

Digital Food and Nutrition Security Dashboard

Technical report



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About LFSP: The Zimbabwe Livelihoods and Food Security Programme (LFSP), Agriculture Productivity and Nutrition Component (APN) is managed by the Food and Agriculture Organisation of the United Nations (FAO), with the aim of contribute to poverty reduction through increased incomes for a target 250,000 smallholder farming households. The programme is being implemented in four provinces covering 12 districts as follows: Mutasa, Mutare, and Makoni in Manicaland; Guruve, Bindura, Mazowe and Mt Darwin in Mashonaland Central; Kwekwe, Gokwe North, Gokwe South and Shurugwi in Midlands and Zvimba in Mashonaland West provinces. FAO is in partnership with three NGO consortia led by Practical Action, Welthungerhilfe and World Vision International, two Strategic Technical partners i.e. IAPRI for policy influence, HarvestPlus for biofortification, three Commercial Banks, 1 Wholesale Facility - the Zimbabwe Microfinance Fund (ZMF), 5 Microfinance Institutions (MFIs) and the USAID managed DCA Facility. To date the LFSP is funded for two phases to the tune of £72.4m.

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1. Introduction

The past few years have demonstrated why there is an urgent need to always have readily accessible information on the food and nutrition security situation in Zimbabwe. The unavailability of more complete information on the food stock and use position (including maize), and information on humanitarian assistance efforts and their effectiveness often result in speculation and politicization of food security issues to the disadvantage of affected people and the country's reputation as a whole. In such a situation, those with the ability to assist or mitigate the food and nutrition insecurity situation are hindered to offer their assistance. Thus, the value of information access cannot be overemphasized. As such, for right decisions to be made quickly, at the right time and place, policymakers and humanitarian agencies need information systems that can quickly guide and help them to respond to food security emergencies with corrective measures and actions. Therefore, to provide food and nutrition security information and bridge the information gap, a Digital Food and Nutrition Security Dashboard (DFNSD) is being proposed. The dashboard aims to help the Government and development partners to effectively assess the country's food security situation.

The dashboard will bring together data from diverse sources and provides insights into the different aspects of food systems using data visualization tools thereby allowing users to understand the status of food and nutrition security in a more comprehensive way. The overall objective of the proposed digital food security dashboard is to improve reporting, communication of, and access to food security information. With the specific objectives being to facilitate the provision of updates on the prevailing food security situation across the country as well as relief food implementation and distribution activities. According to the Food and Agriculture Organisation of the United Nations (FAO), the food and nutrition security dashboard should at least contain the following broad features:

- a. Information on the availability of food;
- b. Information on the stability of supplies;
- c. information on constraints regarding access to supplies of food;
- d. information on the biological utilization of staple foods;

2. Existing Food and Nutrition Security Frameworks in Zimbabwe

In Zimbabwe there are a number of food security frameworks in place to monitor and track the food security situation in the country. These frameworks are operated by both government and development partners and these includes; the Famine Early Warning Network (FEWSNET), WFP food security framework, the FAO food security framework and government initiated food security frameworks such as the Crop and Livestock assessment and the Zimbabwe Vulnerability Assessment Committee (ZimVAC) framework

2.1. The Famine Early Warning Systems Network (FEWSNET)

The Famine Early Warning Systems Network is a food security framework operated by the United States Agency for International Development (USAID) to monitor food needs of vulnerable people and to prevent famine related disasters. FEWSNET carries out vulnerability assessment in Africa, Latin America, Caribbean and Middle East at regional and country level. The framework seeks to provide timely information on food shortages, identify populations at risk because of disruptions in food availability and access. FEWSNET provides evidence-based analysis to governments and other relief agencies.

FEWSNET publicly report on conditions in the world's most food-insecure countries and their reports are produced monthly and contains maps detailing current and projected food insecurity areas, alerts on emerging or likely crises. The framework also provides access to data, learning, and analysis of the underlying dynamics of recurrent and chronic food insecurity and poor nutritional outcomes, to improve early warning and better inform response and program design¹. However, FEWNET does not have ready infrastructure in place for field data collection and relies on government infrastructure and other private players for data collection. FEWSNET uses the Integrated Phase Classification (IPC) to classify households and areas according to a five-phase scale. The classification is based on a convergence of available data and evidence, including indicators related to food consumption, livelihoods, malnutrition and mortality². Their reports are published as monthly bulletins that gives insightful trend analysis of the food security status.

2.2. World Food Program (WFP) Food security framework/Vulnerability Analysis and Mapping (VAM)

The World Food Programme (WFP)'s food security analysis framework is commonly known as the Vulnerability Analysis and Mapping (VAM)³. This framework allows WFP to provide decision makers with actionable food security information for each country in which it is implemented. The framework tracks and analyse economic, geospatial and household vulnerability data to provide a picture of the food security situation on which to base the design of its interventions. This framework seeks to provide a credible and timely evidence for tracking hunger and malnutrition in Zimbabwe. WFP information and actions consistently generate insights and knowledge needed to make Zimbabwean people hunger free⁴.

The framework combines traditional methods of assessment with advanced and emerging technologies, to be able to identify food insecure populations around the world, and to establish the underlying causes of food insecurity. It seeks to identify food insecure or vulnerable people, quantifying them, identifying

¹ <u>https://fews.net/about-us</u>

² <u>https://fews.net/IPC</u>

³ <u>https://www.wfp.org/food-security-analysis</u>

⁴ <u>https://documents.wfp.org/stellent/groups/public/documents/ena/wfp282165.pdf</u>

their location and the underlying cause of their food insecurity and determine how the situation is likely to evolve.

In order to collect food security data, WFP make use of a mobile Vulnerability Analysis and Mapping, (mVAM) tool. This tool uses mobile technology such as SMS, Interactive Voice Response (IVR) or live calls to reach vulnerable populations and track food security trends in real-time⁵. In Zimbabwe, WFP started using the remote phone-based data collection and food security monitoring in 2016. Survey respondents are asked a series of short questions on coping strategies used, prices of main food commodities, and their perception about the food security situation in their communities. In implementing the framework; WFP works closely with the Government of Zimbabwe, UN partners and NGOs to inform policies and programmes adopted to fight hunger in different circumstances.

Data gathered through mVAM tends to be geographically representative as a target sample size is set and will determine the level of reporting for the results. Mobile Vulnerable Analysis and Mapping (mVAM) toolkit identifies respondents by randomly calling people through mobile phone user database of those who would have volunteered to take phone surveys and asking respondents if they agree to a follow-up phone survey⁶. After data has been collected, analysts will run statistical tests to detect statistically significant changes between data collection rounds.

The framework makes use of the Food Consumption Score (FCS) which is associated with household food access and is usually used as a proxy for household food security. Food consumption indicators are designed to reflect the quantity and quality of people's diets. The FCS is a measure of dietary diversity, food frequency and the relative nutritional importance of the food consumed. A high FCS increases the probability that a household's food intake is adequate.

2.3. Government of Zimbabwe food security frameworks

The Government of Zimbabwe through its various government departments and agencies have their own food security frameworks namely the Zimbabwe Vulnerability Committee (ZimVac) and the Crop & Livestock Assessment. The crop and livestock assessment provides an assessment on the progress of the cropping season in relation to the national agriculture and food security targets ⁷. The framework tracks indicators such as crop production, meteorological, livestock production & health situation and cereal sufficiency. The framework makes use of the extensive network of agriculture extension officers at

⁵ <u>https://mvam.org/info/methodology/</u>

⁶ Ibid

⁷ <u>https://reliefweb.int/report/zimbabwe/special-report-faowfp-crop-and-food-security-assessment-mission-zimbabwe</u>

provincial, district and ward level; the data provided by the extension officers forms the basis of the assessments.

On the other hand, the ZimVAC framework is coordinated by the Food and Nutrition Council (FNC), through its food and nutrition committees at provincial and district level. FNC coordinates and provides a platform for interaction among relevant government ministries, development partners and Civil Society Organisations. The ZimVAC assessment is usually carried out in all 60 rural districts in Zimbabwe and focuses on estimating the population likely to be food insecure and the severity of food insecurity, assesses the nutritional status of children who are 6-59 months and describe the socio-economic profile of rural households. Development partners such as Food and Agriculture Organisation (FAO), Famine Early Warning System Network (FEWSNET) and World Food Programme (WFP) also provides technical and logistical support for the framework.

2.4. FNC Integrated Food and Nutrition Security Information System (FNSIS)

FNC also developed an Integrated Food and Nutrition Security Information System (FNSIS) which comprises of three components, a document management system and two data management systems. An electronic structure of the FNSIS was developed which initiates the collection of secondary data on food and nutrition security in Zimbabwe and assembling it into one repository and among its key capabilities is documents search, editing history and security. The data management system can archive data aggregates, analyse them and present analysis outputs in selected dashboards. Multiple data entry channels are available which also include direct manual data entry, electronic data importation and near real time data capture via tablets and mobile phones. The dashboards are versatile and can be customised to present graphs, charts, pictures, maps and or videos.

3. Standard practice in setting up Digital Food and Nutrition security dashboard (DFNSB) frameworks

As a result of the different food security systems in place and different methodologies; there are a lot of information gaps that need to be addressed and come up with one consistent and coherent message about the status of food security in Zimbabwe. Due to the lack of sufficient cooperation and collaboration, food security systems in Zimbabwe appear to be competing for the same information sources and same users of the results. Thus, the existence of parallel systems of tracking food security gives mixed messages to stakeholders. According to the Food and Agriculture Organisation handbook, a food security dashboard should be attached to a national food security committee which integrates at decision-making levels, with representatives from the main technical organizations being responsible for the food security

assessments⁸. Targeted users of the food security dashboard are policy makers, who need quick access to understandable information about their food security outcomes.

The different platforms track different indicators and their units of measurements differs hence there is need to unify the frameworks for tracking and monitoring food insecurity. Because of the different and uncoordinated food security surveys undertaken by diverse stakeholders, the country has a huge repository of data on the various dimensions of food security, however there is need to identify and consolidate the various indicators to be included in a national food security system.

The food and nutrition security dashboard should define and describe food systems by summarizing the drivers, components, and outcomes of food systems⁹. The food and nutrition security dashboard is envisaged to serve the following purposes; provide a basis for developing initial theories on the level of vulnerability and food insecurity, the causes and effects of both vulnerability and food insecurity and providing a way of visualizing the relationships among factors that affect food and nutrition security, which is helpful during data collection and analysis¹⁰.

The dashboard is expected to be capable of breaking down the food system into six areas of focus namely food supply chains, food environments, individual factors, consumer behaviour, diets and nutrition, and drivers. These areas will be further broken down into subgroups¹¹.

- The food supply chain includes all the steps needed to produce and move foods from field to fork.
 These steps consist of agricultural production, storage and distribution, processing & packaging, retail and marketing, among other factors.
- b. The food environment is where consumers interact with the food system for the purpose of acquiring and consuming food. The food environment includes physical places, like stores or markets where people buy food. It also includes social, economic, and cultural factors. Food availability and affordability; safety, quality convenience; and advertising are all part of the food environment. These characteristics of the food environment affect diets by influencing the way people access foods.
- c. Individual factors include a person's economic status, thought process, dreams and aspirations, and overall life situation. These factors all affect what foods a person buys and eats. A person's income determines what foods are affordable whilst individual factors also influence how people interact with their food environment and, ultimately, what they choose to buy and eat.

⁸ <u>http://www.fao.org/3/X8622E/x8622e06.htm#TopOfPage</u>

⁹ https://foodsystemsdashboard.org/data-sources-and-methodology

¹⁰ <u>https://documents.wfp.org/stellent/groups/public/documents/manual_guide_proced/wfp203208.pdf</u>

¹¹ <u>https://www.devex.com/news/google-maps-for-food-systems-new-dashboard-aims-to-aid-decision-making-97420</u>

d. Consumer behaviour includes people's decisions about what kinds of foods they choose to eat, as well as how people prepare, store, eat, and share food with others in their households. The food environment and individual factors also affect consumer behaviour.

A sound food security and nutrition monitoring system should be simple, user-driven, based on existing institutional structures (which increases the capacity for analysis and interpretation) and has the commitment of the relevant decision makers who will use the information in planning and policy design. Tracking deviations in implementing the food security monitoring systems using this criteria helps to reorient their activities towards the ultimate goal of forming informed food security decisions¹².

3.1. Example of food and nutrition security dashboard: The Arab Food Security Monitoring framework

The Arab Food Security Monitoring framework is mechanistic as all indicators are set and distributed around a core pillar and across four food security dimensions with the interpretation of results following a similar structured approach¹³. The core indicator gives an overall picture of the prevailing food security and nutrition outcome and the four (4) food security dimensions to highlight the contributing factors. The outcome of the grouping all indicators in the framework helps in tracking food security at different spatial and temporal levels;

Pillar	Description	Indicator description	Short Name
Core	The Core pillar indicator is an	Prevalence of	Undernourishment
indicators	outcome indicator that provide an	undernourishment%	
	overall picture of the prevailing	Prevalence of	Food insecurity
	food security situation. It allows for	moderate or severe	
	assessment of the type of food	food insecurity	
	insecurity being observed which	Prevalence of obesity	Obesity
	usually translate into one form or	in the adult population	,
	risk of malnutrition—	(18 years and above)	
	undernutrition (low caloric intake),		
	nutrient deficiency (low nutrients		
	intake) or over nutrition (excess		
	caloric intake).		

Architecture of the Arab Food Security Monitoring framework

¹² <u>http://www.bioline.org.br/pdf?nd0</u>5026

¹³ <u>https://www.unescwa.org/sites/www.unescwa.org/files/uploads/tracking-food-security-arab-region-summary-english.pdf</u>

Food	The availability dimension	Primary wheat yield as	Yields
availability	indicators explore the supply side of	a percentage of	
Indicators	food as they look into its physical	potential achievable	
	inflows and outflows. Indicators	yield	
	concerned with issues related to	Food losses (% total	Food loss
	food production, food trade and	food available)	
	food distribution among others.	Wheat import	Import dependency
	The sub indicators related to this	dependency ratio	
	dimension are yields for staple	Share of water	Agriculture water
	food, agriculture expenditure, food	resources used in	
	loss, dietary energy supply, import	agriculture out of total	
	dependency and agriculture water	renewable water	
		resources	
Food access	The access dimension indictors	Poverty headcount %	Poverty
Indicators	reflect the ability of the population	Share of food	Food consumption
	to access food as they assess	consumption	
	financial and socio-economic	expenditure in total	
	strengths. Its determinants include	household	
	revenues, food prices or	consumption	
	infrastructure	expenditure %	
		Unemployment rate	Unemployment
		%	
		Inflation consumer	Inflation
		prices %	
Stability	The Stability dimension indicators	Climate change	Climate Change
Indicators	focus on factors that affect year-	vulnerability Index	
	round availability and accessibility	Food price anomalies	Price anomalies
	of food as well as its effective	standard deviation	
	utilization. Stability deals with	Per capita food	Production
	issues related to variability in food	production variability	variability
	production and supplies, price	Per capita food supply	Supply variability
	shocks, prevailing socio-political	variability	
	factors (violence and conflict) and		

	vulnerability to extreme weather		
	events		
Utilization	The food utilisation dimension	Percentage of the	Drinking water
	indicators examine the nutritional	population using at	Access
	status of the population. They	least basic drinking	
	detail the access to basic	water services	
	infrastructure essential for safe	Percentage of the	Sanitation access
	food utilization (water and	population using at	
	sanitation) as well as the nutritional	least basic sanitation	
	value of food measured by looking	services	
	into health parameters for children	Percentage of children	Child stunting
	(stunting and wasting) and women	under 5 years of age	
	(Anaemia).	affected by stunting	
		Percentage of children	Child wasting
		under 5 years of age	
		affected by wasting	
		Percentage of	Women anaemia
		anaemia among	
		women of	
		reproductive age (15-	
		49 years)	

4. Design of the Digital Food and Nutrition Security Dashboard

A fundamental factor that determines the sustainability of a food security monitoring system is the userdriven nature of its objectives towards which information is generated. Operational linkages between the monitoring system and institutions using the generated information need to be in place for the digital food and nutrition security dashboard to be successful in serving its purpose. In designing the food security dashboard there is need to consider the following steps to ensure all requirements of establishing a dashboard are in place:

- Development of a catalogue of indicators measuring the different components of the food system;
- Development of standardised template for data collection and control panel for data entry by multiple users and data sources ;

- Development of protocols and agreement for formal access to data detailing data requirements, frequency, coverage and format;
- Development of a system for transferring data electronically from the different sources into the database;
- Identifying data management systems for managing and storing data;
- Development of a system for interfacing with database and which will also capable of analysing and processing data;
- Development of normalisation scale and formulas for rescaling indicators so that they have an identical range usually ranging from o to 100, in this dimensions can be comparable as they have the same unit of measurement;
- Development of targets and traffic lights system for assessing measurement metrics;
- Development of user guides which provides information on the definition of each indicator, detailing how each indicator is calculated and presented; and
- Need for visualisation software/system for the production for custom reports.

The food and nutrition security dashboard is data intensive and generally needs a robust system of data collection, data transmission and dissemination system in place. There is need for disaggregated data at subnational level highlighting individual factors, consumer behaviour and food environments.

The food and nutrition security conceptual framework to be adopted should consider indicators of food availability, food access, and food utilization as core elements of food security, and links them to households' asset endowments, livelihood strategies, political, social, institutional, and economic environment¹⁴. Before implementation of the dashboard there is need to have a catalogue/ inventory of available measures, which should describe the state of data collection for each indicator. Furthermore, there is need to consult widely with a diverse stakeholders that generate data for these indicators in order to come up with a short list of recommended measures needed to meet decision-makers' needs¹⁵. However in selecting indicators for inclusion in the dashboard the following criteria will be applied to assist in the choice of indicators to be included:

- a. **Availability:** How easy is it to access updated information on the indicator and at what level of disaggregation
- b. **Timeliness:** How rapidly can the indicator be updated? Can it be made available at the right time?

 ¹⁴ <u>https://documents.wfp.org/stellent/groups/public/documents/manual_guide_proced/wfp203208.pdf</u>
 ¹⁵ <u>https://www.fsinplatform.org/sites/default/files/paragraphs/documents/Concept_Note-FSIN-TWG-Measuring-Food-Nutrition-Security.pdf</u>

- c. Sensitivity: How well can the indicator capture changing food security conditions?
- d. **Comparability:** Is it consistent? The use of a single methodology for measuring an indicator will allow for better comparison over time and geographic locations

Different food security frameworks have been collecting information on several indicators in Zimbabwe and there is a ready repository of indicators tracking the food and security status in the country. These existing platforms will be among key data sources for the proposed dashboard. To set up Food and Nutrition security dashboard there should be structures in place for data collection, data transmission and processing and dissemination of information³⁶. According to FAO, in setting up a dashboard there is need to rely on existing structures that meet the individual requirements of their partners, ensuring its seamless integration with national institutions without the challenges of creating additional institutions; there is need to involve all the actors in food security (governments, civil society organizations, private sector, associations etc.) in the implementation process, ensuring that there is a national consensus on the dashboard³⁷. The Zimbabwe Vulnerability and Assessment Council under FNC have multi-sectoral food and nutrition security committees at national, provincial and district levels comprising representatives from agriculture, social services, health, local government, education, EMA, NAC and these can be leveraged upon in addition to collect additional data on food and nutrition security for the dashboard. The availability, timeliness and sources of data for indicators used in Zimbabwe is on the appendix.

The quality of data and the speed with which it is generated is determined by the simplicity of the instruments used for gathering information. The Food and Nutrition council and its partners have vast experience in designing and collecting food security information and this experience is instrumental in ensuring the quality of the data which gives a true picture of the food security status in the country.

There is also need for Memorandum of agreements with data providers for the proposed dashboard. The agreements are expected to state clearly type of data to be transmitted, the required degree of accuracy, when, how often, and how it is to be transmitted and in what format. On the other hand, the agreements should highlight how information providers will access the dashboard. The agreement protocols are also expected to be amended periodically in line with changing data needs and requirements. The government of Zimbabwe through the Food and Nutrition Council have always collaborated with other stakeholders involved in tracking and monitoring food security situation in Zimbabwe and will not be difficult in accessing their data for incorporation on the proposed food security dashboard, Furthermore, other arms of the government like the Ministry of health and child care, meteorological department, Agriculture extension services (AGRITEX) ZimStats and the Zimbabwe Revenue Authority are also involved in the

¹⁶ <u>http://www.fao.org/3/X8622E/x8622e04.htm</u>

¹⁷ Ibid

collection of data related to food security such as nutrition status, rainfall patterns, crop and livestock production food prices, food exports and imports. Thus, it will not be difficult to access information for the food security dashboard. The use of existing infrastructure for collecting and compiling information has proven to be more successful, than the creation of new institutional structures for purposes of food security monitoring¹⁸. The administration of the food security dashboard also requires mobilising partners and funding. There is need to ensure sustainability of the dashboard through commitment by partners, the Food and Nutrition Council ride on the logistical and financial support from its partners such as FAO, FEWSNET and WFP to guarantee continue support for the dashboard.

5. Proposed features of digital dashboard

The proposed digital Dashboard should be an interactive system capable of providing snapshots of selected indicator outcomes typically as info graphics in a way that is easy to interpret as well as allowing downloading of dataset in various useable formats. The Arab Food Security Monitoring framework presents a standard framework in the form of a dashboard composed of a doughnut chart and a table. The doughnut chart consists of an inner doughnut showing the three core indicators and an outer doughnut displaying the remaining twenty- one (21) causal indicators, which are split among the four (4) food security dimensions, whilst the table provides the underlying data as well as the years over which the monitoring is conducted and the trend in three colours (red for negative trend, yellow for no trend, and green for positive trend). Within the doughnut, the data is normalized into scores ranging from o to 100, respectively for poor and good performance. The normalization of indicators allows the use of a unique scale for a visual assessment of food security¹⁹.

The proposed dashboard should have indicators highlighting; information on availability of food, Information on stability of supplies; information on constraints regarding access for all to supplies of food and information on the biological utilization of staple foods. The features of the proposed DFSD will include among others:

- Food security situation trends
- Hunger map
- Hunger daily, weekly, monthly and quarterly snapshots
- Prevalence of food insecurity information (disaggregated by province/ district)
- Hunger alerts,
- About information

¹⁸ <u>http://www.bioline.org.br/pdf?nd05026</u>

¹⁹ <u>https://www.unescwa.org/sites/www.unescwa.org/files/uploads/tracking-food-security-arab-region-summary-english.pdf</u>

- Machine learning predictive analytics the dashboard is expected to have projected analysis of how these factors will impact food and nutrition outcomes of the populations of concerns.
- Feedback option (to allow monitoring and evaluation of the dashboard and addressing problematic areas).

An example of a complete automatic dashboard



Figure 1: WFP MVAM Hunger map live dashboard

Source: http://mvam.org/

There is need for a Traffic Light rating system for evaluating the performance food security indicators based on some defined and agreed thresholds. The Traffic light system allows for effective communication of the food security status. The indication of performance is done using the three colours of a real traffic light system (red, yellow and green).

	Indicators	2016	2017	2018
	Undernourishment	7	61	86
Core indicators	Food insecurity	0	26	80
	Obesity	60	39	31
	Yields	23	51	94
Food availability Indicators	Food loss	76	98	52
	Import dependency	37	68	12
	Agriculture water	70	35	59
	Poverty	49	56	59
Food access Indicators	Food consumption	10	24	68
FOOD access multators	Unemployment	11	43	19
	Inflation	78	20	94
	Climate Change	92	2	62
Stability Indicators	Price anomalies	2	41	27
	Production variability	80	26	73
	Supply variability	1	15	13

5.1. Example of food security dashboard traffic light evaluation

Besides presenting scores the dashboard will be able to highlight frequencies and trend analysis of the different food consumption groups. The Food security dashboard will have functions that allows users to visualize and compare food systems indicators by geographic locations, food systems type, or income classification. Hence data can be viewed on a map as well as bar, line, and other chart types. It should also allow users to view profiles of different sub national levels to gain in-depth insights into the challenges and opportunities facing countries and their food systems²⁰. Besides being static the dashboard should be able to allow users to manipulate data online undertake in depth indicator-by-indicator analysis and generate custom reports which are downloadable it should also provide information on the official title and definition (metadata) of the indicators and the sources of the data used in the construction of the indicators. The Food Security Dashboard should be able to automatically update with new data from other online source such as FAOSTAT and World Bank Development Indicators.

With regards to the key metrics of food and nutrition security for inclusion on the dashboard, Appendix 1 provides a long list and description of proposed food security Indicators to be tracked on the dashboard. The appendix list the proposed indicators, Frequency of data collection, Coverage of the indicator and source & availability of the data

Assessment of the indicators and metrics will be based on comparable thresholds to classify outcomes of the dashboard. FNC also uses some of these threshold when tracking food security indicators for comparison purposes. Some of the international thresholds includes the Food Consumption Score (FCS)

²⁰ <u>https://foodsystemsdashboard.org/food-system</u>

used by the World Food Program (WFP) Food security framework. The food consumption score is associated with household food access and is usually used as a proxy for household food security. The FCS is a measure of dietary diversity, food frequency and the relative nutritional importance of the food consumed. Food consumption indicators are designed to reflect the quantity and quality of people's diets. A high FCS increases the probability that a household's food intake is adequate. FEWSNET make use of the Integrated Phase Classification (IPC) to classify households and areas according to a five-phase scale. The classification is based on a convergence of available data and evidence, including indicators related to food consumption, livelihoods, malnutrition and mortality. Thus the dashboard metrics will endeavour as much as possible to align to global thresholds and protocols.

6. Roll Out Plan

6.1. Modalities and implementation arrangements

To achieve the overall objective of improving reporting, communication of, and access to food security information IAPRI/LFSP will partner with FNC and also collaborate with several stakeholders who are key to food security in Zimbabwe. The following activities will be undertaken:

- Engage stakeholders on the need for a one stop DFSD and buy-in by key stakeholders;
- Mapping out key stakeholders to be engaged on the DFSD;
- Consultation with a diverse to come up with a short list of recommended indicators that meet decision-makers and stakeholders needs;
- Use existing sub national structures to create a more robust and self-sustaining food security status monitoring platform;
- Create an open access digital interactive food security dashboard for use by decision makers from both the public and private sector and cooperating partners;
- Pilot test the dashboard before full scale roll out;
- Launch the dashboard;
- Food price data collection for monthly market status updates;
- Publish quarterly food security status updates to complement the dashboard;
- Capacity building training sessions to stakeholders on how to effectively use the dashboard;
- Monitoring and evaluation of data sources and impact of the dashboard to policy decision making and response;
- Capacity building of FNC IT personnel to ensure diffusion of knowledge and skills to ensure sustainability of the dashboard in the absence of the developer; and
- Regular training of enumerators to ensure accurate data collection.

6.2. Outreach and Communication

In order to promote the use of Digital Food and Nutrition Security Dashboard by stakeholders in the food security sector the following communication strategy will be adopted:

- Stakeholder workshops to explain to participants about the digital food and nutrition security dashboard concept, and its benefits;
- National, provincial and district outreach to food and nutrition committees to explain the concept;
- Social Media awareness campaigns on the DFNSD and
- Introduction of key partners / stakeholders and their respective roles and responsibilities in the piloting of the Digital Food and Nutrition Security Dashboard.

SER	ACTIVITY	OUTPUTS	TIMING	RESPONSIBILITY
1.	NAPF Pillar Thematic	Policy guidance and buy	November	Pillar 1
	Working Group meeting	in from stakeholders	2020	Secretariat, IAPRI
2.	Engagement meetings	Technical report and	November	IAPRI and FNC
		TORs for systems	2020-March	
		developer	2021	
3.	National stakeholder	Information and	January –	Pillar 1 Secretariat
	sensitization meeting and	stakeholder buy in on	February	
	shortlisting of indicators for	indicators to include on	2021 (19	
	inclusion on the dashboard	dashboard	Jan- 21 or 26	
			Jan-21)	
4.	Designing and software	open access digital	JAN-FEB	IAPRI, FNC and
	coding of an open access	interactive food security	2021	system developer
	digital interactive food	dashboard		
	security dashboard			
5٠	Pilot test the dashboard	To check implementation	FEB-MAR	IAPRI, FNC and
	before full scale roll out	progress and provide	2021	system developer
		technical backstopping		
6.	Provincial and district Food	Information and	Feb-March	Pillar 1
	and Nutrition committees	awareness creation on	2021	Secretariat, IAPRI,
	sensitization workshops	the DFNSD concept		FNC
	All provinces to be covered.			

Roll out Plan and suggested timelines

7.	Digital Food and Nutrition	High level political buy in	Feb-March	Chief Director,
	Security Dashboard launch		2021	Pillar 1 Secretariat
8.	Provincial and district Food	Information and	Feb-March	Chief Director,
	and Nutrition committees	awareness creation	2021	Pillar 1
	sensitization workshops in			Secretariat, IAPRI,
	selected provinces to be			FNC
	covered.			
9.	DFNSD Implementation	To check implementation	Feb 2021	Pillar 1
	monitoring	progress and provide		Secretariat, IAPRI,
		technical backstopping		FNC
10.	Food Security report	Information and	Feb-March	IAPRI,FNC
		awareness	2021	

6.3. Expected outputs

- Digital Food and Nutrition security dashboard
- An Improved and efficient communication of food security and related developments among different stakeholders
- Handbook /Training materials on the Digital Food and Nutrition security dashboard
- Food Security report for Zimbabwe

7. Estimated Costs and Breakdown

The total budget for the establishment of Digital Food Security Dashboard is US\$ 49,138.00 and is summarized in Table 2 below.

Table 2: Budget

Activity	Unit type	Quantity	No. of Units	Unit Cost	Total cost
Livelihoods and Food Security expert	Person days	20	1	300	6,000.00
System developer	Person days	35	1	250	8,750.00

Field Work Costs					
Local Consultant DSA	Person	20	1	75	1,500.00
	days				
Government DSA	Person	30	3	75	6,750.00
	days				
IAPRI airfare		2	2	350	1,400.00
IAPRI DSA	Number	12	2	212	5,088.00
Vehicle Hire (provincial consultations)	Vehicle	20	2	150	6,000.00
· · · · · · · · · · · · · · · · · · ·	days				
Fuel/oils (estimated at 25litres/day)		500	2	1.5	1,500.00
Other costs					
Monthly validation workshops in Harare	Number	6	30	30	5,400.00
Printing	Number	2	3	75	450.00
Data support	lump sum	6	20	40	4,800.00
Internet costs	Number	6	1	250	1,500.00
GRAND TOTAL					49,138.00

Appendix 1: Long list of proposed Food security Indicators

In selecting the food and nutrition indicators for inclusion on the digital food and nutrition security dashboard consideration will also be on stakeholder needs, Frequency of data collection, Coverage of the indicator and source & availability of the data

Long list of proposed Food security Indicators

Category	Stakeholders	Objective	Indicator	Description of indicator
	AMA,	Assess private	Food Stocks	Quantity in Stock (kg)
		market and	Capacity	Food needs/requirements
	GMB, Grain Millers	government	Paquiraments	
	Association,	stocks	Requirements	
	Ministry of Labour		Market Chain/ Value Chain	Number of players/ market routes/
	and Social welfare,	Food market		Channel
Availability	Ministry of Lands Agriculture, water and rural development	systems and	Price trends	Prices of key commodities
		market	Market concentration	Number of players/ traders/ diversity
		performance	Market integration	Access/ policies/ norms/ prices
			Consumer Price Index	Food basket
				Type of intervention (Food, cash,
				voucher, inputs)
	Organisation	Food Assistance	Food and Non Food Interventions	Source of support (Government/
	Organisation			Humanitarian/ local network/ private

	World Food			
	Programme (WFP)			
	UNDP/ZRBF			
	USAID			
	Humanitarian			
	organisations			
	FNC,	Food	Household Dietary Diversity Score	Type of food consumed (food
	Ministry of Labour	Consumption	(HDDS)	groups)
	and Social welfare,	patterns of	Food Consumption Score (ECS)	Number of days consumed
		households	rood Consomption Score (FCS)	Source of supply
	Office of the	Expenditure		Price of food items by type
Access	President and Cabinet	patterns on food	Prices	Quantities of food items purchased
		items		by type
	Food and Agriculture			
	Organisation	Assess food		
	UNDP/ZRBF	stocks within households	Food Stocks	Quantity of food in stock by type

	World Food			
	Programme (WFP)			
	UNICEF			
	USAID			
	Humanitarian			
	organisation			
	Ministry Of Healthy	Estimate the		Weight
	and Child Care,	current		Age (preferably date birth)
	UNICEF, World	prevalence of	Prevalence of underweight (weight	MAUC (when measuring weight and
	Health Organisation	underweight	for Age)	height are not feasible)
Nutrition status	Ministry of Labour	children age 6 - 59 months		Sex
	and Social welfare	Estimate the		Weight
		current		Height/Length
	Food and Nutrition	prevalence of	Prevalence of wasting (weight for	Bilateral oedema
	Council	acute	height)	MUAC (when measuring weight and
		malnutrition		height are not feasible)
		(wasting) among		Sex

World Food	children 6 - 59		
Programme	months age		
	Estimate the		Height/Length
UNDP/ZRBF	current		Age (preferably date birth)
	prevalence of	Prevalence of stunting (Height for age)	
	chronic		
	malnutrition		Sex
	(stunting)		
	among children		
	6 - 59 months of		
	age		
	Estimate the		Weight
	current		Height
	prevalence of		Age (preferably date birth)
	protein - energy	Prevalence of protein energy	Pregnancy status
	malnutrition		
	among women		MUAC (when measuring weight and
	of childbearing		height are not feasible)
	age (15 - 49 years		
	of age)		
	Estimate the	Prevalence of Vitamin A and iron	Haemoglobin levels
	current	deficiency among children 6 - 59	Palm pallor

		prevalence and	months of age and women of child -	Presence of night blindness
		severity of	bearing age	
		micronutrient		
		deficiencies		
		among children		Vitamin A, iron and folic acid
		6 - 59 months of		supplementation
		age and women		
		of child-bearing		
		age		
Macroeconomic Indicators		•Year on year		
	 ZimStats 	inflation rates.		
	Consumer Council	• Month on		
	of Zimbabwe (CCZ)	month inflation		
	Reserve Bank of	rates.		
	Zimbabwe	• PDL/Poverty		
	• Zimbabwe Energy	lines data		
	Regulatory	• CCZ Consumer		
	Authority(ZERA)	Basket		
		• Exchange rates		
		data (official		
		and parallel		
		market)		

		• Fuel prices	
		• Transport fares	
		(selected	
		routes)	
Agriculture commodities	FEWSNET	Maize	
producer prices		Tomatoes	
		Onions	
		Soya beans	
		Leafy vegatables	

Appendix 2: Terms of reference for system developer

The project is looking for a System Developer to assist in the establishment of the food security dashboard. The candidate will work with the IAPRI and FNC. The consultant will be responsible for the following activities:

- Provide technical support for the development of an open access digital interactive food security dashboard, easily accessible on smart phone, tablet, laptop and desk computers.
- Testing and evaluating developed software modules to ensure that they operate reliably
- Determining the operational practicality of the dashboard
- Provide system user rights
- The dashboard should have pre-designed reporting system
- Deploying software tools, processes and metrics
- Writing and implementing efficient code
- Debugging and modification in existing programs and subsequently developing these modifications
- Working closely with FNC IT personnel
- Develop the operational/user manual and training the users
- Design capacity building materials and conduct training sessions to FNC IT personnel to ensure diffusion of knowledge and skills
- Carry out any other duties as may be assigned by IAPRI/FNC in relation to the establishment of the DFSD