

# GLOBAL STATUS OF FOOD FORTIFICATION COMPLIANCE OR QUALITY

Technical Brief | May 2021



## Global Fortification DATA EXCHANGE

*Compliance and/or quality data, or the proportion of food that is fortified in a country, are a reflection of how well mandatory food fortification programs are being implemented by food producers and monitored by food control systems. However, availability of these data are sparse, suggesting that few countries monitor for food fortification, despite mandatory legislation.*

## INTRODUCTION

After mandatory fortification legislation and standards are passed, how do we know whether food is actually being fortified?

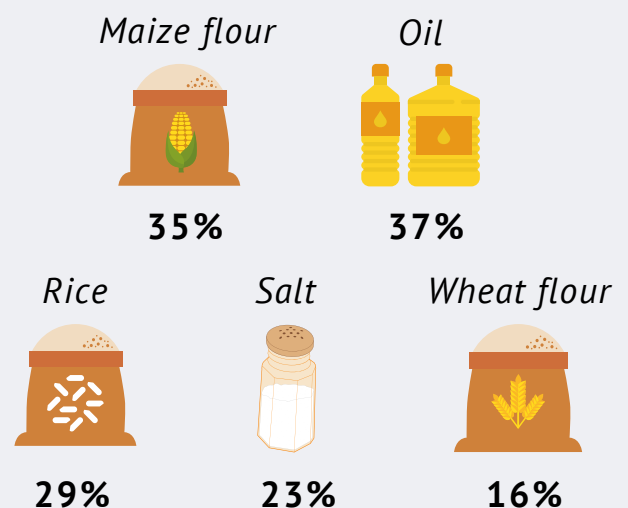
Ideally, the proportion of food that is fortified should be assessed by the government entity responsible for food control (regulatory monitoring), which may include activities such as an audit and qualitative and/or quantitative tests of samples. When adherence to fortification is assessed by an authorized government agency and at point of production and/or import, GFDx considers this **compliance data**. (For GFDx methodology for defining types of compliance, see Figure 1.)

## KEY MESSAGES

Even though a country may have legal documentation indicating mandatory fortification of a food, food producers may not comply with fortification standards. In many cases, countries do not have any data to describe producer compliance with fortification.

Despite successes in passing fortification legislation, only 36/142 countries have data that indicates regulatory monitoring and enforcement is in practice. Of those countries, only 18 have compliance levels above 80%.

Countries with mandatory fortification with compliance and/or quality data for each food:



# THERE ARE DIFFERENT METHODOLOGIES TO MEASURE COMPLIANCE

Countries may differ in their methodologies for measuring compliance (Figure 1), which can impact the interpretation of how much food is fortified in the country. The best measure uses product volumes to calculate the proportion of food that is fortified. If volumes are not available, then volumes can be estimated through the known market share of a producer.

If volumes and market share are not available, then a simple calculation of the number of samples/facilities meeting standards compared the total number of samples/facilities monitored can provide a crude estimate of compliance – with the important assumption that the number of samples/facilities monitored are representative of the total industry.

**FIGURE 1. VARIATIONS OF COMPLIANCE**

Countries may differ in how they measure compliance, which can impact the interpretation of how much food is fortified in the country.

METHODOLOGY	HOW IT'S MEASURED	EXAMPLE
<b>BY PRODUCT VOLUMES</b>	The total amount (in metric tons) and percentage of industrially processed food that is required by legislation to be fortified that is fortified at levels that meet relevant standards.	100,000 metric tons of flour is produced in a country. 50,000 metric tons of flour met minimum requirements for fortification; 50,000 MT did not. Compliance is 50%.
<b>BY MARKET SHARE</b> (Requires accurate estimations of market share)	If production/import quantity of compliant producers and importers is not known but market share of companies or brands are available.	There are two brands of flour in a country. Brand X, with 30% market share, met minimum requirements for fortification. Brand Y, with 70% market share, did not. Compliance is 30%.
<b>BY FACILITES OR SAMPLES MONITORED</b> (Assumes samples were collected in a manner that represents the food industry as a whole)	The number of facilities inspected/samples collected that meet standards (pass quantitative tests) divided by the total number of facilities or samples	There are 20 flour mills in a country. Samples from 10 mills met minimum requirements for fortification; 10 did not. Compliance is 50%.

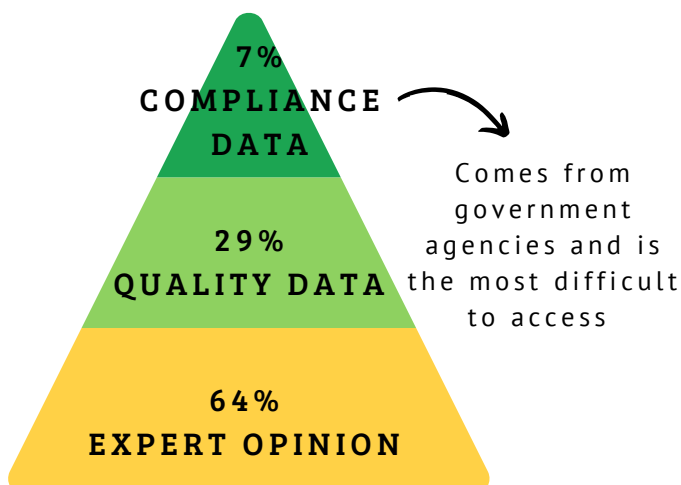
QUALITY OF DATA

## WHEN COMPLIANCE IS UNAVAILABLE

If the proportion of food that is fortified was not measured by government agencies but instead by public, private (non-government) or civil society stakeholders. Often, these efforts occur outside of production or import control, and instead measure samples from market/retail or households. Since they usually cannot be used for enforcement of national standards and may not be an accurate reflection of how well a food is fortified at production, GFDx calls these fortification *quality* data.

If compliance and quality data do not exist, GFDx may have to rely on expert opinion, which are subjective estimates of the proportion of food that is fortified, based on that person’s experience in the country. Expert opinions are not validated and may vary widely from person to person. However, they provide a “best guess” where no other data is available.

**FIGURE 2. WHAT KIND OF DATA DOES THE GFDX HAVE?**

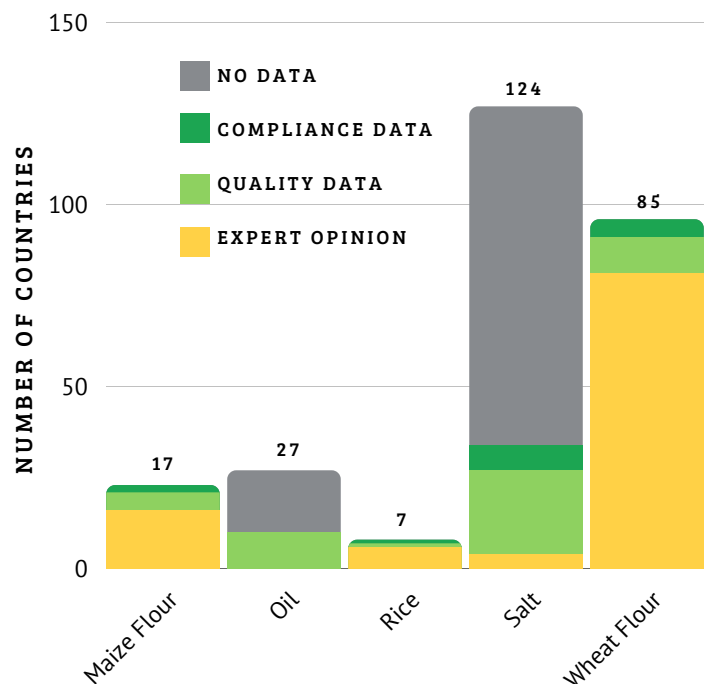


Ideally, compliance data is used to measure the percent of fortified foods however, there is less compliance data available compared to the amount expert opinions available (Figure 2).

## RESULTS

Considering the number of countries with mandatory fortification, the number with compliance (Industry compliance by production volumes, market share and facilities/samples monitored) data are low (Figure 3).

**FIGURE 3. NUMBER OF MANDATORY COUNTRIES WITH DATA, 2016-2019**



Only a quarter of the countries with mandatory fortification have available compliance or quality data from the past six years (2013-2019) (Figure 3). There is no known compliance data for oil; all estimates of the proportion of oil fortified come from third-party assessments of fortified oil.

## QUALITY DATA CAN 'FLAG' PROBLEMS

Although quality data is not a complete picture of how well food is being fortified at production, many more countries have quality data from samples collected from market or households (**Figure 4**). This is particularly true for salt, which is often measured in standard household surveys. Quality data can 'flag' gaps in regulatory monitoring and help partners advocate for improvements.

## REGULARITY OF DATA

It is not enough for compliance data to be collected once - compliance data should also be regularly collected and reported to indicate trends in the quality of regulatory monitoring of compliance. Although the number of countries with compliance data is low, at least 80% of these countries have multiple years of data (**Figure 5**).

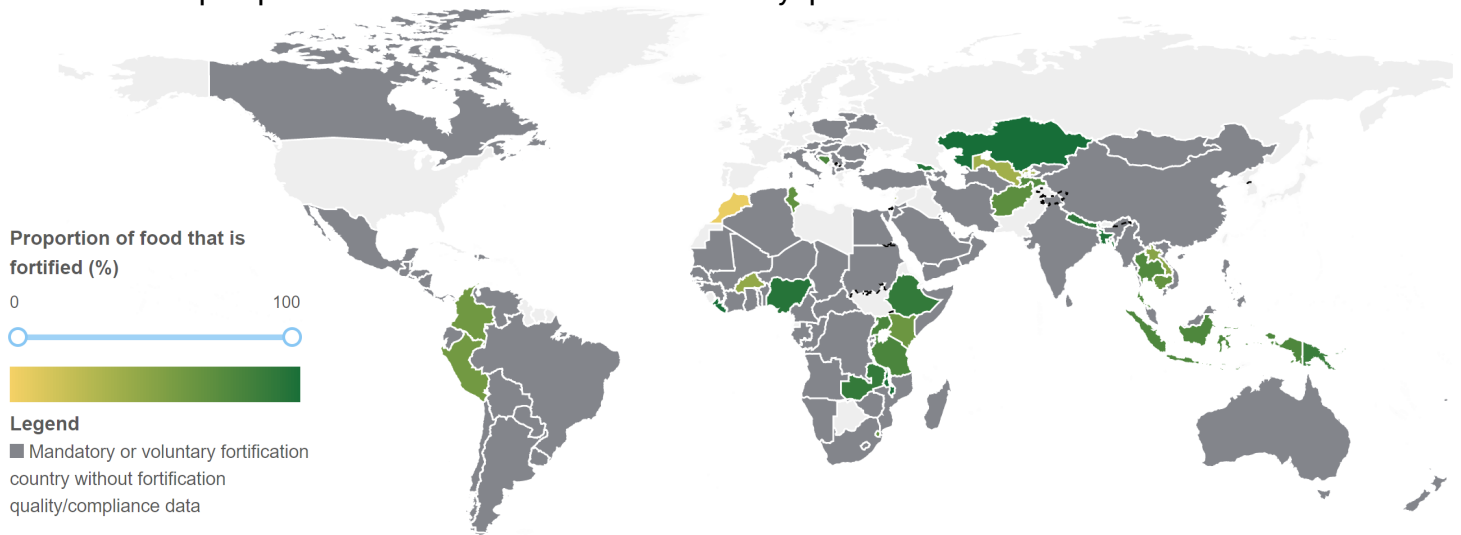
**Figure 5** summarizes the number of countries with data and the average percent of industrially processed foods that is fortified, by food vehicle among countries with mandatory fortification.

## CONCLUSIONS

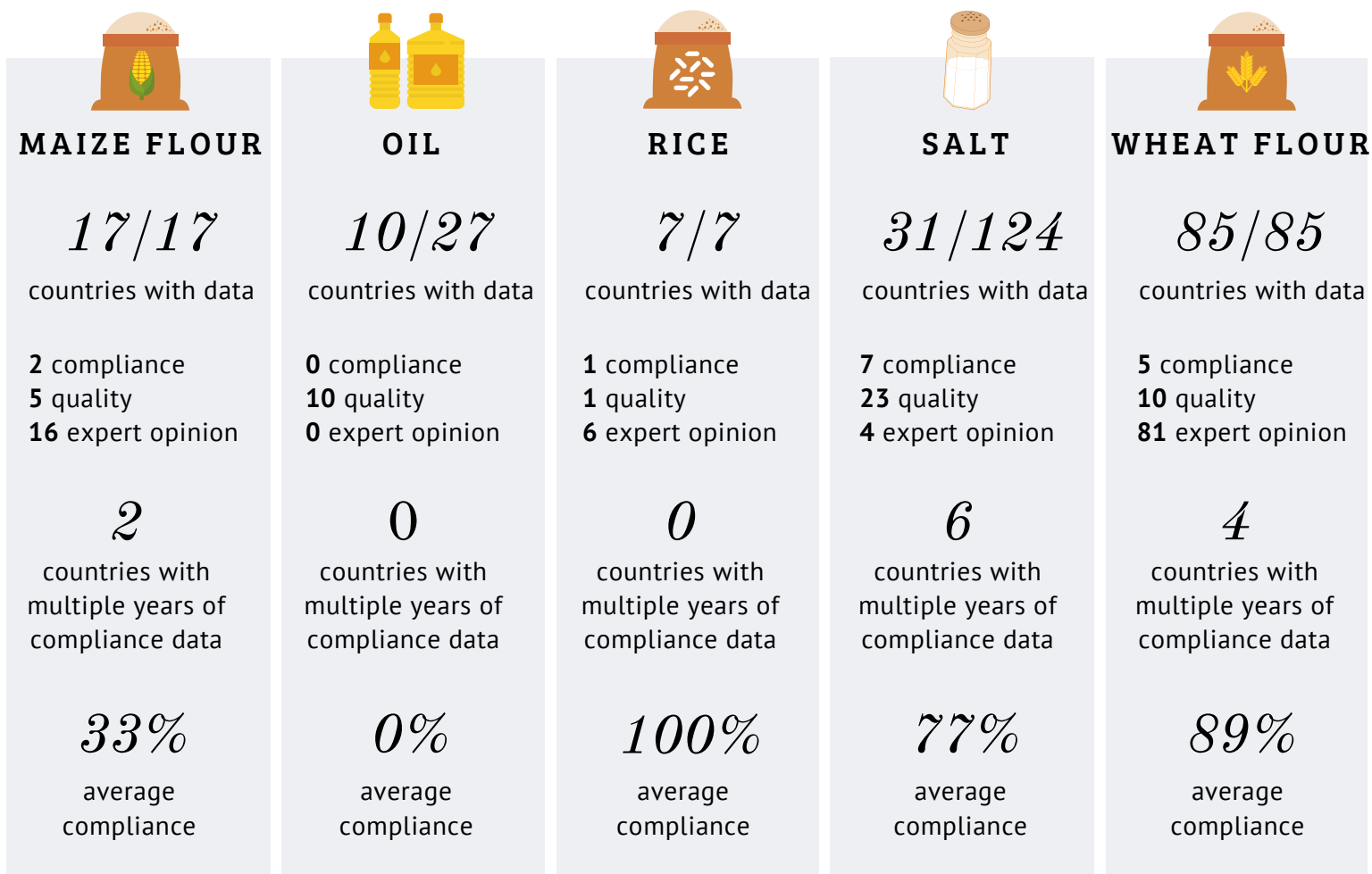
Compliance data is key to understanding how well a fortification program is operating and whether fortified foods are reaching the population. Only a quarter (36/142) of countries with mandatory fortification have any data on compliance or quality of food fortification. Of those with compliance data, about half (7/12) have more than 80% compliance with food standards. Further, countries do not regularly assess the proportion of food that is fortified each year - 75% (9/12) of countries with compliance data have more than one year of data. Quality data and expert opinion data provides a complementary picture of how much food is fortified but is not a replacement for compliance data.

### FIGURE 4. TOTAL QUANTITY AND PROPORTION OF FORTIFIED FOOD VEHICLE

28 countries with mandatory fortification have compliance or quality data on proportion or amount industrially processed **salt** that is fortified



**FIGURE 5. COMPLIANCE OR QUALITY DATA AVAILABILITY IN COUNTRIES WITH MANDATORY FORTIFICATION**



## SUGGESTED CITATION

Global Fortification Data Exchange.  
Technical Brief: Global status of food fortification compliance or quality. 2021.  
Accessed dd/month/yyyy.  
[<http://www.fortificationdata.org>.]

## CONTACT US

If you have any questions, want to share your experience using the GFDx, contribute data, or provide any other comments and feedback, please reach us at the email below or visit our website to learn more about fortification resources.

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

 [Info@FortificationData.org](mailto:Info@FortificationData.org)



## METHODS

- GFDx populates its compliance and quality data through a bi-annual survey, aiming to reach 196 countries. Outside of surveys, the GFDx is updated when new information is received directly from fortification partners and/or national stakeholders.

## RESOURCES

- Global Alliance for Improved Nutrition (GAIN) & Project Healthy Children (PHC). 2018. Regulatory monitoring of national food fortification programs: A policy guidance document. *Global Fortification Technical Advisory Group (GF-TAG)*. (available in English, Spanish, French, and Russian  
[<https://fortificationdata.org/resources/#tab-id-4>]