GLOBAL FORTIFICATION
DATA EXCHANGE

STAKEHOLDER CONSULTATION

Understanding the needs of partners and national implementers to make informed decisions about their fortification policies and programs

An in-country case study with Nigeria

25 January 2020

SPECIAL THANKS TO GAIN NIGERIA FOR ORGANIZING THE CONSULATION AND CONSOLIDATING FEEDBACK IN THIS REPORT

www.FortificationData.org
Info@FortificationData.org

INTRODUCTION

Food fortification is one of the most scalable, sustainable and cost-effective interventions to combat micronutrient malnutrition.

Vitamin and mineral deficiencies affect people globally – impacting their health and limiting their ability to contribute to the economic well-being of their communities and countries.

The Global Alliance for Improved Nutrition (GAIN) and the Iodine Global Network (IGN) organized virtual orientation meetings in seven countries, to introduce the Global Fortification Data Exchange (GFDx) as a "one-stop shop" for harmonized data on fortification globally. The consultations were attended by representatives from government, development partners, donors, research and academic institutions, food regulators, and premix suppliers.

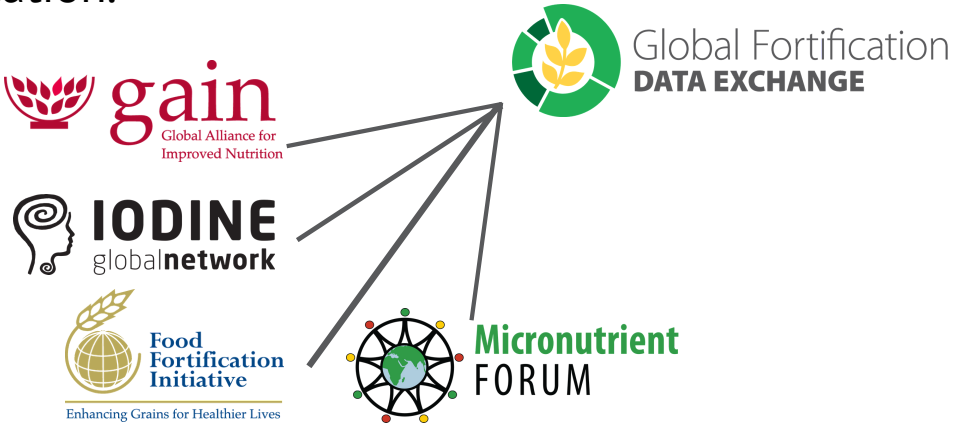
GOAL OF STAKEHOLDER MEETINGS

The goal during these virtual meetings was to get feedback on the GFDx platform from stakeholders, to understand their data needs and processes for decision making, and to find out how the GFDx website might be enhanced or refined to better support their decision-making processes.

RESPONDING TO A FORTIFICATION DATA CHALLENGE

During the first Global Summit on Food Fortification in Arusha, Tanzania, it was highlighted that there were many different stakeholders that collect and house data on fortification in different ways. There was no “one-stop shop” for harmonized data on fortification globally. As more countries began to adopt food fortification programs, stakeholders raised a call for better data accessibility to inform policy and identify populations in need, formalized in the 2015 Arusha Statement on Food Fortification.

As a response to this call for action, the Global Fortification Data Exchange (GFDx) was created, through a collaboration between various organizations: the Food Fortification Initiative (FFI), Global Alliance for Improved Nutrition (GAIN); Iodine Global Network (IGN), and the Micronutrient Forum (MNF), and supported by the Bill and Melinda Gates Foundation. Designed by the fortification community, the GFDx relies on the cooperation of both providers and users of data to help reach our aspiration for an improved data landscape in food fortification.



WHAT IS THE GFDx?

The GFDx is an online analysis and visualization tool for data on food fortification; it provides all the data necessary to track global progress on food fortification and to enable decision makers to use data to improve the quality of national fortification programs. The GFDx aggregates and visualizes data on five commonly fortified foods: **maize flour, oil, rice, salt, and wheat flour.**

The GFDx includes indicators on food fortification legislation from 1940 to present, fortification standards, food availability and intake, legislation scope, proportion of foods industrially processed, availability of regulatory monitoring protocols, fortification quality, health impact, comparison with WHO recommendations, and population coverage for 196 countries, among others. Within the GFDx site, users can generate custom maps, charts, tables, and plots or download data for offline analysis. The GFDx is continuously updated as new data and information become available.

WHERE DOES THE DATA COME FROM?

All data in the GFDx come from countries and national programs. Some had already been compiled globally, but independently managed, with separate databases for each food vehicle. Other important food fortification data only exist in national databases. Consolidating available data for the most commonly fortified foods allows national decision-makers to more holistically view their fortification programs, identify gaps, and make comparisons across foods and between countries. Importantly, compiling national and global data and consolidating data sets across standardized indicators reflects the need for a collaborative and crosscutting partnership in fortification in order to improve diets globally.

The GFDx represents a significant step forward in the effort to improve the availability, stewardship and presentation of fortification data. From non-profit organizations to government to private industry, a broad range of actors must come together for fortification programs to be successful.

In thinking about this and the data value chain, the goal of the GFDx is to provide actionable information on fortification policies and programs that meets the diverse needs of stakeholders along the decision-making pathway

CONSULTATIVE DIALOGUES WITH IN-COUNTRY FORTIFICATION STAKEHOLDERS TO IMPROVE UPTAKE OF GFDx DATA

The GFDx was designed to empower governments, donors, implementing agencies, and other members of the global health and development community to reach populations affected by vitamin and mineral deficiencies with data-driven policy and programs. Despite global usage of the Global Fortification Data Exchange (GFDx) among various stakeholders (such as technical staff, academics, non-governmental organizations, donors and others) website analytics for the period between 2017-2019 demonstrate that usage is low among most low- and middle-income countries (LMIC).

To further increase usage and reinforce the value and use of the GFDx data for key stakeholders in-country for decision making, including governments, implementing agencies, and private sector partners to improve fortification programs, the GFDx held consultative dialogues with fortification stakeholders to better understand:

1. their processes for decision making regarding changes to fortification programs;

2. their data needs in order to facilitate discussions and decision making for fortification programs;

3. whether the GFDx meets those needs already, *or* whether a set of small tweaks/improvements to the site (in presentation of data, added visualizations or existing data as noted above) can be made to the GFDx to meet those decision-making needs; and

4. what emerges across country consultations and how do we integrate these elements into cross-country learnings.

TARGET STAKEHOLDERS

- Country stakeholders/key decision makers in government
- Regional fortification association stakeholders
- Development agencies or other implementing partners with broad presence and specific mandates in fortification
- Researchers/academic institutions
- National Fortification Alliance representatives
- Industry Associations/grain, salt, oil producers
- Civic associations that advocate for fortification such as consumer groups, parent associations and human rights groups
- Other fortification stakeholders and decision makers along the decision-making pathway

ATTENDEES

With the support of the GAIN Nigeria Country Office, the GFDx leveraged fortification stakeholder groups to better understand the data needs and their feedback on the GFDx platform.

Attendees included representatives from:

- Federal Ministry of Health, Nigeria

KEY RECOMMENDATIONS

"The platform is really very good-from the way it looks, it seems to be user friendly. For the first time globally, we're having such a website...to see so many countries and their fortification programs and policies"
-Representative from the Federal Ministry of Health

"From what we have seen on the platform, you can see the consumption of rice is high in Nigeria, which makes it a great vehicle to reach large populations and those in different villages. As we explore the platform more, I believe it will be useful to us. For now, we haven't been able to grasp all it has to offer. We will study it more and then follow up."
-Representative from the Federal Ministry of Health

"We would like to have examples of legislation and standards from other countries who have already been through the process [of mandatory rice fortification]. How can we add it to our policy and national guidelines on micronutrient burden? We need all the information we can get and be able to discuss with others on how it came about in their country."
-Representative from the Federal Ministry of Health

KEY RECOMMENDATIONS

The following recommendations were considered important to the Nigeria Stakeholders group for improving the usage of GFDx database for program discussions, reviews and decisions:

- **Inclusion of others from the National Fortification Alliance for a presentation of the GFDx**: Decisions on fortification in Nigeria are always made as a team (NAFDAC, MOH, SON and private sector). Only FMOH could join this meeting, so GFDx needs to be presented to others within the group for proper alignment on data and decision-making.

- **Resources for technical advisory group and government:** Technical advisory groups in Nigeria are in charge of reviewing the data on fortification (rice fortification as a new vehicle is now being reviewed) before approving legislation or guidelines into the national nutrition policies. They need evidence and data to share with the review committee Thus documents and materials would be helpful to have.

- **Guidance on setting standards and choosing vehicles:** Stakeholders recommended that more guidance be available for decision makers on how to set standards, specifically for rice fortification within their country context.

- **Experiences in other countries:** Information from other countries on how they chose standards and implemented legislation (specifically rice fortification).

CATEGORIZING RECOMMENDATIONS

	MEDIUM PRIORITY	HIGH PRIORITY
WITHIN SCOPE	• Guidance on setting standards and choosing vehicles and examples from the experience of other countries (e.g., rice fortification)	• Inclusion of others from the National Fortification Alliance in Nigeria for a presentation of the GFDx • Resources and documents made available on the website for technical advisory group and government
OUT OF SCOPE		

1. High Priority and Within Scope: The GFDx has the ability and resources to incorporate this recommendation now or in the near future.
2. High Priority and Out of Scope: The GFDx may fulfill this recommendation at a later time but the recommendation may require additional partners.
3. Medium Priority and Within Scope: The GFDx has the ability to complete this recommendation but may fulfill the recommendation at a later time with more resources.
4. Medium Priority and Out of Scope: The GFDx does not have the ability or resources to do this, but will consider this for future expansion of the GFDx.

CONCLUDING REMARKS

The Nigeria stakeholders felt that the GFDx is going to be a useful tool. Since they were seeing the platform for the first time, they appreciated the introduction but felt that they needed more time to look at the site. Once they have a chance to review thoroughly, they will be able to get more feedback.

The stakeholders thought GFDx would be an especially useful tool in Nigeria as they are currently considering rice fortification as a strategy to reduce micronutrient burden in the county.

From what they could ascertain from the presentation of the platform, consumption data for rice in Nigeria makes it a convincing vehicle to reach large populations with important micronutrients. It will be especially important for them to have any and all documentation and data related to rice fortification evidence. This is needed for presentation to the technical review committee that is in charge of including rice fortification in the national nutrition policy and national guidelines. In the meantime, they also would like more information on how other countries enacted legislation and developed standards for rice, so they can be ready with the appropriate national standards.

The stakeholders also noted that in any decision-making, review of issues regarding fortification, and even when attending events, "Nigeria comes as a team". The National Fortification Alliance in Nigeria (MOH, SON, NAFDAC as well as the private sector manufacturers) meet regularly to discuss factors. It will be useful for the to all use the GFDx platform for their source on data.

NEXT STEPS

The Nigeria stakeholder consultation participants outlined several key next steps.

- Invite representatives from NAFDAC, SON, and private sector for a presentation on the GFDx, and discuss how the platform can be useful for the technical discussions on rice fortification legislation and standards.

- Participants will reach out to GFDx for help in connecting to the right resources and data, TA needed.

THE GFDX WILL CONSOLIDATE THE KEY RECOMMENDATIONS FROM EACH OF THE 7 STAKEHOLDER CONSULTATIONS HELD GLOBALLY TO IMPROVE THE GFDX PLATFORM TO BETTER SUPPORT DECISION MAKERS ON FORTIFICATION.

ACKNOWLEDGMENTS

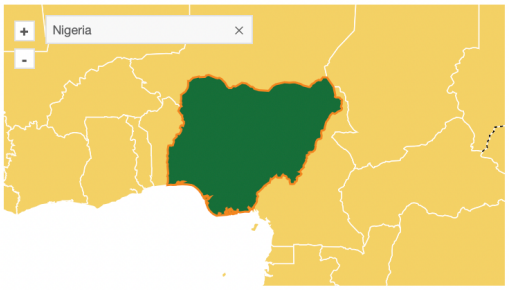
The GFDx team would like to thank the fortification community in coming together for this important meeting to discuss and identify how the GFDx can become beneficial and accessible to stakeholders involved with food fortification in Nigeria.

COUNTRY DASHBOARD

Last updated: 17-Feb-2021

Global Fortification DATA EXCHANGE

Nigeria Fortification Dashboard



(Click on Section Headings, Numbers, and Nutrients where you see the hand icon to view more information)

Maize flour

Mandatory fortification since 2010 ✓

Source: Standards Organization of Nigeria. Nigerian Industrial Standard, NIS 723:2014, Standard for Maize Flour, ICS67.220.20. Nigeria. 2014.

10 Countries in Africa have legislation for mandatory fortification of maize flour

Legislation scope for maize flour in Nigeria	
Type of maize flour that must be fortified	Only subsets
Origins or destinations of maize flour that must be fortified	✓ Domestically produced ✓ Imported ✗ Exports
Intended use of maize flour that must be fortified	✓ Household ✓ Processed food ✗ Animal feed ✗ Donated food

Source: Standards Organization of Nigeria. Nigerian Industrial Standard NIS 723:2014, Standard for Maize Flour ICS 67:220.20. Nigeria. 2014.

Nutrient levels and compounds in maize flour fortification standard in Nigeria		
Vitamin B6	Pyridoxine hydrochloride	6.00 mg/kg
Vitamin B12	Cyanocobalamin	0.02 mg/kg
Folate (B9)	Folic acid	2.60 mg/kg
Iron	NaFeEDTA	40.00 mg/kg
Niacin (B3)	Niacinamide	45.00 mg/kg
Riboflavin (B2)	Riboflavin	5.00 mg/kg
Thiamin (B1)	Thiamin mononitrate	6.00 mg/kg
Vitamin A	Retinyl palmitate	2.00 mg/kg
Zinc	Zinc oxide	50.00 mg/kg

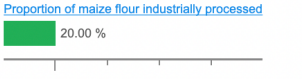
Source: Standards Organization of Nigeria. Nigerian Industrial Standard, NIS 723:2014, Standard for Maize Flour, ICS67.220.20. Nigeria. 2014.

11 Countries in Africa have maize flour fortification standards

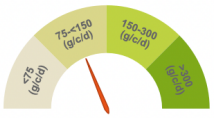
Fortification opportunity for maize flour in Nigeria

Population coverage of a food (whether fortified or not) represents the expected population that may benefit from fortification if it is implemented well. however, there are no data available on population coverage of maize flour in Nigeria.

Proportion of maize flour industrially processed



Source for industrially processed: Talatu Ethan, Standards Organisation of Nigeria. Personal communication. Nigeria. 2017.



95.1
(grams/capita/day)
Daily food availability
[1, 3]

Presence of monitoring protocols for maize flour fortification in Nigeria	
External monitoring of domestic production	Yes
Import monitoring of imported food	Yes

Source for external monitoring protocols: National Agency for Food and Drug Administration and Control (NAFDAC). National monitoring & evaluation framework for food fortification programmes in Nigeria. October/2014.

Source for import monitoring protocols: National Agency for Food and Drug Administration and Control (NAFDAC). National monitoring & evaluation framework for food fortification programmes in Nigeria. October/2014.

7 Countries in Africa with mandatory fortification of maize flour have external monitoring protocols

6 Countries in Africa with mandatory fortification of maize flour have import monitoring protocols

Maize flour fortification quality/compliance in Nigeria	
Maize flour in Nigeria that is fortified	80.00%

Source: Talatu Ethan, Standards Organisation of Nigeria. Personal communication. Nigeria. 2017.

11 Countries in Africa have fortification quality/compliance data for maize flour

Salt

Mandatory fortification since 1992 ✓

Source: Standards Organisation of Nigeria. Nigerian Industrial Standards NIS 168:2004. Standard for Food Grade Salt. ICS 67.200.20. Lagos, Nigeria. 2004

ECOWAS Resolution A/RES/5/8/94 on the Mandatory Iodisation of Salt in ECOWAS Member States "suggests that....all Member States should enact by the end of 1994, laws making it mandatory to iodise salt produced and imported for human or animal consumption...." [https://bit.ly/3b4Fl8i]

44 Countries in Africa have legislation for mandatory fortification of salt

Legislation scope for salt in Nigeria	
Type of salt that must be fortified	All types (no exceptions)
Origins or destinations of salt that must be fortified	✓ Domestically produced ✓ Imported ✗ Exports
Intended use of salt that must be fortified	✓ Household ✓ Processed food ✗ Animal feed ✗ Donated food

Source: Standards Organisation of Nigeria. Nigerian Industrial Standards NIS 168:2004. Standard for Food Grade Salt. ICS 67.200.20. Laogos, Nigeria. 2004

Nutrient levels and compounds in salt fortification standard in Nigeria		
Iodine	Potassium iodate	50.00 mg/kg

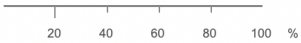
Source: Standards Organisation of Nigeria. Nigerian Industrial Standards NIS 168:2004. Standard for Food Grade Salt. ICS 67.200.20. Lagos, Nigeria. 2004

44 Countries in Africa have salt fortification standards

Fortification opportunity for salt in Nigeria

Population coverage of a food (whether fortified or not) represents the expected population that may benefit from fortification if it is implemented well. however, there are no data available on population coverage of salt in Nigeria.

Industrial processing of a food represents the industry's feasibility to fortify. however, there are no data available on industrial processing of salt in Nigeria.



Source: From UNICEF database: UNICEF_Expanded_Global_Databases_Salt_HH_with_Salt_Jan_2018

7.2
(grams/capita/day)
Daily food intake
[2, 3]

Presence of monitoring protocols for salt fortification in Nigeria	
External monitoring of domestic production	Yes
Import monitoring of imported food	Unknown

Source for external monitoring protocols: No author. Checklist for Monitoring of Iodised Salt at Factory Level. Nigeria. No date.

Source for import monitoring protocols: IndexMundi. Salt (incl. table salt & denatured salt) & pure sodium chloride, whether or ... Imports by Country in US Dollars. Extracted 20 August 2020. [https://bit.ly/3heCICU], Tridge. Top Importing Countries of Salt. Extracted 20 August 2... more

3 Countries in Africa with mandatory fortification of salt have external monitoring protocols

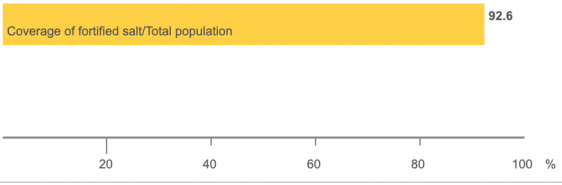
4 Countries in Africa with mandatory fortification of salt have import monitoring protocols

Salt fortification quality/compliance in Nigeria	
Salt in Nigeria that is fortified	95.00%

Source: USI/IDD Taskforce, chaired by Standards Organisation of Nigeria, SON.

13 Countries in Africa have fortification quality/compliance data for salt

Salt fortification coverage in Nigeria



44 Countries in Africa have fortification coverage data for salt

Wheat flour

Mandatory fortification since 2010 ✓

Source: Standards Organisation of Nigeria. Nigerian Industrial Standard, NIS 121:2014, Standard for wheat flour, ICS 67:220.20. Nigeria. 2014.

26 Countries in Africa have legislation for mandatory fortification of wheat flour

Legislation scope for wheat flour in Nigeria	
Type of wheat flour that must be fortified	All types (no exceptions)
Origins or destinations of wheat flour that must be fortified	✓ Domestically produced ✓ Imported ✗ Exports
Intended use of wheat flour that must be fortified	✓ Household ✓ Processed food ✗ Animal feed ✗ Donated food

Source: Standards Organisation of Nigeria. Nigerian Industrial Standard, NIS 121:2014, Standard for wheat flour, ICS 67:220.20. Nigeria. 2014.

Nutrient levels and compounds in wheat flour fortification standard in Nigeria		
Vitamin B6	Pyridoxine hydrochloride	6.00 mg/kg
Vitamin B12	Cyanocobalamin	0.02 mg/kg
Folate (B9)	Folic acid	2.60 mg/kg
Iron	NaFeEDTA	40.00 mg/kg
Niacin (B3)	Niacinamide	45.00 mg/kg
Riboflavin (B2)	Riboflavin	5.00 mg/kg
Thiamin (B1)	Thiamin mononitrate	6.00 mg/kg
Vitamin A	Retinyl palmitate	2.00 mg/kg
Zinc	Zinc oxide	50.00 mg/kg

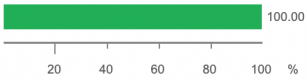
Source: Standards Organisation of Nigeria. Nigerian Industrial Standard, NIS 121:2014, Standard for wheat flour, ICS 67:220.20. Nigeria. 2014.

30 Countries in Africa have wheat flour fortification standards

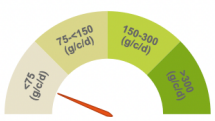
Fortification opportunity for wheat flour in Nigeria

Population coverage of a food (whether fortified or not) represents the expected population that may benefit from fortification if it is implemented well. however, there are no data available on population coverage of wheat flour in Nigeria.

Proportion of wheat flour industrially processed



Source for industrially processed: Talatu Ethan, Standards Organisation of Nigeria. Personal communication. Nigeria. 2017.



49.15
(grams/capita/day)
Daily food availability
[1, 3]

Presence of monitoring protocols for wheat flour fortification in Nigeria	
External monitoring of domestic production	Yes
Import monitoring of imported food	Yes

Source for external monitoring protocols: National Agency for Food and Drug Administration and Control (NAFDAC). National monitoring & evaluation framework for food fortification programmes in Nigeria. October/2014.

Source for import monitoring protocols: National Agency for Food and Drug Administration and Control (NAFDAC). National monitoring & evaluation framework for food fortification programmes in Nigeria. October/2014.

11 Countries in Africa with mandatory fortification of wheat flour have external monitoring protocols

9 Countries in Africa with mandatory fortification of wheat flour have import monitoring protocols

Wheat flour fortification quality/compliance in Nigeria	
Wheat flour in Nigeria that is fortified	100.00%

Source: Talatu Ethan, Standards Organisation of Nigeria. Personal communication. Nigeria. 2017.

31 Countries in Africa have fortification quality/compliance data for wheat flour

Oil

Mandatory fortification since 2000 ✓

Source: Standards Organisation of Nigeria. Nigerian Industrial Standard, NIS 389:2000, Standard for Edible Cottonseed Oil. Nigeria. 2000.

Mandatory fortification denoted in standards published by SON. NAFDAC Regulations also exist from 2005 and are being revised in 2018.

18 Countries in Africa have legislation for mandatory fortification of oil

Legislation scope for oil in Nigeria	
Type of oil that must be fortified	Only subsets
Origins or destinations of oil that must be fortified	✓ Domestically produced ✓ Imported ✗ Exports
Intended use of oil that must be fortified	✓ Household ✓ Processed food ✗ Animal feed ✗ Donated food

Source: Standards Organisation of Nigeria. Nigerian Industrial Standard, NIS 389:2000, Standard for Edible Cottonseed Oil. Nigeria. 2000.

Nutrient levels and compounds in oil fortification standard in Nigeria		
Vitamin A	Unspecified	6.00 mg/kg

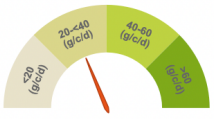
Source: Standards Organisation of Nigeria. Nigerian Industrial Standard, NIS 389:2000, Standard for Edible Cottonseed Oil. Nigeria. 2000.

21 Countries in Africa have oil fortification standards

Fortification opportunity for oil in Nigeria

Population coverage of a food (whether fortified or not) represents the expected population that may benefit from fortification if it is implemented well. however, there are no data available on population coverage of oil in Nigeria. Industrial processing of a food represents the industry's feasibility to fortify. however, there are no data available on industrial processing of oil in Nigeria.

20 40 60 80 100 %



29.4
(grams/capita/day)
Daily food availability
[1]

Presence of monitoring protocols for oil fortification in Nigeria	
External monitoring of domestic production	Yes
Import monitoring of imported food	Yes

Source for external monitoring protocols: Standards Organization of Nigeria. Checklist for Monitoring of vegetable oil at factory level. 2020.

Source for import monitoring protocols: Standards Organization of Nigeria. Checklist for Monitoring of vegetable oil at factory level. 2020.

12 Countries in Africa with mandatory fortification of oil have external monitoring protocols

11 Countries in Africa with mandatory fortification of oil have import monitoring protocols

Oil fortification quality/compliance in Nigeria	
Oil in Nigeria that is fortified	66.00%

Source: Talatu Ethan, Standards Organisation of Nigeria. Personal Communication. Nigeria. 2018.

7 Countries in Africa have fortification quality/compliance data for oil

Rice

Fortification legislation status unknown

Nutrient levels and compounds in rice fortification standard in Nigeria
No fortification standards

0 Countries in Africa have rice fortification standards

Fortification opportunity for rice in Nigeria

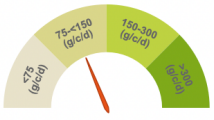
Population coverage of a food (whether fortified or not) represents the expected population that may benefit from fortification if it is implemented well. however, there are no data available on population coverage of rice in Nigeria.

Proportion of rice industrially processed

10.00 %

20 40 60 80 100 %

Source for industrially processed: Talatu Ethan, Standards Organisation of Nigeria. Personal communication. Nigeria. 2017.



126.9
(grams/capita/day)
Daily food availability
[1]

References

1. ***Food Availability (Total and Daily)*** *figures are from the most recent year available in the FAO Food Balance Sheets: http://www.fao.org/faostat/en/#data/CL/metadata.*
2. ***Daily Food Intake*** *for salt is from Powles J et al. BMJ Open 2013;3:e003733. doi:10.1136/bmjopen-2013-003733.*
3. ***Daily Food Availability/Intake*** *categories reflect WHO guidelines for the fortification of wheat and maize flour (http://www.who.int/nutrition/publications/micronutrients/wheat_maize_fortification/en) and for salt (http://www.who.int/nutrition/publications/guidelines/fortification_foodgrade_saltwithiodine/en).*

Notes

- ***Total Food Availability*** *refers to the total amount of the commodity available for human consumption during the year, whereas* ***Daily Food Availability*** *converts this volume into per capita per day estimates.*
- ***Daily Food Availability*** *can be considered a proxy for* ***Daily Food Intake****;* ***Daily Food Intake*** *is a measured estimate of human consumption, usually obtained through dietary surveys.*
- ***Year*** *noted refers to the year mandatory fortification legislation was originally passed.*
- ***Regions*** *reflect regional definitions by the World Bank: https://unstats.un.org/unsd/methodology/m49/.*
- *Industrial production of foods in manufacturing facilities is defined as: Oil – 5 MT/day rated capacity; Salt – 5,000 MT/year raw salt rated capacity; Rice – 5 MT/hour paddy processing rated capacity; Wheat and Maize Flours - 20 MT/day grain processing rated capacity.*