

**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 Kenya**

**16 November 2020**

**SPECIAL THANKS TO ISIYE NDOMBI  
FOR ORGANIZING THE CONSULTATION  
AND CONSOLIDATING FEEDBACK IN  
THIS REPORT**

 [www.FortificationData.org](http://www.FortificationData.org)

 [Info@FortificationData.org](mailto: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.



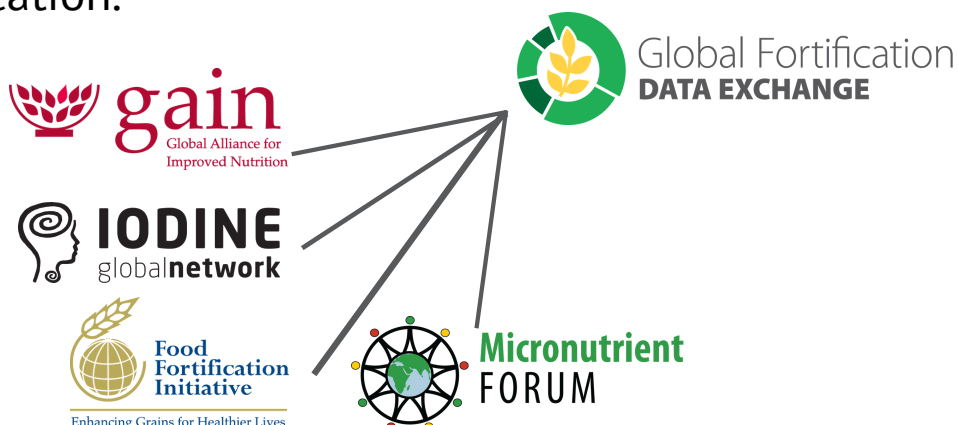
# GOAL OF STAKEHOLDER MEETINGS

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.

A background image showing a group of people, likely in a rural or agricultural setting, carrying a long wooden pole on their shoulders. The image is faded and serves as a backdrop for the text.

**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 IGN regional representatives in Kenya, the GFDx leveraged fortification stakeholder groups to better understand the data needs and their feedback on the GFDx platform.**

Attendees included representatives from:

- Ministry of Health, Division of Nutrition and Dietetics
- Kenya Bureau of Standards
- Kenya Medical Research Institute
- DSM
- National Public Health Laboratory
- World Food Programme (WFP)
- Nutrition International (NI)
- Techno Serve
- United Grain Millers Association (UGMA)
- Iodine Global Network (IGN)
- Jomo Kenyatta University of Agriculture and Technology
- Homabay County
- Scaling Up Nutrition (SUN)



# KEY RECOMMENDATIONS

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

- **Inclusion of Regional data:** Inclusion of Regional data in addition to Country data can be useful for targeted interventions. This also includes data on regional performance of food fortification vehicles or brands within a country.
- **Trends analysis over time and interpretation of data:** This would include indicators and trend for micronutrient status versus fortification trends; Production of fortified foods; compliance levels/coverage.
- **Premix suppliers and quality data:** This would inform the type and quantity of premixes used as well as quality.
- **Key events in a Country:** A small section on key highlights in a Country within a year will be useful information.
- **Include food safety aspects.**
- **Include data on industry and production volumes.**

# KEY RECOMMENDATIONS

“ —

"The MOH-DND and its partners need to put in place a robust guidance for information collection, analysis, storage and visualization to enable tracking of gains of food fortification and systematize future planning."

*-Representative from the Division of Nutrition and Dietetics,  
Ministry of Health*

"This GFDx review work has helped us to rekindle the revamping of our own national database, which functioned well at some stage but has been defunct for some years now. We are going to reinvigorate it. Decision making and future planning on food fortification is largely dependent on how accurately and regularly data is updated at national and global level."

*-Representative from the Division of Nutrition and Dietetics,  
Ministry of Health*

"Good use of data visualization and display technologies should be used to easily communicate the status and trends over time. This capacity should be built into local and global platforms for information sharing and storage for the benefit of users."

*-Representative from Kenya Bureau of Standards*

— ”

# CATEGORIZING RECOMMENDATIONS

## MEDIUM PRIORITY

## HIGH PRIORITY

WITHIN SCOPE

- Include Regional/Economic block dashboards. These Economic blocks use the same standards.

- Post/feature on the website case-studies/experiences, showcasing how the GFDx platform has been used for policy advocacy; industry nudge and scaling-up of staple food fortification

OUT OF SCOPE

- Include tweaks that bring out food safety aspects.

- Update information on premix supply and distribution.
- Regional distribution of industries effecting mandatory food fortification.
- Populate key events on food fortification in the Country.

- 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 global malnutrition deficiency burden is overwhelming. Around 45% of deaths among children under 5 years of age are linked to under-nutrition. These mostly occur in low- and middle-income countries. According to WHO, in 2016, an estimated 155 million children under the age of 5 years were suffering from stunting, while 41 million were overweight or obese.

In Kenya, the trends of malnutrition is worrying, out of a total 1.82 million of children under -5 out of the population of 7 million, (26%) are stunted (low height-for-age) (Kenya National Bureau of Statistics (KNBS) et al. 2015). Although the malnutrition trends show improvement it is estimated that from 2010–2030 under-nutrition will cost Kenya approximately US\$38.3 billion in GDP due to losses in workforce productivity. Efforts are in place to address all forms of malnutrition.

Food Fortification is one of the strategies, but in order to understand the exact nutrition status and to ensure effectiveness in food fortification, there is need to collect and utilize data that can inform decision making nationally and globally. Information on the current food fortification landscape was collected based on desk review work followed by key informant guide interviews to understand the current legislative and operation framework.

Based on the available database, it was evident that Kenya has made significant efforts toward implementation of food fortification. These efforts are coordinated centrally through the Ministry of Health Division of Nutrition and Dietetics under the coordination Kenya National Food Fortification Alliance (KNFFA), a multi-sectorial body of partners with interest and influence on food fortification matters in the Country.

Though there is evidence for a favorable legislative environment, documentation of the efforts on food fortification in Kenya is hindered by inadequate human and infrastructural capacity. Most of the information available at the national and global level is scanty and fragmented making it difficult to inform decision making. There is need for consolidated efforts to strengthen accurate data collection, analysis, storage and visualization to inform future decision making and programming. This requires efforts from the national government, private sector, academia, NGOs, development partners, among other to create the desired information repository that can inform the past, present and future directions in the food fortification arena in the Country. It is believed that the joint efforts between KNFFA and GFDx can yield the desired change that will result in intelligent utilization of data on food fortification for the benefit of all the Kenyans.

**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.**

# NEXT STEPS

**The Kenya stakeholder group found value in the GFDx, and identified the following next steps:**

- Presentation of key findings and recommendations to Kenya National Food.
- Fortification Alliance meeting in Dec 2020.
- Development of strategies for continuous collection and updating food fortification data in Kenya by the first Quarter of 2021.
- Establishment of a platform for information repository and sharing that is accessible to all key stakeholder national and globally by the first Quarter of 2021.
- Creating a joint action plan for updating information under GFDx through the national platform by early 2021.
- Benchmarking with other nations in order to continuously improve GFDx.

# 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 Kenya.**



# COUNTRY DASHBOARD

Last updated: 04-Feb-2021

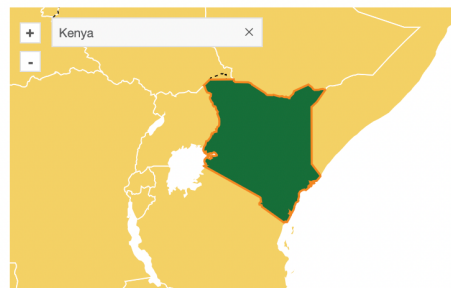


Global Fortification  
**DATA EXCHANGE**



## Kenya Fortification Dashboard

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



### Maize flour

#### Mandatory Fortification since 2012 ✓

Source: Minister for Public Health and Sanitation. Kenya Gazette Supplement No.62, Legislative Supplement No.19, Legal Notice No.62, The food, drugs and chemical substances act. Kenya. 15/June/2012.

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

##### Legislation scope for maize flour in Kenya

Type of maize flour that must be fortified	All types (no exceptions)
Origins or destinations of maize flour that must be fortified	<ul style="list-style-type: none"> <li>✓ Domestically produced</li> <li>✓ Imported</li> <li>✗ Exports</li> </ul>
Intended use of maize flour that must be fortified	<ul style="list-style-type: none"> <li>✓ Household</li> <li>✓ Processed food</li> <li>✗ Animal feed</li> <li>✗ Donated food</li> </ul>

Source: Minister for Public Health and Sanitation. Kenya Gazette Supplement No.62, Legislative Supplement No.19, Legal Notice No.62, The food, drugs and chemical substances act. Kenya. 15/June/2012.

##### Nutrients in maize flour fortification standard in Kenya

Vitamin B6	Pyridoxine	5.00 mg/kg
Vitamin B12	Cyanocobalamin	0.01 mg/kg
Folate (B9)	Folic acid	1.50 mg/kg
Iron	NaFeEDTA	10.00 mg/kg
Niacin (B3)	Niacinamide	25.00 mg/kg
Riboflavin (B2)	Riboflavin	3.50 mg/kg
Thiamin (B1)	Thiamin mononitrate	4.00 mg/kg
Vitamin A	Retinyl palmitate	0.50 mg/kg
Zinc	Zinc oxide	30.00 mg/kg

Source: Minister for Public Health and Sanitation. Kenya Gazette Supplement No.62, Legislative Supplement No.19, Legal Notice No.62, The food, drugs and chemical substances act. Kenya. 15/June/2012.

11 Countries in Africa have maize flour fortification standards

##### Fortification opportunity for maize flour in Kenya

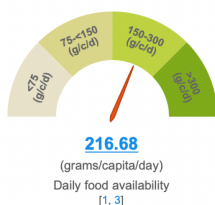
Population coverage of a food (whether fortified or not) represents the expected population that may benefit from fortification if it is implemented well. However, there are no data available on population coverage of maize flour in Kenya.

##### Proportion of maize flour industrially processed

40.00 %

20 40 60 80 100 %

Source for industrially processed: Sicily Matu, UNICEF. Personal communication. Kenya. 2017.



#### Presence of monitoring protocols for maize flour fortification in Kenya

External monitoring of domestic production	Unknown
Import monitoring of imported food	Unknown

Source for external monitoring protocols: Not applicable

Source for import monitoring protocols: Not applicable

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 Kenya

Maize flour in Kenya that is fortified	0.00%
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Source: Sicily Matu, UNICEF. Personal communication. Kenya. 2017.

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

### Salt

#### Mandatory Fortification since 1988 ✓

Source: National Council for Law Reporting with the Authority of the Attorney General. Food, Drugs and Chemical Substances Act. Chapter 254. Revised Edition 2012 [1992]. Kenya, 2012 [https://bit.ly/2K0iWye]

Salt iodization was made mandatory in 1978 when the Food, Drugs and Chemical Substances Act was initially issued. However standards were only set in 1988. Personal communication: Gladys Mugambi, Head Nutrition and Dietetics Unit, Ministry of Health. Nairobi, Kenya, 17/August/2017... [more](#)

#### 44 Countries in Africa have legislation for mandatory fortification of salt

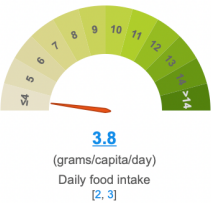
Legislation scope for salt in Kenya	
Type of salt that must be fortified	All types (no exceptions)
Origins or destinations of salt that must be fortified	✓ Domestically produced ✓ Imported ✗ Exports
Intended use of salt that must be fortified	✓ Household ✗ Processed food ✗ Animal feed ✗ Donated food

Source: National Council for Law Reporting with the Authority of the Attorney General. Food, Drugs and Chemical Substances Act. Chapter 254. Revised Edition 2012 [1992]. Kenya, 2012 [https://bit.ly/2K0iWye]

Nutrients in salt fortification standard in Kenya		
Iodine	Potassium iodate	40.00 mg/kg

Source: East African Community. East Africa Standard for Fortified Food Grade Salt- Specification, EAS 35: 2013. United Republic of Tanzania. 2013.

#### 44 Countries in Africa have salt fortification standards

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

Source: From UNICEF database:  
UNICEF\_Expanded\_Global\_Databases\_Salt\_HH\_with\_Salt\_Jan\_2018

#### Presence of monitoring protocols for salt fortification in Kenya

External monitoring of domestic production	Unknown
Import monitoring of imported food	Unknown

Source for external monitoring protocols: Worldatlas. The World's Top Salt Producing Countries. Extracted 20/August/2020. [https://bit.ly/2U9RgBg], IndexMundi. Salt Production by Country (Thousand metric tons). Extracted 20/August/2020. [https://bit.ly/2MIWKwP], British Geologica... [more](#)

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 Kenya	
Salt in Kenya that is fortified	62.00%

Source: Githinji G et al. Potassium iodate levels in processed edible salts available in retail shops throughout Kenya, 2013. Public Health Nutrition. 2018

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

Salt fortification coverage in Kenya	
Coverage of fortified salt/Total population	94.6



#### 44 Countries in Africa have fortification coverage data for salt

### Wheat flour

#### Mandatory Fortification since 2012 ✓

Source: Minister for Public Health and Sanitation. Kenya Gazette Supplement No.62, Legislative Supplement No.19, Legal Notice No.62, The food, drugs and chemical substances act. Kenya. 15/June/2012.

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


Legislation scope for wheat flour in Kenya	
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: Minister for Public Health and Sanitation. Kenya Gazette Supplement No.62, Legislative Supplement No.19, Legal Notice No.62, The food, drugs and chemical substances act. Kenya. 15/June/2012.

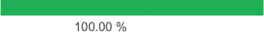
Nutrients in wheat flour fortification standard in Kenya		
Vitamin B6	Pyridoxine	6.50 mg/kg
Vitamin B12	Cyanocobalamin	0.02 mg/kg
Folate (B9)	Folic acid	1.50 mg/kg
Iron	NaFeEDTA	40.00 mg/kg
Niacin (B3)	Niacinamide	60.00 mg/kg
Riboflavin (B2)	Riboflavin	5.75 mg/kg
Thiamin (B1)	Thiamin mononitrate	10.00 mg/kg
Vitamin A	Retinyl palmitate	2.00 mg/kg
Zinc	Zinc oxide	40.00 mg/kg

Source: Minister for Public Health and Sanitation. Kenya Gazette Supplement No.62, Legislative Supplement No.19, Legal Notice No.62, The food, drugs and chemical substances act. Kenya. 15/June/2012.

#### 30 Countries in Africa have wheat flour fortification standards

Fortification opportunity for wheat flour in Kenya	
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 Kenya.	

Proportion of wheat flour industrially processed



Source for industrially processed: Sicily Matu, UNICEF. Personal communication. Kenya. 2017.

#### Presence of monitoring protocols for wheat flour fortification in Kenya

External monitoring of domestic production	Unknown
Import monitoring of imported food	Unknown

Source for external monitoring protocols: Not applicable

Source for import monitoring protocols: Not applicable

#### 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 Kenya	
Wheat flour in Kenya that is fortified	100.00%

Source: Sicily Matu, UNICEF. Personal communication. Kenya. 2017.

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

## Oil

## Mandatory Fortification since 2012 ✓

Source: National Council for Law Reporting, Laws of Kenya, Chapter 254, Food, Drugs, and Chemical Substances Act. Kenya. 2012.

## 18 Countries in Africa have legislation for mandatory fortification of oil

## Legislation scope for oil in Kenya

Type of oil that must be fortified	All types (no exceptions)
Origins or destinations of oil that must be fortified	<ul style="list-style-type: none"> <li>✓ Domestically produced</li> <li>✓ Imported</li> <li>✗ Exports</li> </ul>
Intended use of oil that must be fortified	<ul style="list-style-type: none"> <li>✓ Household</li> <li>✓ Processed food</li> <li>✗ Animal feed</li> <li>✗ Donated food</li> </ul>

Source: National Council for Law Reporting, Laws of Kenya, Chapter 254, Food, Drugs, and Chemical Substances Act. Kenya. 2012.

## Nutrients in oil fortification standard in Kenya

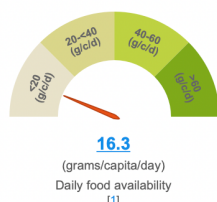
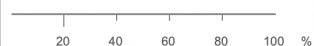
Vitamin A	Retinyl palmitate	30.00 mg/kg
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Source: East African Community, Final Draft East African Standard, Fortified Edible Oils and Fats - Specification, FDEAS 769:2018. Tanzania. 2018.

## 21 Countries in Africa have oil fortification standards

## Fortification opportunity for oil in Kenya

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 Kenya. Industrial processing of a food represents the industry's feasibility to fortify. However, there are no data available on industrial processing of oil in Kenya.



## Presence of monitoring protocols for oil fortification in Kenya

External monitoring of domestic production	Unknown
Import monitoring of imported food	Unknown

Source for external monitoring protocols: Not applicable

Source for import monitoring protocols: Not applicable

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

## Rice

## Fortification legislation status unknown

## Nutrients in rice fortification standard in Kenya

No fortification standards

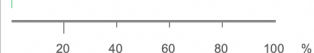
## 0 Countries in Africa have rice fortification standards

## Fortification opportunity for rice in Kenya

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 Kenya. Industrial processing of a food represents the industry's feasibility to fortify. However, there are no data available on industrial processing of rice in Kenya.

## Proportion of rice industrially processed

0.00 %



Source for industrially processed: Sicily Matu, UNICEF Personal communication. Kenya. 2017.



## 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](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](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.