



Food Security Dimensions – Availability

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Introduction:

This document is a collaborative work developed by the Programme Quality Working Group of the Global Food Security Cluster in September 2021. The document provides a brief overview of the food security dimensions (availability, access, utilization and stability), provide practical examples from country offices, and links for further study and resources.

Food Security is driven by many factors, at the area, household and individual level. Each level connects to and influences the others in a variety of ways. The 1996 World Food Summit stated, "Food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life." The four dimensions of food security, availability, access, utilization and stability, are critical to understanding food security and provide insight into likely food security outcomes.



Purpose of the document

The Global Food Security Cluster (gFSC) has developed a brief for each food security dimension to support partners further. The document is intended to support field teams by laying out a shared understanding and description of food security dimensions, related indicators and best practices for analysis and program design. Each document provides an overview of a specific dimension, and includes the following sections:

- Definition
- Supporting in Emergencies
- Data Collection and Analysis
- Linkage to the IPC analytical framework
- Case studies and examples from field teams

Definition

Food Availability - The availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports (including food aid) (FAO 1996)

Supporting Food Availability in Emergencies¹:

Food availability is the food [of appropriate quality] that is physically present in the area of concern and expected to become available for use in that area within the period of concern – from domestic production and imports (including direct food distribution through food aid). Food availability may be aggregated at the national, provincial, district or community level. Food availability is determined by:

- production: food produced in the area;
- stocks: food held by traders, in government reserves [and at farm level] in the area;
- trade: food brought into (and taken out of) the area through market mechanisms;
- bulk transfers: food brought into the area by the government and/or aid agencies.

Data and Analysis of Food Availability:

Food security dimensions tend to interact in a sequential and systematic manner, i.e. food must be available, then households must have access to it and must utilize it appropriately, and the whole system must be stable. Food availability addresses the “supply side” of food security and is determined by the level of food production, post harvest loss, stock levels and net trade. Food Availability analysis (See Figure 1) focuses on whether food is **actually or potentially physically present for purchase or acquisition for consumption**, including: aspects of production, food reserves, imports, markets and transportation, and wild foods (IPC Manual Version 3).²

¹ <https://fscluster.org/food-security-emergencies>

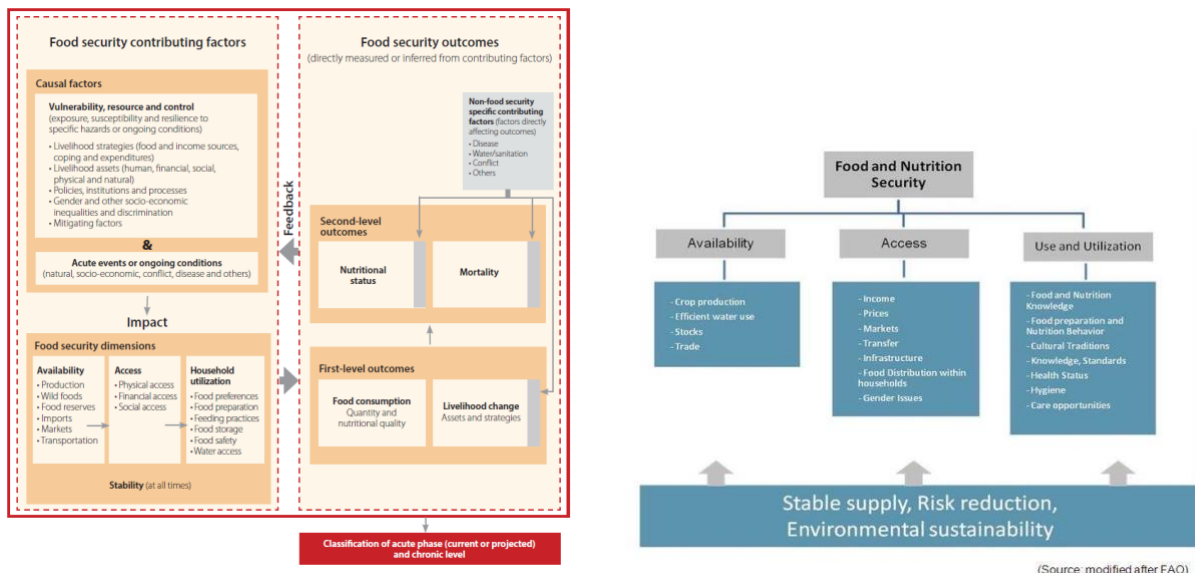
² http://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/manual/IPC_Technical_Manual_3_Final.pdf



Table 1 Description, Factors to Consider and Example Indicators for Food Availability Data

Food Security Dimension	Description	Factors to Consider	Associated Indicators (Non-Exhaustive)	COVID-19 Implications
Availability (Area)	Actual or potential existence of food in the area – typically at community, county, livelihood zone, country level.	<ul style="list-style-type: none"> Agricultural production (crops, livestock, fisheries, aquaculture) Rainfall Patterns Agricultural Inputs Livestock Availability Internal Trade flows Import/Export 	<ul style="list-style-type: none"> Food/Livestock availability in local markets In-country trade volumes Cross-border food trade volumes Possibility to transport food from rural to urban areas Access to farmland and pastures 	<ul style="list-style-type: none"> Disruption to inter/intra food trade Disruption to agricultural production National COVID-19 policies

Figure 1 IPC Acute Food Insecurity Analytical Framework and Food Security Dimensions



Guidance and Data Sources - Food Availability

Global Food Security Indicator Handbook - <https://fscluster.org/handbook/>

VAM Resource Centre - <https://resources.vam.wfp.org/>

FAO Hand in Hand Webapp - <https://data.apps.fao.org/>

European Commission Anomaly Hotspots of Agricultural Production (ASAP) <https://mars.jrc.ec.europa.eu/>

Crop Monitor Early Warning Reports <http://cropmonitor.org/index.php/cmreports/earlywarning-report/>

FEWS NET Seasonal Monitoring Reports - https://fews.net/archive?f%5B0%5D=field_report_type%3A63



Case Studies on Food Availability

- **Nigeria** - Interventions for Improving Food Availability in NE Nigeria
- **South Sudan** - Impact of Food Availability on Emergency and Catastrophic Acute Food Security Outcomes

FAO's Interventions for Improving Food Availability in NE Nigeria

Background

The COVID-19 pandemic and conflict/insecurity were among the biggest humanitarian shocks in Nigeria in 2020. Conflict and insecurity, compounded by the economic negative impacts of COVID-19 pandemic, were the major drivers of food insecurity, particularly in north-eastern States of Borno, Adamawa and Yobe. Despite some harvests, the food security situation in conflict-affected areas of northeastern Nigeria deteriorated from 2.9 million in March 2020 to 3.4 million in October 2020³. The number was projected to rise further to 5.1 million during the lean season of 2021 if adequate food assistance and livelihoods interventions were not provided. The majority (2.7 million or 53% of the 5.1 million people) in Crisis and Emergency⁴ food insecurity situation were projected to be in Borno State. Worse still, the localities of Abadam, Dikwa, Guzamala, Kukawa and Marte in Borno State as well as other partially accessible garrison towns remain of concern due to extreme humanitarian access constraints associated with the ongoing conflict. Food availability and access are major limiting factors to household food consumption. Levels of acute malnutrition are extremely high, while livelihoods of most households have broken down.

Major issues effecting food availability in NE Nigeria

Protracted conflict, wide-scale displacement, economic shocks, declining agricultural productivity and a ban of fishing in Lake Chad have left many households in the northeast deprived of their typical agricultural livelihoods and in dire need of humanitarian assistance. The conflict has forced an estimated 2.2 million people (as of Dec 1st 2020) to flee their homes and take refuge in internally displaced (IDP) camps⁵ where they have limited access to arable land and other services, while other displaced people have sought refuge at relatives and friends homes in communities considered safer. An estimated additional 348,000 people have sought refuge and asylum outside Nigeria, majority of whom are in Niger (166,000) and Cameroon (118,000) according to UNHCR. Household incomes of the displaced populations have severely declined while their malnutrition rates are on the rise. Results of recent IPC Acute Malnutrition analysis (February 2021) confirm high prevalence of acute malnutrition. An estimated 1.2 million children under 5 years and over 123,000 pregnant and breastfeeding women were estimated to be acutely malnourished⁶ in February 2021, which further confirms

³ Nigeria CH Fiche, March 2020 and October 2020.

⁴ In **Crisis (CH Phase 3)**, households have food deficits that are reflected in high or above-average levels of acute malnutrition, while in **Emergency (CH Phase 4)**, households have large food deficits resulting in very high acute malnutrition or excess mortality. Populations in both Crisis and higher phases require urgent humanitarian assistance. Specifically, for populations in Crisis, urgent action is required to protect livelihoods and reduce food consumption gaps, while in the case of populations in Emergency, urgent action is required to save lives and livelihoods.

⁵ IOM DTM for Nigeria November 2020 update

⁶ [IPC Nigeria Acute Malnutrition 2020Sept2021Aug Report](#)



the precarious food insecurity situation in the region. COVID-19 pandemic has also contributed to breakdown of social and economic (trade) networks, further exacerbating income loss and significantly disrupting the functioning of the food systems. Impact of the pandemic on Nigerian households' income revealed 79.3 percent⁷ had suffered a decline in income, while 58 percent farmers lacked access to seeds due to increase in prices of agricultural inputs.

FAO's emergency response interventions

FAO in collaboration with partners has responded in many ways, with the aim of protecting agricultural-based livelihoods and improving the availability of safe nutritious foods through provision of agriculture support to affected people. Notable areas of support include provision of inputs to households in need for wet-season and dry-season planting, aquaculture, Climate-Smart Agriculture, micro-gardening, livestock restoration, Safe Access to Fuel and Energy and support to SMEs.

In this article, we explore how FAO's support to aquaculture development has provided opportunities for generating incomes and increasing availability of nutritious foods among households affected by conflict and insecurity and those banned from fishing on Lake Chad, thereby preventing escalation of food security and nutrition crisis in northeastern Nigeria.

Prior to the crisis, the fisheries sector had significant economic importance and fish from the North East were supplied inter-regionally to the rest of Nigeria. Hundreds of trucks loaded with smoked fish products would leave Doro Baga Fish market in Doro-Baga village of Kukawa Local Government Area and Baga Road Fish Market in Maiduguri Metropolis⁸⁹ on weekly basis to other fish markets in Nigeria particularly in the southern parts of the country. These economic activities provided job opportunities to youth and other teeming population within and outside the Lake Chad Region.

However, since the outbreak of armed conflict in the northeast, particularly in Borno State, the livelihoods of rural communities especially in the fisheries sector have been severely affected. A ban on fishing and fish trade around the Lake Chad, increasing attacks by the insurgents, and limited extension services, and lack of alternative means of livelihoods escalated the vulnerability of affected households to food and nutrition insecurity, and led to high levels of internal displacement.

The case of aquaculture development interventions

This unique intervention is carried out under circumstances in which many youth and women

⁷ *Impact of COVID-19 on Socioeconomic Indicators, Agriculture, Markets and Food Security in Nigeria (Draft)*

⁸ Ladu, B.M.B., Ovie, S.I., & Sule, O.D. (2004) *Study of the Contribution of Fish Marketing to Livelihoods in the Countries of the Lake Chad Basin: Cameroon, Central African Republic (CAR), Chad, Niger and Nigeria. 1. Fisheries Information Monitoring System for the Lake Chad Basin: Monitoring Fish Landings in Doro-Baga Fish Market, Borno State, North East Nigeria. Report for the DFID/FAO Sustainable Fisheries Livelihoods Programme (SFLP). 67pp.*

⁹ Ladu, B.M.B., Ovie, S.I., & Sule, O.D. (2004) *Study of the Contribution of Fish Marketing to Livelihoods in the Countries of the Lake Chad Basin: Cameroon, Central African Republic (CAR), Chad, Niger and Nigeria. 2. Key Fisheries Stakeholders Analysis: The Relationship Between Different Stakeholders Groups and Fish Marketing Network in the Lake Chad Basin. Report for the DFID/FAO Sustainable Fisheries Livelihoods Programme (SFLP). 18pp.*



can no longer rely on fishing, making them more vulnerable to food insecurity, malnutrition and unemployment, increasing their dependency on food aid. As part of its emergency response in the region, FAO is helping affected fisher folks rebuild their livelihoods through capacity building on safe and sustainable aquaculture practices, and the provision of related inputs, and complementary micro-gardening kits. In summary, FAO mobilizes the youth and trains them in good aquaculture practices. About 200 households have been assisted with 200 units of aquaculture starter kits and 350 micro-gardening kits. FAO plans to provide 3 000 micro-gardening kits this year. Units of 3,000 litres capacity of fiberglass fish tanks are stocked with 5,000 catfish fingerlings, and assorted fish feeds are provided. With the conducive warm temperatures in the northeast, the results of catfish tank-farming are overwhelming.

Food choices become limited in the context of emergencies, resulting in shortage of micro-nutrients and poor household dietary diversity leading to increased prevalence of malnutrition. Fish and vegetables are a unique combination of highly nutritious foods needed for growth and development and boosting of immunity, an ideal dietary combination particularly needed by children and women. The fertile wastewater from the fish tanks is not wasted, it is used to irrigate (and fertilise) nearby vegetable kitchen gardens. This approach promotes and ensures sustainable water use among rural households where beneficiaries derive optimal advantage from the water investment put into the fish-culture and micro-gardening clusters. To reduce post-harvest losses for harvested fish unable to reach the market in time, the FAO Thiaroye Technology (FTT¹⁰) smoking kiln was introduced in these communities for safe and fuel-efficient processing of catfish. It adds flavour and shelf life, so that farmers can preserve and market their catch when profitable market is available. In comparison with other traditional methods of fish preservation such as salting and roasting/frying/cooking that preserve fish for just a few days or weeks, the FAO FTT smoking kiln extends the shelf life of fish by 6 months.



A beneficiary diverting fertile fish-tank wastewater to his vegetable garden.

Source:
FAO (2020)

Promoting youth employment and income generation

FAO's aquaculture initiative is creating employment and income-generating opportunities for direct beneficiaries and other actors along the fishery value-chain. A total of 200 direct jobs

¹⁰ FAO-Thiaroye fish processing technique is an innovative and polyvalent technique with important advantages for each actor along the supply chain. It provides significant benefits to fishers, processors, traders and consumers. It contributes to safe smoking conditions and ensures less heat, burn and smoke exposure, making it a major efficient smoking system for a large majority of operators.



and many more indirect jobs in the aquaculture value chain have been created in the past one year, while 100 or more direct jobs will be created in 2021. At the end of a six-month cycle (with a 10-percent mortality rate), the intervention generates approximately NGN 382 500 (USD 1 062) per household. The integrated vegetable farming also provides beneficiaries with income and nutritious vegetables. Some beneficiaries reported that at the peak of harvest they were able to earn between NGN 8 000 and 12 000 (USD 22.2 -33.3) per week from selling vegetables alone, making it one of the profitable small scale agricultural investment ventures in northeastern Nigeria. The availability of water for irrigation means harvests from the gardens are year round.



Time to count the money. A beneficiary receiving money from a fish trader following huge cat-fish harvest. *Source: FAO (2020)*

Mitigating protection risks for vulnerable fisher-folks

Before this intervention, fisherfolks who used to go fishing in Lake Chad risked arrest by the military. They also risked being attacked by insurgents who prowl the area. The FAO aquaculture intervention therefore mitigates occupational risks for fish actors. In each targeted community, beneficiaries are grouped into a cluster of ten households. Each cluster's tanks are installed on land donated by the LGA's authority and traditional leaders in safe and secure locations within the communities. This has resulted in safeguarding the beneficiaries from risk of being attacked by insurgents and arrests by the military.

Challenges with addressing food availability in northeastern Nigeria

Persistent, recurrent and emerging humanitarian shocks such as conflict and insecurity, COVID-19 pandemic, economic slowdowns, climate change and variability and compounding impact of past shocks continuously deter significant achievement of sustainable food and livelihood systems among rural households.

Insurgency and general insecurity significantly disrupt trade and food supply systems thereby creating a vacuum in supplies especially in hard to reach communities. Forced displacements induced by insurgency also directly affect area cultivated and per capita food production,



thereby affecting food availability.

In addition, limited partnerships and resources to finance large-scale resilience-building interventions is a major challenge. In the northeast, more attention has been put on emergency, life-saving interventions and less attention to resilience building interventions. In order to achieve sustainable, stable food and livelihood systems, development and resilience building initiatives need to be scaled up and sustainably funded.

Additional information

- <http://www.fao.org/3/ca5223en/ca5223en.pdf>
- <http://www.fao.org/3/cb1550en/cb1550en.pdf>

South Sudan – Impact of Food Availability on Emergency and Catastrophic Acute Food Security Outcomes

The lack of availability of food sources lies at the heart of the recent famine declarations in South Sudan: Leer & Mayendit counties (2017) and Pibor county (2020) in the wider context of a long protracted crisis going back to December 2013. Key drivers, most recently, the compounded shocks in 2020, included the indirect effects of COVID (disrupting complex commercial and humanitarian supply chains), the on-going macro economic crisis resulting in high food and other commodity prices, a second year of unprecedented flooding and the continuation and intensification of sub national violence. These shocks affect both access and availability of food items resulting in the worst levels of acute food insecurity ever recorded in South Sudan in 2020 and projected to worsen in 2021 resulting in 7.4 million persons in IPC phase 3+ by the depth of the May – July lean season.

Examples of Disruptions to Food availability: South Sudan

Akobo West (2020) – Flooding and Insecurity

- **Background:** In Akobo West (2020) the flooding resulted in large numbers of micro displacement from low lying to slightly higher areas and conflict resulting in further micro displacements from peripheral unprotected locations to more central semi urban locations offering greater safety.
- **Impact of Food Availability:** Almost total loss of the harvest and even the loss of grain stocks that had been collected due to the flooding

Pibor 2020/2021 – Insecurity and Flooding

- **Background:** In Pibor (2020) armed combatants deliberately targeted local livelihoods: destroying standing crops, stealing large numbers of cattle, destroying homesteads and facilities offering health, nutrition and education services. Without harvested cereals, that might have lasted 3 – 5 months there became greater reliance on fishing and wild foods.
- **Impact of Food Availability:** Many agro pastoralists and pastoralists have lost all their animals and any animals still remaining have been moved to isolated locations further reducing availability. Additionally the flooding and conflict also resulted in the disruption of humanitarian assistance (food, health & nutrition) further exacerbating available food stuffs.



With the fear of death, rape and injury many residents began to practice 'self-limiting behaviors' meaning they would not travel to the 'usual' more distant fishing ground and deep forest again further reducing their options to collect the food stuffs available there. These factors have resulted in 2020 in phase 5 households with 'catastrophe' levels of food consumption and adoption of negative coping strategies: sale of their last female animal, begging, reduced meals, and even in some instances having to leave behind vulnerable (elderly, children & disabled) dependents as more able family members migrate in desperation to find food.