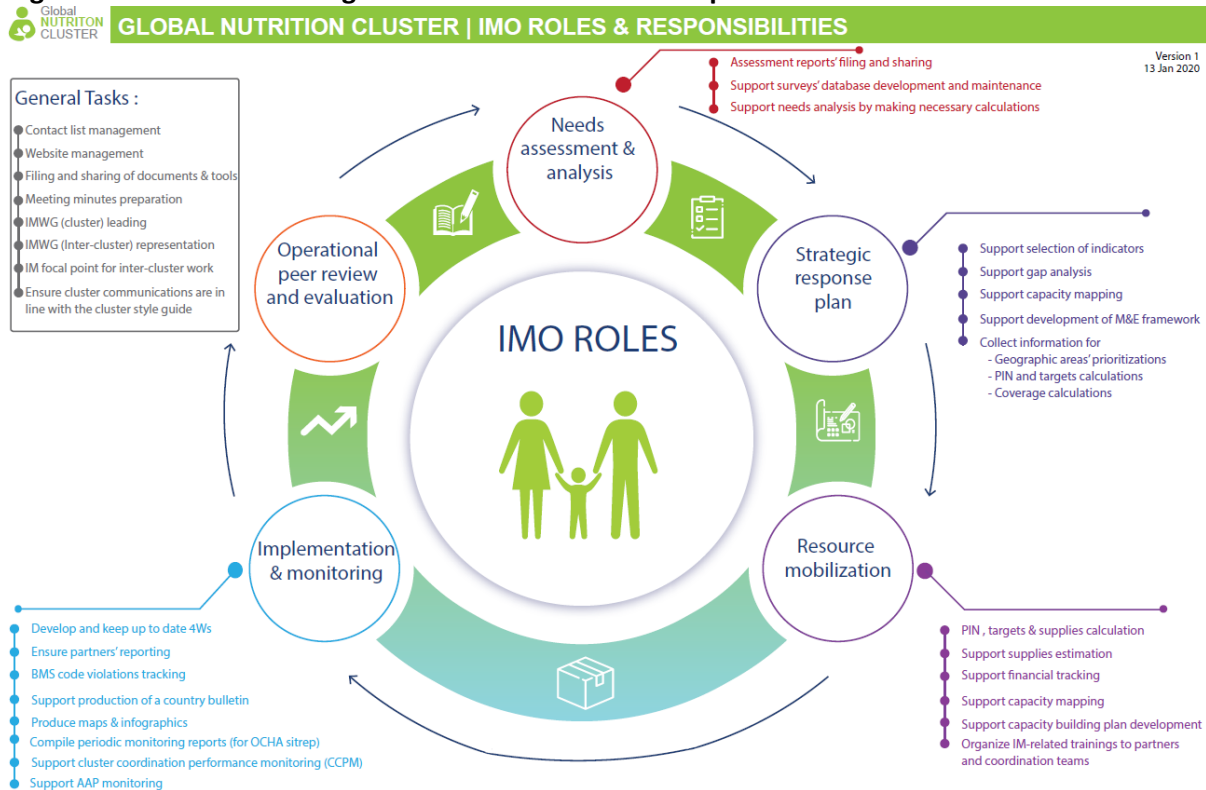




Source: GNC

Whether it is the responsibility of the cluster to collect, collate and analyse determinant data and particularly, whether this falls within the Information Management Officer's (IMO) remit (see Figure 6) is unclear. IMOs typically focus on the collection, data cleaning, and collation of data and tend to have limited time and capacity to further analyse data either for needs assessment or programme monitoring. In fact, in all the many IMO roles and responsibilities outlined in GNC guidance, analysis work is only mentioned twice in relation to 'supporting needs analysis by making necessary calculations' and 'supporting gap analysis' although some elements of analysis are listed in the GNC IMO Competency Framework which outlines competencies required for those working in information management in Nutrition Clusters (further details outlined in Box 8). Since the establishment of the IMO function, there has been a struggle to reach the objectives of fully financing and staffing IM capacity in all countries as well as within the GNC and gaps remain. The roles of the IMO have defined the competencies of staff recruited. In general, IMOs tend to be experts in data management as opposed to nutrition data analysis, with an emphasis on skills such as database management, dashboard creation and website management. Hence both the established roles of the IM function and the capacity of IMOs does not include the capacity to analyse the nutrition data collected and collated by the IM managers. This is an issue because without ecosystem clarity on which structure is responsible to analyse data (particularly activity monitoring data, collected and collated by the nutrition cluster, the Government and individual agencies) the NI ecosystem is missing a significant opportunity to achieve its goals of influencing more effective and equitable actions to improving nutrition.

Figure 6: Information Management Officer's roles and responsibilities



Source: GNC, 2020

A secondary negative impact of the lack of analytical capacity across the NI ecosystem is that nutrition activity and determinant data is collated by the IPC AMN with little pre-analysis done on the data. The responsibility for analysis of activity monitoring and other determinant data need not necessarily be the sole responsibility of the nutrition cluster or indeed may not be the responsibility of the cluster at all. It is, therefore, urgent to establish clarity on roles and responsibilities for analysis of activity monitoring data and to plan to invest more analytical capacity into the structures of the NIS which have the responsibility to analyse and help decision-makers make decisions to improve nutrition activities.

Country clusters increasingly include 'local' nutrition stakeholders in coordination structures and in many cases the Government chairs or co-chairs national clusters. Sub-national clusters also include local actors more systematically in acting on data collated by IMOs yet currently these processes do not appear to be being implemented within a strategic vision of increasing accountability to local actors and FCA populations (although efforts are being made in this regard within the GNC) and as a result, no specific accountability guidance seems to be available. The accountability strategy of the GNC also appears to be more iterative than based on a strategic vision on accountability.

Box 7: Responsibility for determinant data analysis and the role of IMOs

Some elements of analysis are listed in the [GNC IMO Competency Framework](#) which outlines competencies required for those working in information management in Nutrition Clusters, however, this is limited with functional competencies focusing on providing reliable support to the cluster, collecting relevant data, managing data efficiently and sensitively, communicating and disseminating information, monitoring the response and strengthening national capacities to respond and lead. Similarly, of the many IMO roles and responsibilities in the guidance, analysis work is only mentioned twice in relation to 'supporting needs analysis by making necessary calculations' and 'supporting gap analysis'. In general, it appears that while analysis is part of IMO's roles, it is not a primary function of

this role. Other sectors/ mechanisms include analyst roles in order to ensure that this important aspect of information is not lost in amongst all the other responsibilities within cluster coordination. For example, the VAM mechanism includes analysts and OCHA recruits Humanitarian Analysts (an example ToR can be found [here](#)) who work alongside IMOs and whose sole purpose is to analyse data, including determinant data, on a continual basis and to review changes in the humanitarian situation and key risks.

Challenges in accountability and analysis

Across all parts of the NIS-FCS system, there are analytical accountability weaknesses particularly downwards accountability to the sub-national levels including to affected communities as well as in some cases, with upwards accountability to national governments and global stakeholders. Downwards accountability should involve the participation of affected communities in the needs assessment, analysis and programme monitoring analysis (Hilhorst et. al., 2021). Whilst the IPC process does give attention to sub-national participation in its analysis process, participation tends to be mediated through formal representatives such as local government and local NGOs. Including communities in the analysis process represents increased complexity for the IPC process as there would be advantages in the quality and reliability of the analysis. The programme monitoring functions of the Nutrition Cluster also uses sub-national participation in the form of sub-national cluster groups and the contribution to data collection and collation at the sub-national level. However, as the analytical function of the Nutrition Cluster is weak, even at the global and national level, sub-national and community participation in analysing what the collated data means is understandably limited. Adopting processes to optimise downwards accountability is a complex process and so requires clear guidance to country teams on approaches to be tested. No such guidance was found during this diagnostic.

Summary Points

- It is a priority to evaluate approaches used to nowcast and project severity and magnitude of needs based on the experience during the pandemic and in other circumstances where recent and reliable current case estimates are not available.
- Real-time or near real-time monitoring of the context-specific assumptions used to make projections can help with adjusting the estimated needs on a more continual rather than occasional basis and in so doing, strengthen response planning and resource allocations.
- Nutrition status determinate data has the potential to be used for improving analysis of needs in the presence or absence of a recent and reliable current case estimate. Nowcasting, forecasting and projecting needs can also be improved using determinant data. Nonetheless, there are many challenges to collecting, collating and analysing determinant data. It is recommended that in parallel with the review of priority determinant data recommended above pilots of methods and tools to use determinant data are conducted as soon as possible.

Step 4 and Step 5: Translation, dissemination and decision making

Steps 4 and 5 are inextricably linked as one directly informs the other. All NIS (FCS) translate their analysis into forms of communication that are meant to stimulate the decision makers to take action. The IPC AMN and CH for instance have specific guidance for the presentation and communication of results. There is a template for the analysis report that includes key facts and messages, classification maps and estimated number of children in need; situation overview and key drivers; recommendations for action; detailed number of children in need; process, methodology and data sources; results in figures; summary of contributing factors; profile of the most affected areas; and results of other IPC classifications. Specific guidance on each of these is also included. The IPC AMN guidance states that this process has been designed to reach a variety of audiences through a clear, concise, accessible and

consistent format. The IPC AMN guidance also includes a minimum set of dissemination activities required for sharing analysis findings. These include: the presentation of results to national and regional stakeholders; sharing of communication products with the IPC Global Support Unit to post on the IPC website and dissemination through global channels; and sharing through channels such as email, websites and social media. CH provides a similar level of guidance, the purpose of which is to make the main situation analysis results available to decision-makers for better decision-making. Guidance is given on mapping standards, producing an analysis report, and the sharing of the report in a timely manner. The purpose of this communication is to inform decision-makers, support the decision making on allocation of the Regional Food Security Reserve, to inform response planning and facilitation of CH's information platform on food crises. The report is shared with partners on appropriate websites and published by the AGRHYMET regional centre. There is some guidance in GNC documents (2021) on the sharing of information. Headline results of the national cluster snapshots/ dashboards are shared on the [GNC website](#) and all detailed reports are available on the Humanitarian Response website (hosted by OCHA). Furthermore, Nutrition Cluster [map templates](#) for dashboards are provided. There is no central repository for sharing data from SMART surveys (although such a repository is planned for 2022) and SQUEAC assessments, although the reports are presented in a standard format and often but not always shared by those who instigated the surveys.

Current challenges in translation, dissemination and decision making

A lack of guidance on sharing of information

Despite the work that has gone into steps 4 and 5 of the data cycle, these functions still suffer from a lack of clarity on which decision-makers need to be targeted and influenced, what the key messages are and the objectives of these messages. Given there is such a wide range of potential decision-makers involved in FCS, the lack of clarity on the mediums to use for different target audiences and the most influential format for communication is a concern. This aspect is probably the weakest of the data action and accountability cycle functions because it is the least resourced and given the least amount of strategic attention. As a result, the systemic and strategic prioritisation of actions (Step 6) to be taken to improve all the other functions of the data cycle are often disjointed and piecemeal. For instance, if the strategy for communication of messages to donors is not clear enough, then the indicators collected and the analysis done on the data will not be as effective as it could be in influencing donor and other actors such as the government (national and sub-national), or the international humanitarian system. Overall, it can be concluded that the onus currently is on decision-makers to seek out the information from the NI ecosystem and interpret it to inform decisions rather than the information being analysed and presented with programmatic needs and resources allocation decisions in mind. As one stakeholder noted, *“Donors need more than this and are a bit fed up with being ‘dumped’ with a lot of data and expecting them to work out what it means”*.

The transfer of analysis into action tends to be seen as the responsibility of decision-makers as opposed to being a part of the accountability of the NI ecosystem. A NIS that is content with only producing analysis and does not optimise its impact on activities aimed at improving nutrition is failing in its responsibility to those living in FCS.

Several observations outlined in a recent [DataDENT](#) analysis of the use of nutrition data visualisation tools are also very applicable to the wider NI ecosystem. The analysis suggests that the dissemination or communication of nutrition analysis products need to be designed with the user in mind. The design of analytical communication products needs to include actionable analytics, be adapted to the decisions to be made by the targeted audience and adjusted to the data literacy of that audience.

Summary Points

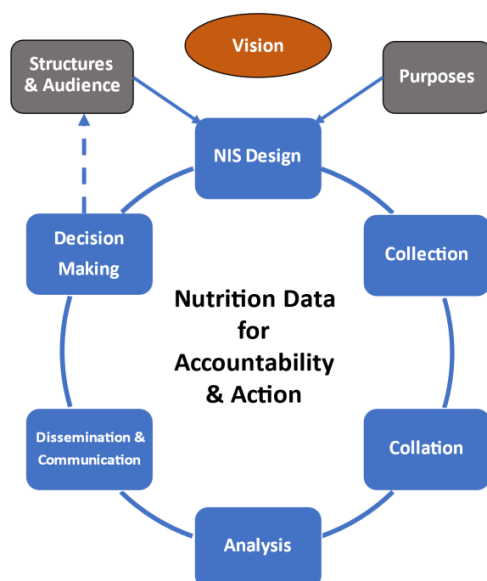
- A considerable level of effort goes into the prior steps of the data cycle however, relative to these, there is a lack of attention and investment in the dissemination and decision-making steps and there is also a lack of clarity about which decision-makers need to be influenced and the purpose of these messages.
- Rather than tailored well-presented and analysed information to help determine investments in the necessary actions, decision-makers are instead needing to seek out information and interpret it themselves which undermines the data cycle steps, ensuring accountability to affected populations.
- A NIS communication of nutrition analysis should be very clearly designed with the end-users in mind with the main objective of optimising the transfer of analysis into action.

Step 6: NIS Design

The diagnostic has found that the data which is currently collected, curated and analysed has evolved through an iterative pathway with the emergence of new tools, new priorities and institutional needs driving the evolution and development of the NI ecosystem.

Although there is more to do to improve the overall effectiveness and impact of NIS (FCS), there have been many notable successes and improvements such as the IPC AMN, SMART surveys, the Nutrition Cluster Information Management function, the ongoing introduction of NIS (FCS) nutrition indicators into government information systems and the global accountability mechanisms such as the Global Nutrition Report and SUN related information systems. This diagnostic has highlighted that in order to continue to strengthen NIS in FCS there is a need for a more strategic vision for NIS (FCS) led by a more coherent, inclusive and transparent governance system (Figure 7). The strategic vision needs to provide clarity on the purposes of the various structures, tools and analytical frameworks. The primary purpose of the NIS is to inform, influence and stimulate action to address nutrition needs in an effective, efficient and equitable manner and to be accountable to rights holders. For an NIS to be accountable for transferring analysis into action the NIS must tailor its communication to decision makers to ensure that the data cycle has the maximum impact on the quality, coverage and efficiency of the actions taken.

Figure 7– Suggested Model for a Strategic Vision



Section Six: Next steps for strengthening the NI Ecosystem and the data cycle processes

The diagnostic has used an ecosystem view to review and structure the findings. The diagnosis, supported by the stakeholders interviewed, has found that NIS (FCS) are complex, fragile and have been developed over time without a clear strategic vision and governance system for the further development and strengthening of the ecosystem. The objective of the diagnosis is to inform UNICEF, the NIS GTWG and other NIS stakeholders in developing a road map to further strengthen NIS (FCS) which will be a collective effort from local to global scale and will involve many stakeholders, NIS platforms and structures. The first part of section six deals with the ways forward for strengthening governance, leadership and accountability and the second part focusses on how the data cycle process can be improved.

Part One: Strengthening Governance, leadership and accountability

The diagnostic has found that the NIS ecosystem requires a common strategic vision, a more effective and accountable governance structure and backbone support to guide the implementation of the roadmap. It is suggested that the model for Collective Impact illustrated in Figure 8 is used to guide the development of the roadmap.

Figure 8: The five conditions of collective impact for strengthening NIS (FCS)

Figure 8 - The Five Conditions of Collective Impact for Strengthening NIS in FCS	
Common Vision	All participants have a shared vision for change including a common understanding of the problem and a joint approach to solving it through agree upon actions.
Shared Purposes and Measurement	All participants agree on purposes of NIS and hold each other accountable to remain aligned to developing their NIS to achieve the purposes by measuring results consistently across the ecosystem.
Mutually Reinforcing Activities	All participants activities must be differentiated while still being coordinated through a mutually reinforcing plan of action.
Continuous Communication	Consistent and open communications is needed across the many players to build trust, assure mutual objectives, and create common motivation.
Backbone Support	Creating and managing impact requires a separate organization with staff and a specific set of tools to serve as the backbone for the entire initiative and to coordinate participating organizations and agencies.

Adapted from the Stanford Social Innovation Review

Agree a Common Strategic Vision

The first step in the roadmap development process will be to come to a collective agreement on a common strategic vision for NIS in FCS. A suggested starting place for the development of a common strategic vision is:

“The NI ecosystem vision is to produce analyses that effectively influences responses which prevent declines and promotes improvements in people’s nutritional security in fragile and conflict affected situations. A well governed and resourced NI ecosystem empowers and enables NIS actors, especially

local and national actors to create, analyse and use data that improves response and ensures inclusive, transparent and participative oversight and, that where a lack of neutrality, objectivity and transparency place affected populations at risk, action is taken. A well-functioning NI ecosystem will encompass evaluative (e.g., needs assessment and situation analysis) and diagnostic (e.g., nutrition activity monitoring and accountability) approaches and will be resilient and shock responsive to manage the complexities and challenges that arise in FCS”.

Collective realisation of this vision will require strengthened governance, leadership and accountability at the national and global level as well as strengthened analytical and communication capabilities.

Work with clear principles

Realisation of this vision will require adherence to a set of principles to be agreed during the roadmap development process. Six potential principles are suggested as follows:

1. Be driven by a holistic analysis of the nutrition needs of affected populations
2. Be driven by the needs of local, national and international decision makers
3. Communicate analysis regularly and in ways which are impactful for decision makers
4. Reach technical consensus between analysts on the nutrition situation and minimise political or institutional influences
5. Make the best use of all relevant and available data, even where data and evidence are missing or of sub-optimal quality
6. Be open and willing to learn and adapt and update as necessary

Achieve greater collective impact

As identified in this paper, there is wide recognition of the need to strengthen governance, leadership and accountability for NIS in FCS. One stakeholder argued that a commonly held view is that "currently the governance structures that exist (GNC dashboard, IPC-AM and NIS GTWG) are made up of similar people who largely give of their time 'voluntarily' and it is unclear who has responsibility for strategy, influence and resourcing"

Collective impact on the strengthening of NIS in FCS needs a stronger and empowered governance structure to develop a common strategic vision and to hold itself and stakeholders accountable for achieving their shared purposes through mutually reinforcing activities. A governance mechanism allows continuous communication to build trust, assure mutual objectives and to create a common motivation to achieve the strategic vision. In other words, governance is the process by which vision, mission, policy and strategic plans are developed, funded, implemented, monitored and how stakeholders (including the governance mechanism/s) are held accountable. As far as possible, the governance structure should be:

1. Consensus oriented
2. Accountable
3. Transparent
4. Responsive
5. Equitable & Inclusive
6. Effective & Efficient
7. Participatory
8. Rules based

If we consider each of these requirements for good governance, it does not appear overly critical to state that governance of NIS (FCS) is not currently meeting these criteria. There is unarguably a lack of clarity on priorities for strengthening elements of the data cycle and a lack of accountability and responsiveness for situations where there is no credible nutrition analysis put forward. The current

governance system is not inclusive or participatory enough, especially regarding inclusion of national actors at global level and local NIS stakeholders at national and local level. As a result, NIS stakeholders in FCS are failing in their upwards and downwards accountability for evidence-based actions to prevent and mitigate the negative impacts of the FCS context on nutrition security and to promote positive changes in FCS populations nutritional security.

A New Governance Arrangement

To complement existing forum and mechanisms (NIS GTWG, IPC AMN), a new governance arrangement would focus on strategic direction, accountability and fundraising for NIS (FCS) and include a NIS (FCS) Global Governance Committee, a Global Support Hub (GSH), a Technical Advisory Group, Regional Support Hubs and National Coordination Mechanisms (which already exist in many countries). These are described in more detail below and presented in Figure 9.

The Global NIS (FCS) Governance Committee (NIS-GC) will provide an oversight function and will consist of representatives from the NI ecosystem. A provisional membership list would include UN agencies, Donors, Regional and National Representatives, representatives for the newly formed SUN Movement (FCAS) group, and Civil Society. The NIS-GC will ensure that the NI ecosystem establishes a common vision and systems strengthening strategy and delivers the strategy to improve nutrition security in FCS.

Specifically, the NIS-GC should be a decision-making body (as opposed to merely consultative) and be responsible for:

1. Representing NIS (FCS) stakeholder interests
2. Providing oversight of the implementation of the NIS (FCS) Strengthening Strategy and Communications Strategy to effectively achieve the vision for NIS (FCS)
3. Providing leadership on ensuring adequate human and financial resources are available to effectively implement the common vision for NIS (FCS)
4. Ensuring accountability of NIS (FCS) to rights holders and accountability of the NI ecosystem to transfer analysis to evidence-based action
5. Providing a forum for collaboration that prioritises participation, trust, transparency and inclusion.
6. Using a consensus building approach to building trust within the NI ecosystem
7. Promotes an adaptive learning approach to strengthening NIS (FCS)

It is suggested that leadership of the NIS-GC will be a shared responsibility between UNICEF and WFP. This responsibility will be to host and facilitate the NIS-GC. Chairing of the NIS-GC could be organised on a rotating basis amongst all members of the NIS- GC. Performing the secretariat roles for the NIS-GC will be one of the roles of the proposed GSH.

A **Global Support Hub (GSH)** should be established and housed within UNICEF and have the possibility of staff seconded from other organisations into the hub. The GSH will require a full-time coordinator as well as full time individuals with advanced analysis, communication and data management expertise and skills. The GSH will be responsible for developing and supporting the delivery of the NIS (FCS) ecosystem vision and strategy and will support the analytical and communication work of the Regional and Country NIS(FCS) Technical Working Groups. The GSH will also act as the secretariat for the NIS-GC.

A detailed Terms of Reference for the GHC would be agreed by the NIS-GC. Initial ideas for tasks to include in the ToR would be to:

1. Facilitate the development of a common vision and costed NIS(FCS) Strengthening Strategy, to be endorsed by the NIS-GC
2. Develop a NIS(FCS) Communications Strategy to be adapted and used at country, regional and international level

3. Be responsible for directing and overseeing the development of guidance, methods and tools related to needs assessment, activity monitoring and accountability
4. Collate information from country level to produce communications materials
5. Develop and implement an NIS(FCS) Communication Capacity Strengthening Strategy for Regional and National level NIS(FCS) TWG
6. Support country and regional data management and communication capacities.

The GSH would consult and work with and be supported by the Global Technical Working Group to achieve these tasks with each focussing on areas of comparative advantage. The current NIS GTWG may be the most appropriate forum to take on this role. In this case the GSH and NIS GTWG would collaborate and coordinate to:

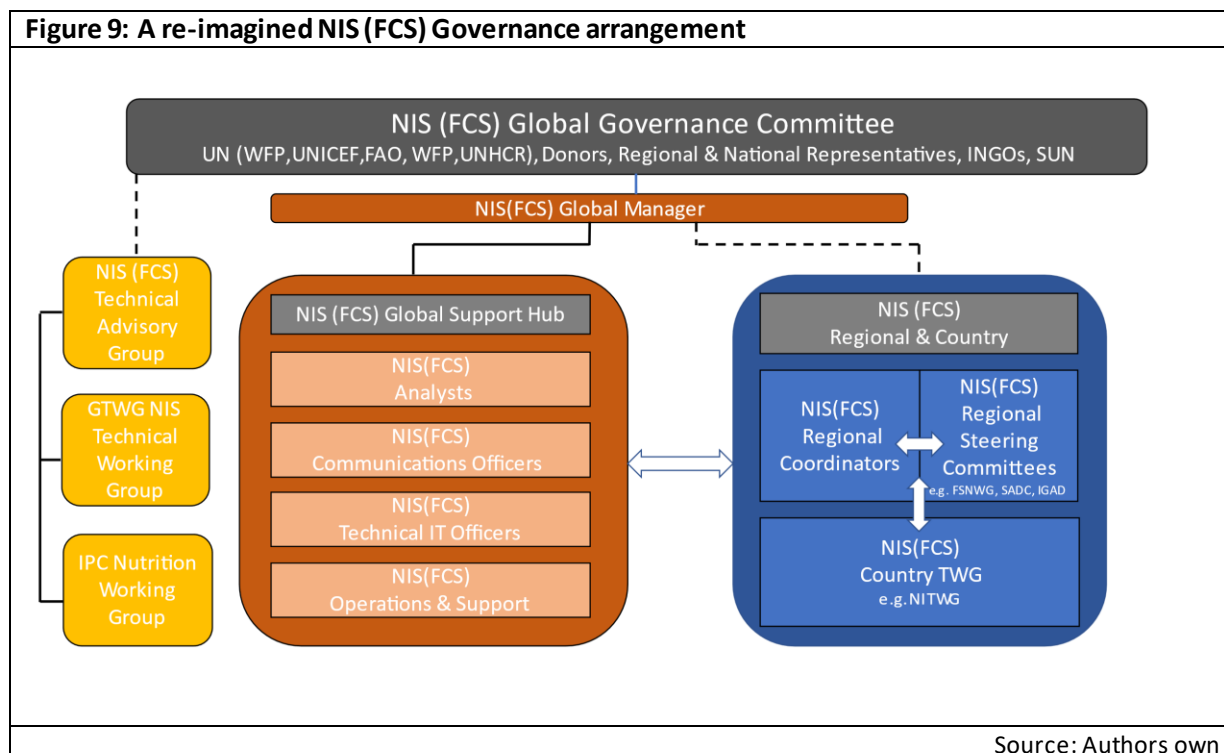
1. To develop a capacity strengthening capacity for regional and national level analytical capacity
2. To provide technical analytical support to regional and national level teams
3. To collaborate with the GHC to implement the NIS(FCS) strategy

A Regional Support Hub (RSH) connects with the longer-term vision for NIS analytical and communications capacity to be increasingly devolved from Global to National and Regional level. However, this vision represents a significant investment and needs to be developed within the context of existing NIS governance and coordination structures. This process cannot be hurried, and it is proposed therefore, that this capacity is developed iteratively starting with one RSH and covering a small number of pilot countries. The RSH should be staffed by a dedicated unit of individuals with analytical expertise and strong engagement, communication and data management skills. The RSH might be made up of individuals seconded from a variety of organisations/institutions and would be based in a UNICEF Regional Office. This first RSH would be used to learn about what works and how a future NIS (FCS) governance system might work at regional and national level.

An indicative list of objectives for the RSH would include:

1. Develop a regional governance structure with clear links to regional bodies e.g., CILLS etc.
2. Engage with National NIS governance structures and support the development of costed National NIS strengthening plans. Support national NIS governance structures to source required resources and collaboration to implement the National NIS Strengthening plan
3. Facilitate the development of a regional NIS research and learning plan to support the strengthening of NIS to:
 - Produce more insightful, holistic and useful diagnostics of nutrition needs through needs assessments, situation analysis and early warning approaches
 - Produce analysis of nutrition activities that supports decision making to improve the effectiveness, efficiency, equity and timeliness of actions being taken to address nutrition needs
 - Ensure that analysis of nutrition actions is used more effectively in diagnostic analysis of nutrition needs.
 - Significantly strengthen the accountability of NIS(FCS) to effectively influence nutrition actions.
 - Significantly strengthen the accountability of NIS(FCS) through inclusion, participation and leadership of NIS(FCS) by local, national and regional representatives
4. Facilitate the development and implement of a regional and national NIS communications strategy
5. Ensure an adaptive learning approach is used to strengthen national and regional NIS(FCS) systems
6. Ensure that NIS(FCS) systems are resilient, risk informed and shock responsive

Figure 9: A re-imagined NIS (FCS) Governance arrangement



Source: Authors own

Towards a strengthened NIS (FCS) Ecosystem strategy

The diagnostic has found that the NIS (FCS) ecosystem has developed over time in the absence of a clear strategic vision for its design. Therefore, the current understanding of the structures of the ecosystem, their linkages, purposes and roles and responsibilities is limited. Furthermore, as a series of somewhat isolated system strengthening initiatives have been implemented, many of them successfully, the ecosystem actors seem to have lost their clarity of purpose. The development of a strategic vision and systems strengthening strategy needs to be based on a collective clarity of purpose/s and a better understanding of the structure of the ecosystem in order to maximise what works and strengthen weaknesses as well as fill gaps.

1. A collective agreement on a strategic vision for NIS (FCS) should include an agreement on the purposes of NIS (FCS). The diagnosis has found that there is limited clarity and agreement on the purposes of the NIS (FCS) ecosystem. Whilst at first defining the purposes of the ecosystem may seem simple, stakeholders have struggled to express their view of the purposes. Their feedback also made it clear that there are disconnects in understanding of the purposes between different groups of stakeholders. Our desk review of the stated purposes of the most prominent structures of the NIS (FCS) ecosystem has reinforced this finding with several NIS structures not clearly stating their purposes. Others state purposes that are rather inward looking focusing primarily on the information needs of the lead organisation or upwards accountability to donors or on funding advocacy. Overall, there appears to be a lack of clarity that the overarching and anchoring purpose of an NIS is to provide evidence for evidence-based action to improve nutrition security. Two sub-elements of this overarching purpose, funding advocacy and donor accountability, seem to have taken an overly powerful prominence at the expense of other elements of the overarching purpose. The diagnostic suggests a starting point for this discussion should consider three purposes:

- Diagnostic – Needs assessment, situation analysis and early warning
- Evaluative – Activity monitoring
- Accountability

The drafting of a collective statement on the purposes of the NIS(FCS) would be the responsibility of the GSH with oversight of the NIS-GC who would validate the final consensus statement.

2. **The accountability purpose, especially downwards accountability and its links to localisation, should be a priority for elaboration in a strategy for systems strengthening.** The diagnostic has highlighted some positive progress in ensuring that NIS (FCS) are accountable both upwards to decision makers such as the government and donors and downwards to those who live in FCS and their representatives. NIS stakeholders are accountable to make sure that data collected and analysed effectively influences evidence-based decision making. Localisation is inextricably linked to accountability. However, the diagnosis has not been able to find any NIS accountability or localisation strengthening strategy, road map or plans of action. The process of developing and implementing an NIS (FCS) wide strengthening strategy should include a strategy for accountability and localisation.
3. **NIS (FCS) stakeholders should ensure that they are much more accountable to donors, governments and rights holders in FCS for the most effective, efficient, equitable and timely nutrition actions.** Of note is the seemingly lesser attention given to the evaluative - activity monitoring purpose. A strategic vision for the future of NIS (FCS) must consider the upcoming challenges of increasing needs for nutrition actions against a backdrop of decreasing resources. The NI ecosystem can only do this by investing in better activity monitoring analysis capacities to become more effective and to justify future investment.
4. **NIS-GC and the GSH should commission a mapping of the structures of the NIS (FCS), their purposes, roles and responsibilities and their linkages.** The mapping should pay special attention to intersectoral and interdisciplinary linkages. It will also be important to map the structures capacity building, technical assistance and coordination functions and activities. The mapping should also include description of how these structures are currently addressing the localisation and nexus agendas and their vision for the future for these two issues. These findings should be reflected in the strategy with clear statements on how to build on progress.

Cross Cutting Systems Strengthening Issues

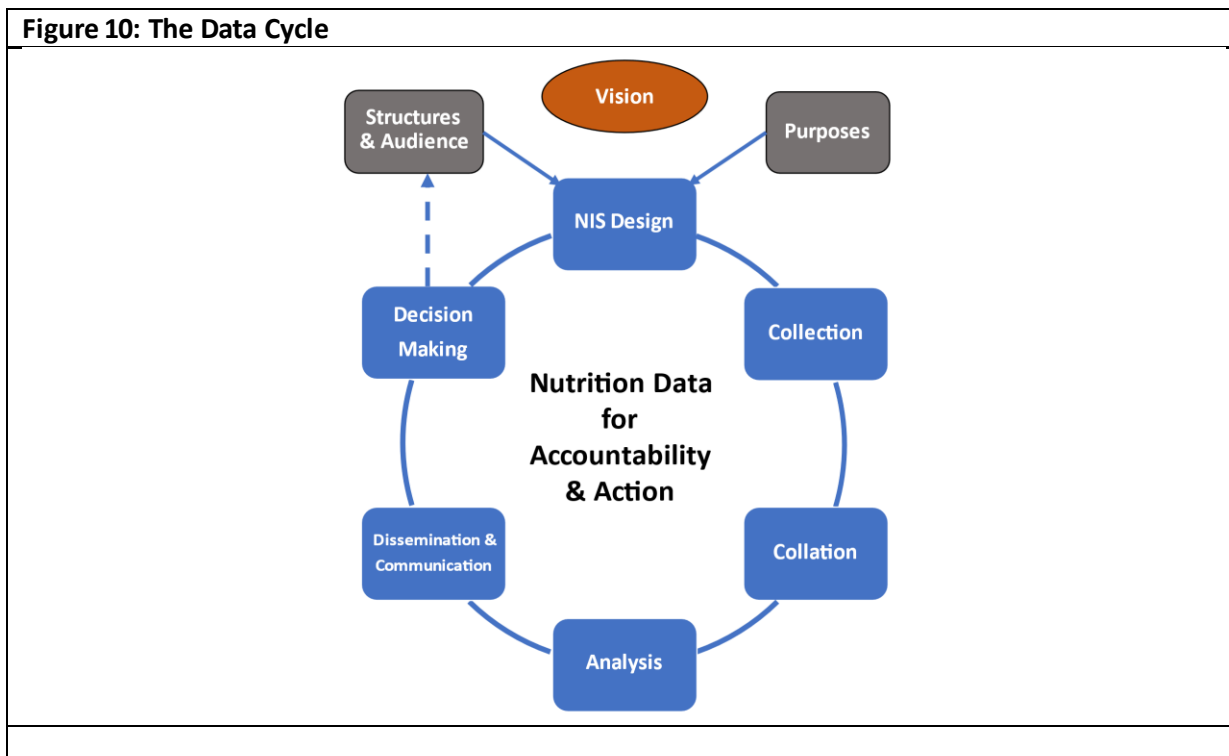
5. **The NIS (FCS) strategic vision and Systems Strengthening Strategy should explicitly address the issue of localisation.** The diagnosis found that localisation in terms of inclusion, participation and leadership in the NIS data cycle has had some successes but once again these successes have been achieved in pockets and without a collective strategy for localizing NIS (FCS) at Global, Regional, National or Local level. This 'patchy' progress suggests a need to learn from what has worked and not worked. A collective development of a strategic vision and systems strengthening strategy should pay special attention to ensuring that local stakeholders are included, participate and lead this strategic development process at all levels of the ecosystem.
6. **The NIS (FCS) vision and strategy needs to integrate 'humanitarian' and 'development' NIS approaches.** In the framing and writing of this diagnostic there has been considerable debate about the differences and overlaps of the development NIS and humanitarian NIS in FCS. These debates also reflect wider discussions about the meaning of a humanitarian and development nexus. This diagnostic paper has made suggestions to bring the two together as FCS contexts which are characterised by shocks and crises are forecast to become more frequent, complex and severe. Therefore, development objectives for strengthening NIS systems are crucial for the future of FCS. The fragility of FCS contexts and the pace of change also means that NIS no matter how strong and developed need to be resilient, adaptable, shock responsive and agile. The humanitarian NIS tradition brings experience in managing NIS to analyse nutritional needs and taking action to address the needs in complex and fragile environments. The development NIS is

more geared towards informing long-term nutrition policy and strategy development and monitoring implementation and achievement of targets. Both development and humanitarian actors share localization objectives. Stakeholders and the desk review highlighted numerous successes and ongoing efforts to combine NIS strengths across the nexus²⁶ yet no clarity was found on the vision for strengthening NIS across the humanitarian and development nexus.

7. **The NIS Strategy should have an objective of further strengthening NIS (FCS) to be resilient, risk informed, and shock responsive.** A resilient NIS (FCS) should be able to absorb, adapt and transform itself in line with the changing context in anticipation of an increased risk of more shocks, crisis and accompanying complexity to assess needs and implement evidence-based activities. Risk informed NIS are designed to be appropriate for the most likely risks. An NIS needs to be agile and shock responsive to deal with unexpected crisis and to changing severity and geographic and temporal impacts of the shock. A sub-set of this recommendation involves the resilience of NIS (FCS) when a government becomes a party to the conflict or is unwilling or unable to lead NIS to contribute to addressing the needs of those they represent. In this case NIS (FCS) should apply the Responsibility to Protect doctrine to adapt NIS to continue to be accountable to the rights holders in FCS.
8. **NIS Stakeholders should develop a protocol to govern data and analytical transparency, sharing and use.** This can be developed by the GSH and the NIS GTWG to overcome the current barriers described in this diagnostic paper. A section of the strategy should be devoted to key elements of the protocol.

Part Two: Strengthening the six data cycle processes

Section five of this diagnostic identifies the current strengths and weaknesses of the processes of NIS (FCS) organised using the data cycle. The diagnostic has found that there is a need to strengthen all 6 parts of the data cycle as shown in Figure 10 below.



²⁶ Examples of these successes and efforts include the ongoing integration of the IPC or CH into Government systems with adaptation of those systems to take into account the FCS context and the integration of nutrition indicators into DHIS2.

The diagnosis found five main issues that could be strengthened in the data cycle from collection through to use of analysis. As follows:

Issue One: Maximise coverage and availability of good enough estimates of nutrition status for needs assessment and accountability.

- 1. Develop guidance, tools and approaches to maximise the coverage and availability of nutritional status data.** Prioritise availability of nutritional status estimates for analysis over a focus on quality of the estimates. With a particular focus on estimating nutritional status for the hardest to reach and marginalized populations who are assumed to be most vulnerable and have more severe needs.
- 2. Optimise the timing of data collection of nutrition status data collection processes to be most appropriate for the context.** Optimum timing of data collection will be related to seasons and may be different to optimal timing for food security assessments. Optimal timing may also be different for rural and urban areas and for in IDP/refugee camps.
- 3. Planning of nutrition status data collection exercises should use a context specific approach to decide on priorities of types of nutritional status data to be collected and priorities for population groups.** Measures of wasting amongst children under five years of age and pregnant and lactating women are not always the most important priority depending on context. Deliberate and explicit decisions need to be made on priorities at each round of data collection.
- 4. Improve the nutritional needs nowcasting methods, tools and analytical frameworks.** Nowcasting has been used extensively during the pandemic and continues to be used in needs assessments. The better use of data on the determinants of nutritional status would considerably improve the nowcasting process (see below). Lessons learning exercises and evaluations should be conducted after every time nowcasting is used to improve the process. Better nowcasting analytical methods would enable and improve confidence in needs assessments by
 - Allowing timing of assessments to be optimised and the use of nowcast estimates of needs to be used in subsequent humanitarian cycle processes such as the HNO/HRP.
 - Allow more flexibility in the assessment cycle to alternate or stagger assessments of different priority types of nutrition status or priority population groups
 - Allow analysts to fill inevitable gaps in the availability or coverage of nutritional status estimates by nowcasting from historic or adjacent assessments.
- 5. Improve the methods, tools and analytical processes for forecasting or projecting nutritional needs.** Draft guidance already exists to use more context specific incidence conversion factors. This guidance should be released in draft from accompanied with an evaluation plan to learn about the use of more context specific incidence factors. Better analysis of determinants or nutrition status has considerable potential to improve the forecasting and projection of nutrition status.

Issue Two: Significantly improve the collection, collation, analysis and use of data on the determinants of nutritional status for needs assessment, activity monitoring and accountability purposes.

- 1. Develop agreements with other sectors and disciplines to collect, collate and share data on the determinants of nutrition status.** As a multisectoral issue, a good proportion of nutrition status determinants data is collected by sectors allied with nutrition, in particular, Food Security, WASH and Health. Nutrition also contributes data to other sectors information systems. Currently most of the data used for nutrition analysis is chosen using a convenience approach i.e., nutrition use

data that is already collected and available from other sectors. There are opportunities already being explored to make this intersectoral sharing and use of data more deliberate so that agreements are reached to adapt sectoral information systems to better contribute to intersectoral analysis. This process will need to happen at global and national level through a linked process.

2. **Develop tools, methods and analytical frameworks to better collect, analyse and use nutritional status determinants data.** Determinants data can significantly improve the needs assessment and associated nowcasting and forecasting or projections of nutrition status. The data can also significantly improve estimates of other nutritional needs not just those estimated based on nutritional status. For example, a better understanding of household care practices would allow better estimates of needs for MIYCN services. Determinants data are also key to understanding the performance of nutrition activities. For example, better analysis of the effective coverage of nutrition services such as CMAM or MIYCN services will allow decision makers to take action to improve the services effectiveness, efficiency, equity and timeliness. For the optimum use of data on determinants of nutrition needs, NIS stakeholders would need to have a higher tolerance for the use of qualitative data that may have been acquired through less rigorous sampling methods than those employed in SMART surveys especially where determinant data have proven or plausible linkages with nutritional status.

Issue Three: Develop methods, tools, platforms and analytical frameworks to conduct more real time monitoring of changes in nutritional needs.

1. **Establish a real time monitoring system (RTM) for regular updating of nutrition needs estimates.** FCS are characterised by a volatile environment so needs assessment estimates are very rapidly out of date. Assumptions used to forecast or project future severity and magnitude of nutritional needs therefore need to be regularly updated. RTM for nutrition should monitor the assumptions used to project future needs e.g., access for nutritional services will worsen over the projection period and monitor changes in the determinants of nutritional status (for example, if women's dietary consumption is rapidly worsening as children are given the priority for limited food).

Issue Four: Significantly increase the analytical capacity of NIS (FCS) at national, regional and global level.

1. **Establish Technical Support Hubs for NIS (FCS) with analytical capacity at Regional and Global level and increase analytical capacity at national level.** Using lessons learnt from VAM, invest more human and financial resources in dedicated analytical capacity at all levels of the NI ecosystem (see Governance recommendations above). Currently the NI ecosystem has few dedicated resources dedicated to the NIS (FCS) data cycle at all levels. Investment has been evident in the development of the SMART platform and increasingly in the IPC AMN capacity, but significant gaps remain in ensuring that a more holistic and strategic analytical capacity is in place. Gaps remain in the analysis of determinants data, the analysis of nutrition actions, nowcasting and projecting and real time monitoring.

Issue Five: Significantly improve the communication and dissemination capacity of NIS (FCS) at all levels

1. **Invest in developing communications and dissemination plans for all levels of the NIS (FCS) ecosystem to ensure that analysis effectively influences decision making about actions to be taken to address nutrition needs.** Communications plans should take into account the purposes of the NIS (FCS), audiences, communication modalities and timeliness of communications. The plans

should be developed with the decision makers to ensure that the plans are decision making needs based.

2. **Invest in dedicated NIS (FCS) communications human resources at all levels.** The diagnosis has found very few human resources specifically dedicated to the communication and dissemination of NIS analysis. As a result, stakeholders are united in highlighting the weakness of the NIS ecosystem communications capacity. Data and information management skills are available, particularly in the Information Management capacity of the Nutrition Cluster but the development of databases, spreadsheets, and dashboards are only a first step in effectively analysing data and communicating it to influence decision making.

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Annex 2: Key Informants Interviewed (In alphabetical order)

1. Abi Perry - WFP Director of Nutrition
2. Alessandro Iellamo – FHI360 Senior Technical Advisor, Emergencies, Nutrition & Food Security Division
3. Alexa Humphreys – GNC Technical Alliance Assessment Advisor
4. Alina Michalska UNICEF and co-chair of the NIS GTWG
5. Anna Ziolkovska -GNC Deputy Coordinator
6. Douglas Jayasekaram –IPC, FAO – ESA-OER
7. Emma Massey – FCDO Nutrition Advisor
8. Eric Branckaert- WFP Chief Assessment & Field Monitoring
9. Erin Boyd - USAID Nutrition Advisor
10. Esther Basquest- IMC Canada
11. Eva Lediman- CDC, Lead Global Rapid Response Team (Temporary)
12. Hassan Ali Ahmed- Action Against Hunger Associate Director of Nutrition, Global Lead for SMART Initiative and co-chair of the NIS GTWG
13. Jose Lopez - IPC Global Programme manager
14. Lucy Maina- UNICEF Kenya Nutrition Information Officer
15. Megan Gayford- UNICEF Nutrition Specialist, Emergency Nutrition
16. Oleg Bilukha – CDC, Associate Director for Science
17. Saul Guererro Oteyza - UNICEF Senior Advisor, Emergency Nutrition
18. Simeon Nanama - UNICEF WACRO Regional Nutrition Advisor
19. Sophie Chotard - FAO ESA-OER
20. Stefano Fedele – GNC Coordinator

Annex 3: Main elements of the NI ecosystem for FCS

Country-level Collation and Analysis Systems

Integrated food security Phase Classification (IPC) acute malnutrition (AMN)

The IPC AMN is a global system for classifying the severity and magnitude of acute malnutrition and identifying its key drivers in areas where acute malnutrition is of concern. This is one of three IPC classification systems, the others being Acute Food Insecurity (AFI) and Chronic Food Insecurity (CFI). The IPC AMN is a multi-partner initiative, supported by a global unit within the Food and Agriculture Organisation. Technical Working Groups (TWGs) are established at country-level to carry out data collation and analysis following the IPC AMN global methodology. Analysis includes an estimation of current and projected severity and magnitude of needs. Country reports and infographics are produced and shared in-country and internationally via the [IPC website](#).

The stated purpose of the IPCAMN is to “identify the need for action to reduce acute malnutrition through the scale-up of acute malnutrition treatment and other interventions as well as prevention for affected populations”²⁷. The intended use of IPCAMN information is to guide strategic decision-making, raise awareness and advocacy, and inform strategic response planning for nutrition at country and global levels.

Cadre Harmonisé (CH)

CH is a similar system to the IPC that provides a combined analysis of acute food insecurity and acute malnutrition for countries in the Sahel and West Africa region. The methodologies of the IPC and CH have been harmonised. The stated purpose of CH is to provide “a set of functions and protocols for analysing the severity of acute food and nutrition insecurity to inform decision-making, and to provide appropriate urgent responses.” Results are shared in-country, with the ECOWAS Regional Food Security Reserve and on the [CH section of the IPC website](#).

Nutrition Cluster Nutrition Information System (Global and National)

The Global Nutrition Cluster (GNC) currently supports nutrition cluster/sector coordination mechanisms in 63 countries. One of the GNC functions is to strengthen the technical and coordination capacities for nutrition in countries, based on the needs of affected populations. This is to enable countries to adequately prepare for, respond to, and recover from, shocks. Nutrition information management is a key part of the Nutrition Cluster/Sector role. National Nutrition Clusters/Sectors perform data analysis for needs assessment on an annual basis or more regularly based on the country context and needs. This process is typically led by in-country technical working groups, nutrition cluster coordinators, nutrition cluster information managers (IMOs) and/or strategic advisory groups, to provide a current nutrition status assessment, including an estimation of ‘people in need’, coverage of key nutrition interventions, current capacity at partner level, funding required, and funding received. This informs the country’s Humanitarian Needs Overview (HNO) and Humanitarian Response Plan (HRP) and helps to monitor and evaluate humanitarian programme performance. National nutrition cluster information is summarised and shared via dashboards and snapshots both in-country and globally via the [Humanitarian Response website](#) as well as through the [GNC reports and website](#). Unlike up until 2016, the GNC no longer has a separate information management (IM) strategy as IM support has been standardised and incorporated into the overall 2022- 2025 GNC Strategy. The GNC has developed a nutrition cluster [information management toolkit](#) which aims to provide a

²⁷ Currently the purpose of the IPC AMN appears to be primarily to monitor needs based on acute malnutrition status to inform plans about the treatment of acute malnutrition.

comprehensive package of practical tools to support nutrition cluster IMO in their work as well as an [IM competency framework](#) (2021) and a generic IM job description (to be finalized in 2022)²⁸.

Country nutrition information platforms

Some countries have developed their own national nutrition information platforms²⁹. For example, Tanzania, Myanmar, Pakistan, and more recently, Ethiopia where the Federal Ministry of Health coordinates the nutrition-focused dashboard named the 'Unified Nutrition information System for Ethiopia' (UNISE). The purpose of UNISE is to support the implementation and monitoring of the National Nutrition Plan by reporting on indicators not captured in the Health Management Information System (HMIS). Many of these systems collate data and analysis from the systems listed above. Most FCS countries are also leading and participating in the IPC AMN, CH, and Cluster Information Management Systems described above.

Primary Data Collection Tools

Demographic and Health Surveys

Demographic and Health Surveys (DHS) are nationally representative household surveys which are purposed to provide data on a wide range of monitoring and impact evaluation indicators in the areas of population, health and nutrition. There are two DHS surveys that follow international methodologies: 1. Standard surveys that have large sample sizes and are conducted around every three to five years to allow comparisons over time, and 2. Interim surveys that collect information on key performance indicators that are conducted between rounds of standard surveys and that use smaller sample sizes. Results are collated, analysed and shared at national and global levels. DHS analysis is most often used for long term planning, accountability, and policy issues at national and global levels.

Multiple Indicator Cluster Surveys (MICS)

The [Multiple Indicator Cluster Survey \(MICS\)](#) is an international household survey programme developed and supported by UNICEF that aims to support the monitoring of progress towards national goals and global commitments (such as the SDGs) relating to the situation of children and women. MICS is now in its sixth round and includes 200 indicators to provide a key source of data on child protection, early childhood education, child health, and nutrition. Surveys include five questionnaires that are carried out by national teams, with support from UNICEF including for households; women 15-49 years of age; men 15-49 years of age; children aged 5-17 years and under five years. MICS analysis is most often used for long-term planning, accountability and policy issues at national and global levels.

District Health Information System (DHIS)

[DHIS 2](#) is an open-source, web-based platform commonly used in countries as a health management information system (HMIS). Supported by DHIS 2 experts from the [Health Information Support Programme \(HISP\)](#) Ministries of Health and partner organisations develop their own country-specific version of the software to support the national information system to be the 'owner' of the system

²⁸ It is not clear to what extent the Information Management capacity of the cluster addresses the nutrition activity monitoring purpose.

²⁹ To date there has been no global mapping of country-specific nutrition information systems, although a snapshot and cross-section of these systems have been described in a report to the SUN Movement (N4D 2021).

and the data contained within it. DHIS 2 commonly supports routine health reporting at national, regional, district, facility, and community levels.

Government, UN and NGO needs assessment and monitoring systems

In all FCS, nutrition stakeholders maintain their own systems for needs assessment, activity monitoring, and the communication of the findings for accountability and decision-making purposes.

Standardized Monitoring and Assessment of Relief and Transitions (SMART)

Launched in 2002 by a group of humanitarian practitioners and organisations, the SMART Survey methodology is widely accepted for use in all settings (development, emergency, and displaced populations). The methodology was developed to improve the monitoring, reporting and evaluation of humanitarian interventions by offering a standardised methodology that focuses on ensuring high-quality data by controlling the quality of data collection, entry, and analysis. SMART surveys are carried out by partners in defined geographic areas to provide 'gold standard' current status assessment of nutrition outcomes, based on anthropometric (weight for height/ length and mid-upper arm circumference) as well as mortality data. Additional indicators such as immunisation status, micronutrient supplementation status (including vitamin A supplementation), infant and young child feeding (IYCF) practices, household food security status, and morbidity information are also collected.

Since 2009, the GNC appointed Action Against Hunger Canada as the project convener for SMART for all agencies' needs with regard to the methodology. SMART is an active member of the GNC at both global and country levels. Since June 2013, the Initiative has established a bi-annual Global Assessment Working Group forum which provides a technical space for nutrition stakeholders to address field challenges, share technical updates, lessons learned, and good practices, as well as advancements in related assessment technology and software.

Technical Assistance & Guidance.

Global Technical Working Group on Nutrition Information Systems

The [Global Nutrition Cluster Technical Alliance \(the Alliance\)](#) is led by UNICEF and World Vision and supported by a leadership team that includes Emergency Nutrition Network (ENN), the GNC Coordination Team, and Action Against Hunger. Its stated purpose is to support nutrition practitioners to improve the quality of nutrition preparedness, response and recovery, by enabling and providing coordinated, accessible and timely technical support through multiple channels where gaps exist. As part of this purpose, the Alliance brings together key experts specialising in specific areas in Global Thematic Working Groups (GTWGs) to develop consensus-driven interim guidance or expert advice for emerging technical areas and/or challenging contexts.

The Nutrition Information System (NIS) GTWG came together in 2019 and currently has 17 members. The co-chairs are Action Against Hunger Canada and UNICEF and members include IMC, Valid International, Save the Children, WFP, CDC, and the GNC. The GTWG currently has three taskforces; two providing contextualised, coordinated technical NIS support to Yemen and Ethiopia country teams respectively and one looking at predictive analytics. Activities for the GTWG are outlined in the GNC 2022-2025 work plan. The GTWG works closely with the broader GNC and has strong links to the SMART initiative, particularly through Action Against Hunger Canada.

IPC AMN Working Group

The IPC AMN Working Group, established in 2015, works under the IPC Technical Advisory Group (TAG), which reports to the IPC Steering Committee. Its members include Action Against Hunger, Care, UNICEF, CDC, GNC, FAO, FEWS NET, ECHO, Save the Children, UCL, WHO, the Food Security Cluster and the Permanent Interstate Committee for Drought Control in the Sahel (CILSS). The group links to other working groups within the IPC including a Food Security Working Group. When cross-cutting issues arise (such as famine warnings), the AMN Working Group and Food Security Working Group work together to ensure harmonisation.