FortifyMIS User Manual

A Handbook for the Customization and Utilization of a Management Information System to Monitor Compliance of National Fortification Programs

Version 2.0

July 2019

Table of Contents

Key Acronyms

FFI   Food Fortification Initiative
GAIN   Global Alliance for Improved Nutrition
GMP   Good Manufacturing Practices
HACCP   Hazard Analysis of Critical Control Points
MIS   Management Information System
PHC   Project Healthy Children
QA/QC   Quality Assurance / Quality Control

Introduction to the MIS

This section provides a background to regulatory monitoring and management information systems.

What is an MIS?

A **management information system (MIS)** is a computerized platform to facilitate data collection, consolidation, aggregation, and usage for decision-making. An MIS can store and process data from multiple users, combine the data together, and share data between stakeholders to better monitor a process or program, such as a country's food fortification program. An MIS can also automate data compilation into reports to allow for rapid, real-time data viewing for decision making.

An MIS has the benefit of being able to:

- Reduce the resource burden for monitoring;
- Speed up reporting and sharing of data by tracking information in real time;
- Decentralize data collection to reduce fraud and better triangulate data; and
- More efficiently and effectively use data for decision-making in a timely, cost-effective, and sustainable way.

How Does an MIS Fit within a Fortification Compliance Monitoring Framework?

All programs that are set up to address a specific problem need a clear **impact pathway** that outlines how program inputs and activities will achieve the program goal. The same is true of fortification programs, which are designed to improve micronutrient intakes and thus nutritional status through increased consumption of a fortified food. Monitoring key indicators at different levels of the pathway is critical to allow for tracking progress against plans and identifying when adjustment of activities is required to improve outputs, outcomes, and impact.

For fortification programs, **fortified food standards** are put in place to define the level of specific nutrients added to a food, which is required to have a nutritional impact. Standards are developed based on a food's consumption among a population, production at an industrial level, bioavailability of specific nutrient compounds that are allowed to be used, and other factors, such as cultural practices for food usage (e.g. cooking) and typical distribution and marketing practices (e.g. packaging and storage).

Compliance monitoring is the process by which producers, importers, and government regulatory or food control agencies ensure that fortified food products meet relevant specifications as laid out in standards. There are many components to compliance monitoring, which are summarized below. A more comprehensive review of the fortification monitoring framework can be found in a monitoring manual, available upon request.

As the gatekeepers of fortification, industry food producers are responsible for fortifying foods according to the relevant national or regional standards that govern where their products are being sold. They do this through a process of **internal monitoring**, which are the procedures, actions, and tests carried out by industry to 1) produce a food in a manner that is expected to achieve the specifications of the fortification standards, known as **quality assurance (QA)** and 2) to ensure that the final product actually adheres to said specifications, known as **quality control (QC).**

Importers and exporters of fortified foods are also responsible for ensuring the conditions in which their products are sold, stored or warehoused meet relevant standards, and do not jeopardize the quality and safety of the products. While importers and exporters do not manufacture the foods, they should ensure that fortified foods are accompanied by relevant certificates of analysis (CoA), documents endorsed by a competent authority

that certify or verify that the fortified foods comply with the relevant specifications and standards where products are being sold.

FORTIFICATION PROGRAM MONITORING ALONG THE PATHWAY
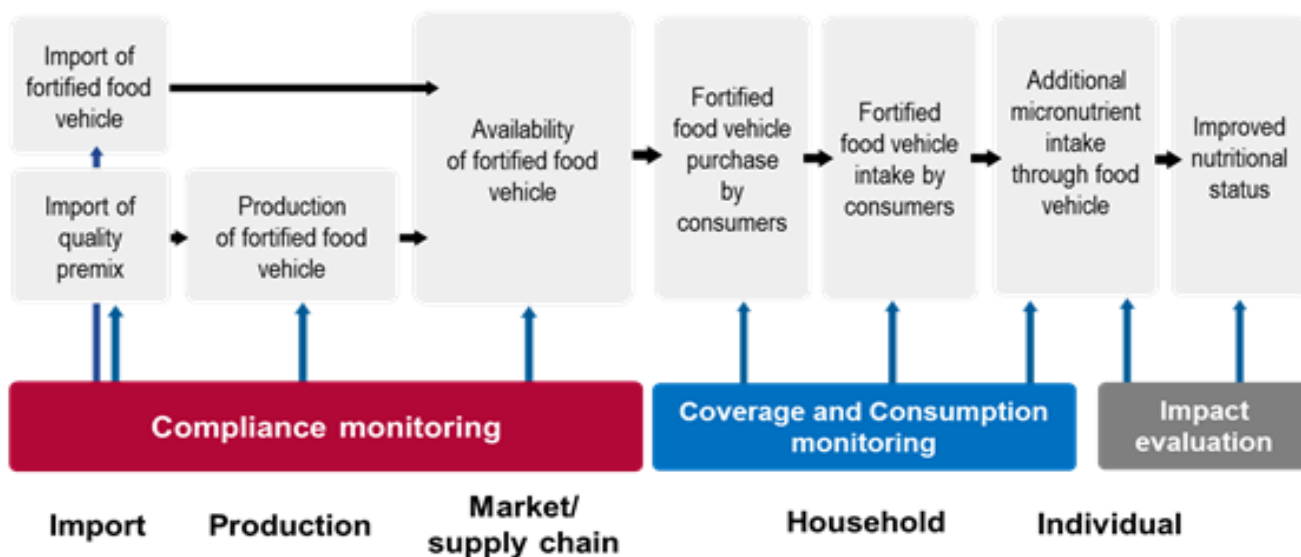
Government regulatory or food control agencies are responsible for **regulatory monitoring**, which are the procedures, actions, and tests carried out to verify that industry is 1) producing a food in a manner that is expected to achieve the specifications of the standards (**technical audit**) and 2) ensuring the final product actually adheres to said specifications (**product inspection**). Regulatory monitoring can be split into three components: **external monitoring** at the production site; **import monitoring** at border entry points or at warehouses of importers; and **commercial monitoring** at retail and food distribution locations.

Many national fortification programs currently use paper or Excel based data collection templates to conduct compliance monitoring (e.g. GMP and HACCP checklists used by industry producers, inspection checklists used by regulatory authorities at import and production sites, and product test results from laboratories). These data are manually compiled, aggregated, analyzed, and organized into reports for decision-makers. Even in programs with strong monitoring systems, paper based monitoring is a time and labor-intensive process, which can delay data compilation, results generation, reporting, and ultimately decision making. A high level of stakeholder coordination is also needed to solicit and receive required information and share among the various producers and users of different data.

Using an MIS does not replace any existing monitoring system and does not create a new monitoring system. An MIS can only facilitate, streamline, and digitize an existing monitoring system or framework that is in use. It uses existing monitoring procedures that must already be in use to more effectively and more rapidly facilitate data collection, aggregation, and usage. Where relevant, a roll-out of the MIS as a monitoring tool should be accompanied by complementary efforts to support and strengthen national monitoring systems, including building capacity for QA/QC at industry level, technical auditing and inspections at the regulatory or food control level, and product testing methods at laboratory level.

When Should Countries Consider Using an MIS?

In order to use an MIS as a tool to facilitate compliance monitoring of the fortification program, a number of criteria must first be in place. These refer to processes and procedures that indicate that a fortification compliance monitoring framework is already in place and being used to some degree, no digital system is already available that would track such components of a fortification program, as well as various pieces of information that will be necessary to customize the MIS to a specific country context. These criteria include:

1. A country should have **mandatory legislation** or a compulsory standard in place for producers and/or importers of one or more fortified foods. This provides a legal mandate to monitor compliance with relevant standards and regulations. A copy of the relevant standards should be available.

2. A country should have a **monitoring framework** in place that provides details on the monitoring procedures and standard practices; data collection tools, reports, and their sharing and usage; and roles and responsibilities of all stakeholders involved in fortification monitoring. The monitoring framework makes the mandatory legislation actionable and should provide guidance for both internal monitoring and regulatory monitoring (including external monitoring, import monitoring, and commercial monitoring).

3. A country should have **producers or importers** who are already manufacturing (or at least attempting), importing, distributing, and/or marketing fortified foods. Components include:
   a. Producers should already be conducting internal monitoring (QA/QC) to ensure their products regularly meet standards.
   b. Copies of their data collection forms or checklists should be made available to customize the MIS, including forms that collect data on the quality of inputs (e.g. fortification premix or raw materials); fortification equipment, calibration, and maintenance documentation; fortification procedures (e.g. premix addition); and end product qualitative and/or quantitative analysis.
   c. The names (and geographic locations) of the producers, brands, manufacturing sites, importers, and import sites should be available.

4. A country should have an adequate number of **food safety regulatory inspectors** who can be or are already trained and deployed for food fortification purposes. An adequate number refers to enough individuals to cover all domestic production and imported food inspection needs for the country.
   a. Inspectors should already be conducting regulatory monitoring (technical audits and inspections) where relevant (at production sites, import sites, and commercial sites) to verify the compliant production and importation of fortified foods.
   b. Copies of data collection forms or checklists should be made available to customize the MIS.

5. A country should have adequate **laboratory capacity** to test product samples qualitatively and/or quantitatively for the nutrients added to fortified foods.
   a. Data collection sheets and reporting templates should be made available to customize the MIS.
   b. The names and locations of laboratories, either public or private, that are used for regulatory purposes should be available along with a listing of the types of tests that can be conducted and their methodologies. Although these labs will usually be found within the country, external labs outside of the country that may be used for quality testing purposes are also adequate for meeting this criterion.

6. A country should have **political commitment** to manage the fortification program within a specific government unit along with adequate budget allocations outside of donor funding and support. Governments should be able to provide initial information on all fortification programs, including the current situation, needs, identified constraints, and goals. Government leaders should be ready and willing to motivate inspectors and the food industry around the need to improve monitoring practices and should be able to ensure access to the required inspectors during the designated period of project engagement.

7. A country should have **hosting capability** for the MIS platform. Two options are available to governments for hosting:
   a. The MIS can be hosted on a cloud server, which will provide a high level of data stability, security, and linkages to MIS system improvements and maintenance.
   b. The MIS can also be hosted on a local server, such as if there are national restrictions preventing the usage of the cloud server. In this case, the government must be able and willing to provide an in-country server, including all server, maintenance costs, and IT capabilities, where the MIS will be hosted.

Basic Features of FortifyMIS

FortifyMIS is a **web-based** MIS that supports compliance monitoring of fortification programs (via inspections at producer and import levels) and performance measurement (via inspections at markets). FortifyMIS can be used on a computer, mobile phone, or tablet device. Although it is web-based, it is designed to also be used offline where WIFI or cellular data is not available and will automatically sync to the server once online again.

FortifyMIS can be completely **customized to any country context** with their own data collection tools, dashboards, and reports based on needs and specific interests. This includes customizing the language of the MIS, the types of users, and user roles and permissions.

FortifyMIS can **flag outliers to facilitate rapid corrective action** and communication between food producers and food regulators/inspectors. Dashboards and reports are automatically generated with key charts and graphs for reporting and data visualization in real time for program managers and other decision makers.

FortifyMIS is **safe and secure**. Each user has a unique login and password and is set up with individual roles, access rights, and viewing privileges as defined by a country's monitoring framework. Only users with the right permissions and roles can access the data. Identifying, proprietary, or sensitive data can be blinded to ensure user confidentiality.

FortifyMIS **does not create any new work or new procedures.** It simply digitizes existing procedures so that they can occur more effectively and more rapidly to facilitate responsive decision-making.

Who are the Users of FortifyMIS?

There are 4-5 main users in a standard MIS set-up. More or fewer types of users can also be included or excluded depending on how a country's fortified foods are reaching markets or how a country wishes to utilize the MIS. The below sections provide descriptions of each user and what each user's generic role is within the MIS. These roles can be modified based on country needs and with agreement between country stakeholders and users.

The MIS is designed to decentralize data collection, such that each user inputs their own data that they are regularly collecting and each user has access to specific data that they regularly use to make decisions. Data are automatically shared between users who are granted access rights. Data are automatically aggregated at levels discussed and agreed between stakeholders to preserve the security and confidentiality of proprietary or sensitive pieces of information.

It should be noted that there is no requirement or automatic data linkage made between government fortification program managers and implementing partners (e.g. FFI, GAIN, PHC, or other partners) or global reporting mechanisms (e.g. Global Nutrition Report, Global Fortification Data Exchange). Indeed, if governments do not want to share their data to these sources, there is no requirement to do so and likewise there is no way for these sources to access national level data otherwise without being given a country login. However, such linkages will be encouraged and made available should a country choose to report, especially to global reporting mechanisms for global tracking against indicators of quantity, quality, and compliance of fortified foods available to consumers.

Automatic data linkages can also be made between the MIS and any other information systems currently in use in a country (e.g. HMIS or DHS) if there are indicators in such systems that would be useful in better understanding a country's fortification program.

Country Administrators

The Country Administrators are responsible for customizing the MIS to the country context. One person or a small group of people within the country should be chosen as the administrator, typically from the government program management unit, a national fortification alliance, or coordination mechanism. This person or group

should be trusted by all users and should be well trained in all aspects of the MIS to provide orientations/trainings to new users and troubleshooting assistance. The Country Administrator has access to the following MIS areas:

- **Home** panel, where the standard types of reports and dashboards for each user can be set.
- **Manage Translations** panel, where the MIS can be translated into the local language(s).
- **Manage Users** panel, where users can be added, deleted, or modified and user permissions are set; and where notification settings are adjusted.
- **Master Lists** panel, where lists of places, standards, producers, importers, markets, and laboratories within the country can be set and modified.
- **Data Collection** panel, where cohorts, inspection checklists, quality measures, and other data collection initiatives can be specified.

Producers

Producers are responsible for conducting internal monitoring to ensure fortified foods comply with relevant standards. Producers can have one or several logins for each production site and cannot access the details of any other site, even if it is another site owned by the same producer or producing the same brand of food. Producers have access to the following MIS areas:

- **Home** panel, where producers can see reports and dashboards of their current production and compliance status.
- **Data Collection** panel, where producers can input data related to their QA/QC practices, including a premix reconciliation calculation and any qualitative or quantitative product test results done in-house. Product tests can also be requested of an external laboratory through the sampling form. Producers can manage their own inspection checklists and data collection forms.

Food Control or Regulatory Inspectors

Inspectors are responsible for verifying that fortified foods at production, import, and market levels are compliant with relevant standards. Each inspector has his/her own login and can be restricted to one or more types of inspections. Inspectors have access to the following MIS areas:

- **Home** panel, where inspectors can see reports and dashboards of their recent inspections and current status of compliance.
- **Master Lists** panel only for list of Producers and Importers. This allows an inspector to add a new producer or a new importer at point of collection so that an inspection can proceed without having to contact the administrator to add the new site.
- **Data Collection** panel, where inspectors can input data related to their regulatory monitoring practices, including technical audits, premix reconciliation calculation verification, and any qualitative or quantitative product test results done by the inspector. Product tests can also be requested of an external laboratory through the sampling form.

Laboratory Analysts

Laboratory Analysts are responsible for performing requested qualitative and/or quantitative tests on fortified food products and reporting back the results to the inspectors or producers who have requested them. Each laboratory has one login where requests are received and the results are reported back to the requestor. Laboratory Analysts have access to the following MIS areas:

- **Home** panel, where Laboratory Analysts can see reports and dashboards of their recently requested and completed tests.
- **Laboratory Services** panel, where Laboratory Analysts can add or modify the basic information of the laboratory, including location, contact information, the types of tests or services that can be performed,

and their methodologies. Laboratory Analysts can also view test requests from various users and report back on the results once the test has been performed.

Program Managers

Program Managers are responsible for the overall coordination of a fortification program and require data from many sources to make decisions. Each country should have one Program Manager within a government unit, national fortification alliance, or other coordination platform. The Program Manager in some countries might be the same as the Country Administrator. Program Managers have access to the following MIS areas:

- **Home** panel, where Program Managers can see the current status of fortification, including aggregated production figures, compliance, number of inspections and laboratory requests completed, etc.

Adaptations for FortifyMIS

Although FortifyMIS was originally designed as an information system specific to compliance monitoring for fortification programs, it is very flexible and can easily be broadened in scope, depending on the needs and interests of a country. This could include, but is not limited to monitoring food safety aspects and monitoring packaging and labelling. As long as a food product has a standard and monitoring framework that stipulates how it should be evaluated for quality or compliance, and as long as food control and regulatory bodies have a mandate to monitor and enforce against such standards, FortifyMIS can be adapted for this purpose. Currently, countries piloting FortifyMIS are using the system to track and monitor:

- Compliance of breastmilk substitutes against the International Code of Marketing of Breastmilk Substitutes;
- Aflatoxin levels of certain foods;
- Food safety aspects of pesticide and heavy metal levels in foods destined for export.

Complementarity with FORTIMAS

Fortification Monitoring and Surveillance (FORTIMAS) is NOT a database or an MIS, but is a methodology to analyze certain pieces of information at regular intervals to estimate population coverage of fortification programs and track changes in micronutrient status and therefore impact of fortification programs. FORTIMAS uses the below "formula" to describe the public health success of an effective fortification program:
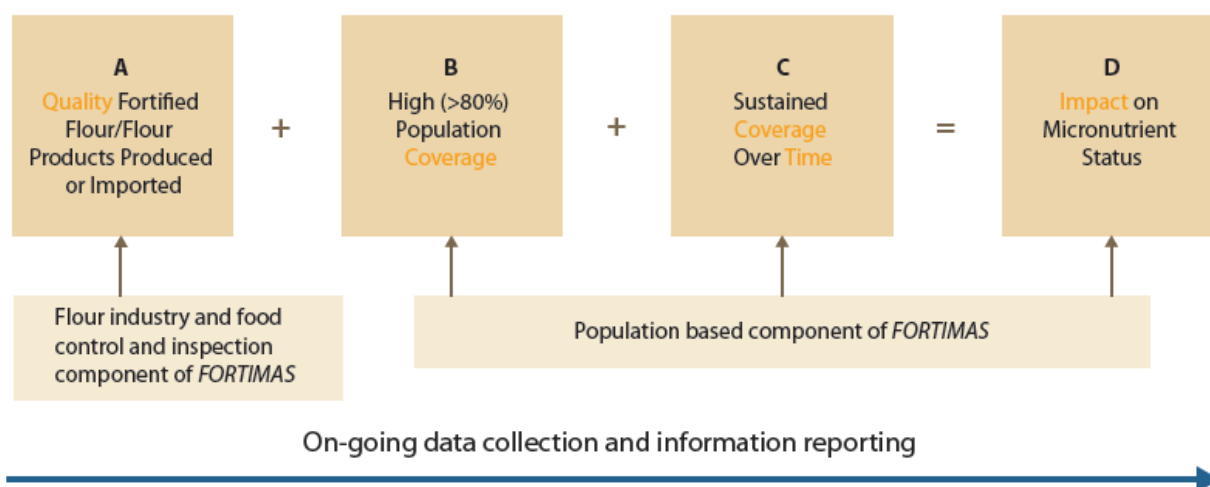
FortifyMIS can be one way of easily tracking and managing data to fulfill Box A: Quality Fortified Foods Produced/Imported above for the FORTIMAS method. The main differences between the two are in the table

below. For more information on FORTIMAS, visit http://www.smarterfutures.net/fortimas where you can download FORTIMAS manuals and documentation.

Key Characteristics of FortifyMIS and FORTIMAS

	Fortification Management Information System (FortifyMIS)	Fortification Monitoring and Surveillance (FORTIMAS)
Purpose	To digitize regulatory monitoring data collection, analysis, and reporting processes to assess the quality and safety of fortified foods being produced and imported.	To track trends in the effectiveness of a fortification program over time in populations documented to regularly consume fortified foods, through estimates of population coverage.
Data Collection	Primary data collection from producers, food control agencies, customs agencies, and laboratories during their normal regulatory monitoring activities at production, import, and market levels. Data collection is online and input is decentralized to each data collector and user.	Primary data collection at sentinel sites and use of existing private- and public-sector data (such as that which would be available via FortifyMIS) to triangulate and estimate coverage and impact. Data collection is offline and manual, generally using survey forms and spreadsheet tools, such as Excel.
Sample Size	All QA/QC, inspection, audit, and laboratory data are entered in real time, as they are collected. All registered producers and importers are entered into FortifyMIS.	Sentinel sites are selected and data from these sites are used to make inferences about the total population within a geographic area.
Indicators of Interest	- Total amount of fortified food produced, imported, and marketed. - Total amount of fortification premix purchased and utilized. - Proportion of food which meets national standards, based on triangulation of QA/QC, inspection, and audit data. - Relative market share of products in the MIS by brand and producer. - Other indicators can be added as a country chooses, including micronutrient deficiency data, import/export and trade data, or any other food quality or safety indicator more generally.	- Estimation of population coverage based on total amount of fortified food produced, imported, and marketed. - Proportion of food which meets national standards, based on reports from food control agencies. - Quantity of adequately fortified food marketed in a defined geographic area. - Prevalence of households that purchase and have fortified foods in the home found during convenience sampling of households. - Trends in prevalence of target micronutrient deficiency within a population based on sentinel data collection points (e.g. health facilities or schools) or other health system based micronutrient surveys (e.g. DHS or HMIS).
Data Analysis and Use	Auto-generation of common reports and dashboards useful for making decisions on regulatory monitoring, such as resources needed for conducting inspections / audits and prioritization of specific types of food producers or specific geographic areas based on audit and inspection results. Reports can be aggregated or stratified by type of food, producer, brand, geographic area, time period, or any other relationship built within the database.	Manual data entry into Excel templates or processing with SPSS or other statistical software, which outputs a trend chart of the fortification program over time. Information is useful for tracking progress and impact over time and for deciding when to best conduct a program evaluation. Information is not automatically disaggregated, but instead designed to reflect a total view of a particular geographic area based on sentinel site data. However, data could be disaggregated in the user's analysis by sentinel area or population group.

How to Use FortifyMIS: An Instruction Manual

In this section, you will learn how to use the various features of FortifyMIS. Each module will include screenshots to illustrate key areas. Each module will also include a series of practice exercises for you to practice what you have learned.

This section serves as a reference and training guide for partners and Country Administrators to train new users within the country and to troubleshoot when existing users have a question or need support. A basic understanding of computers or smart devices is required and may be the first step to training a new user who might be unfamiliar with these technologies.

Starting FortifyMIS

FortifyMIS is located online at the following web address: https://fortifymis.org

The first screen you will see is the login page. Each new user will receive a confirmation message to their email address with initial login credentials. Login using these credentials. If you have not received a confirmation email, click 'Didn't receive confirmation message?' at the bottom of the login page. If you have forgotten your password, click 'Forgot password?'.

FortifyMIS can be accessed through any computer, or through the web browser of any smart device (smartphone or tablet). If you would like to create a shortcut "App" for your smart device, first access FortifyMIS through the web browser.
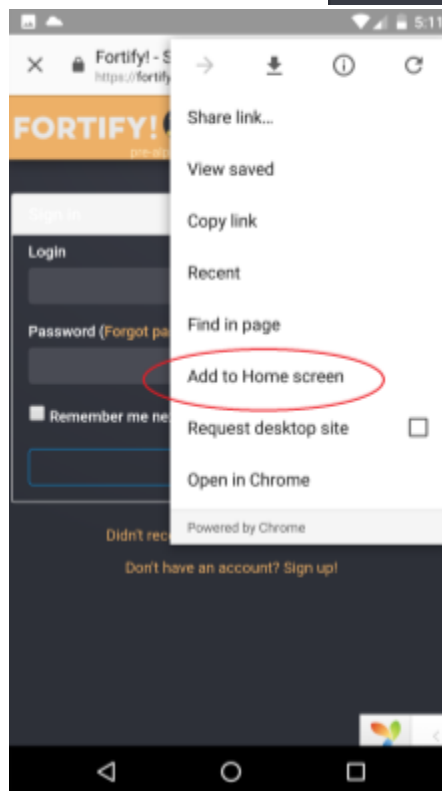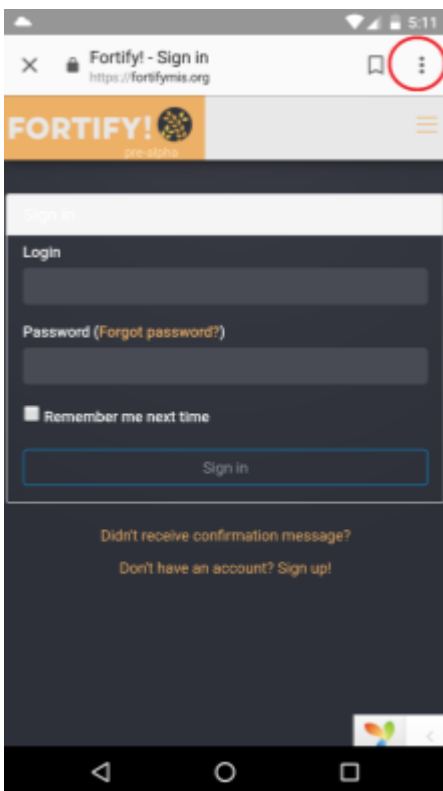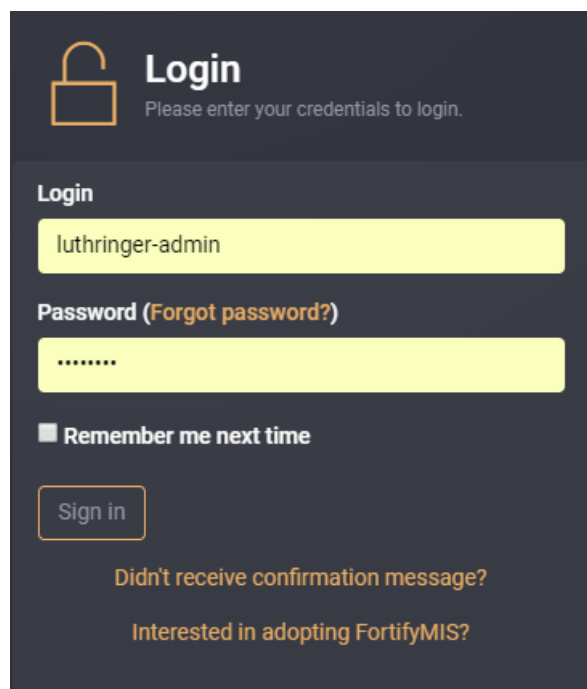
For an Android Device, in the top right corner, you will see the web menu (three dots arranged vertically). Tap here and select 'Add to Home screen' and the FortifyMIS App will be created on your device.
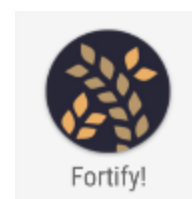
For an Apple device, you will see a menu bar at the bottom of the web browser with a square icon with an arrow on top of the square. Tap this icon and select 'Add to Home Screen' and the FortifyMIS App will be created on your device.
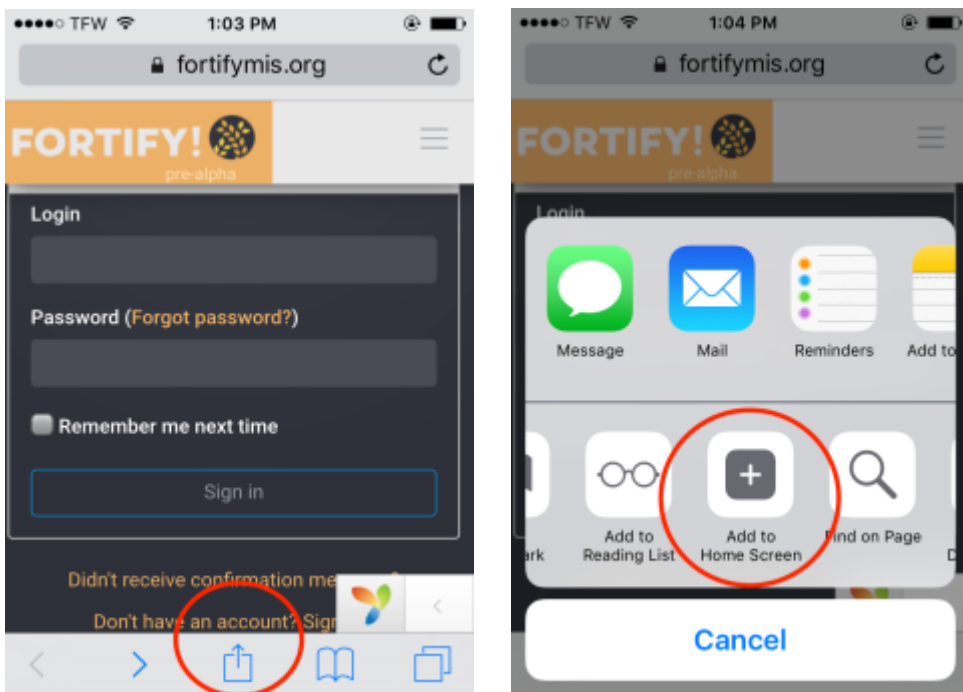
When you login, you will be taken to the Dashboard area. Notice the following (numbers refer to those in the image below):

1. Just under the Fortify! Logo, you will see the country you are currently working in. If this is not the country you expect, contact your country administrators to reassign you.
2. On the left side, you will see all your menu options. Different user permissions will grant you access to different menu options.
3. If you do not see the left side menu, click the three horizontal stripes to reveal the menu options.
4. Your user name should appear here. Clicking on this will reveal the email address associated with your account and allow you to log out.
5. The help area is here. If there is a number in the blue box, that means there are helpful hints and tips available for this page. Click to reveal the help area.
6. This is the main area where data will be entered and dashboards and reports shown.
7. You have the option of clicking on the tab called 'Totals' to generate graphs that pertain to all data collected (e.g. total number of quantitative inspections per month) or 'Producers' to generate graphs that pertain to producers (e.g. quantitative test results by producer). The graphs that you have access to will be related to the user permissions that you have been assigned.
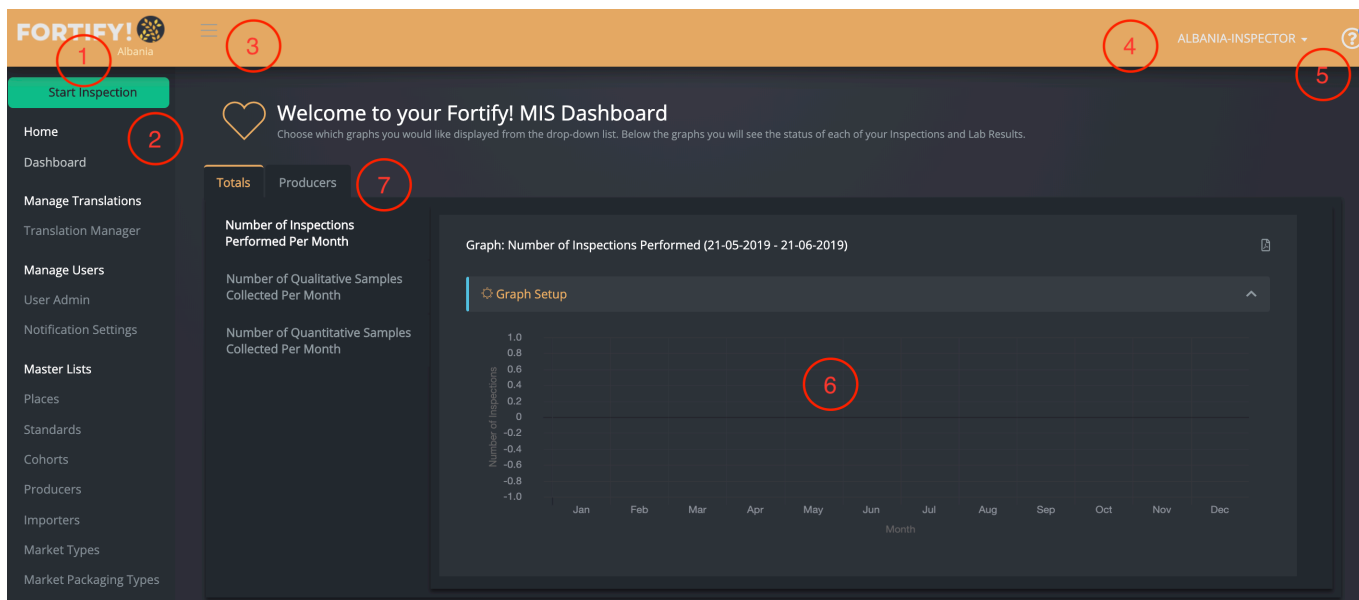
Module 1: Creating Users and Assigning Roles

In this module, you will learn how to create users and assign role permissions. These are part of the country customization process. All areas described in this module can be found under 'Manage Users' on the left options menu.

1.1: Adding, Modifying, and Deleting Users

Each person who will use the FortifyMIS will need a user account with unique email address, login ID, and password. Only Country Administrators can add, modify, or delete users from the country they are assigned.

First, select 'User Admin' on the left panel under 'Manage Users'. A list of existing users within the country will be shown on the screen. The lighter grey boxes above each column allow you to search for a particular user by typing all or part of that field. Clicking the orange column titles will sort by that column, alphabetically or numerically. You will note users who have confirmed their email account will have the word 'Confirmed' in green on the right side. For users who have changed positions or who should no longer be given access to the MIS, click the red 'Block' button to deactivate the user. All data that user has collected until this point will remain available within the system.

To create a new user, click 'Create' at the top and select 'New User'.
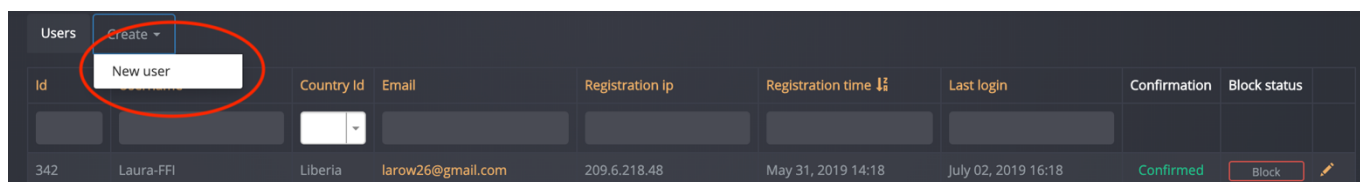
Fill the form with the new user's email address, username, country, and language and click Save. You will only see countries in the dropdown where you are a Country Administrator. Leave the password field blank and it will send an automatically generated password to the user's email address. The user can then login and change their password.

If the user is affiliated with a laboratory or a producer, select the name of the laboratory or producer in the dropdown menus. Note that the laboratories or producers must already be listed in the 'Master Lists' area, which you will learn about in Module 3. If the user is not affiliated with a laboratory or producer, these fields can be left blank.

Once the user has been created, you can easily modify any of the fields, or add further information (such as the user's name, location, and time zone) by clicking on 'Profile Details' in the left box of the main area. Note that the location dropdown will be populated with 'Places' which are set up in the 'Master Lists' area (Module 3).

Always click the green 'Update' button after making any changes.

The Information button will provide details on when the user was created. The 'Assignments' button will be discussed in Module 1.2.

If a user is no longer going to use the MIS, simply click 'Block' to no longer allow that user to access the MIS, while still leaving all data intact that the user created.

To return to the full list of users, click 'Users' at the top of the page or 'User Admin' from the left options menu. You will see a set of orange "action icons" on the right side. These Action Icons are common throughout the MIS and will be introduced to you as we go. The pencil icon is used to edit or update something, in this case a user's information. Clicking this Action Icon next to a given user will allow you to edit or update that record.
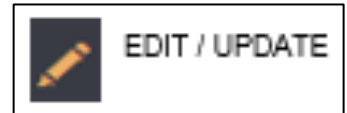
Your Turn to Practice

Add a new user within your country using a name you make up. Set the password to something easy to remember, like "training." Now look at the full list of users, find this new user and edit profile details to include a full name. Click 'Update' when finished editing.

1.2: Assigning Roles to Users

In order to be functional, each user must be assigned one or more roles. Again, only a Country Administrator can assign roles to users. To assign roles to a user, first find the user in the user list and click the pencil icon to edit the user information. Then click on 'Permissions' in the left box.

You will see a list of roles and permissions with a name for the role and a description of what that role is able to do or perform. By clicking in the small white box to the left of the name, you are assigning the user a role and granting that user different permissions.

To better understand the permissions associated with each role, click on the small down arrow to the left of the name. You will see a list of permissions that pertain to that user. After you have assigned a role to your user, be sure to click on the green 'Save Permission' box at the bottom of the page.

Note that FortifyMIS comes standard with several types of role assignments as described in the introductory materials. These can be customized to suit any country context. Contact the System Administrators to discuss your needs and have these roles created for you (Laura Rowe – laura.rowe@ffinetwork.org and Florencia Vasta – fvasta@gainhealth.org).

> **Your Turn to Practice**
>
> Find the user account that you created in Module 1.1 in the list of users and edit the user assignments to include the "Producer Inspector" role. As we move through the various MIS training areas, you will be asked to go back to this user account area and assign this user a different role to have access to those areas for training purposes.

1.3: Notification Settings

Notifications help to remind users when they have a pending action within FortifyMIS. The Country Administrator can set a specific number of days that must elapse before certain users start to receive email notifications. The notifications will be received every day until the specified action has been taken.

To modify notification settings, click on 'Notification Settings' found under 'Master Lists' on the left-hand menu. First, click the blue 'Update' button. Then the two areas with numbers are open for editing and you can input any numbers which are reasonable for your country. Click 'Update' again to save these new settings.

Note that there may be a lag between when the MIS 'understands' there is a pending sample and when the laboratory physically receives the sample. Do take this into account when setting notifications.

To add in different types of notifications, make a request to the System Administrators (Laura Rowe – laura.rowe@ffinetwork.org and Florencia Vasta – fvasta@gainhealth.org).

Module 2: Translating the MIS

If some or all users in your country will be using the MIS in a language other than English, the MIS will need to be translated. All text that appears within the MIS can be translated into any language. This translation will need to be done by a Country Administrator or someone given access to only the Translation permission within the MIS. Any user can select in which language they wish to see and use the MIS. Any text that does not yet have a translation available in the selected language will default back to English.

To translate text in the MIS, first select the Translation Manager on the left options menu. You will then see a list of languages and a progress bar showing the percentage of MIS text which is currently translated. Note that even if the Country Administrator fully translates the MIS, the progress bar may show that it is below 100% if a new feature, module, checklist form, or producer name is added which does not yet have a translation attached. The Country Administrator or a designated translator should check the Translation Manager periodically to ensure the MIS is fully translated. The MIS does not automatically produce translations.

If you wish to translate the MIS into a particular language, but that language is not on the list, please notify the MIS System Administrators (Laura Rowe – laura.rowe@ffinetwork.org and Florencia Vasta – fvasta@gainhealth.org) and a new language file can be created for you.

#	Language ID	Language Name	Status ↓ᶻ	% Translated	
		r	▾		
1	de-DE	German	Beta ▾	0%	👁✏🗐🗑
2	pt-PT	Portuguese (Portugal)	Active ▾	0%	👁✏🗐🗑
3	fa-IR	Persian	Active ▾	0%	👁✏🗐🗑
4	tr-TR	Turkish	Active ▾	0%	👁✏🗐🗑
5	fr-FR	French (France)	Active ▾	0%	👁✏🗐🗑
6	ru-RU	Russian	Active ▾	18%	👁✏🗐🗑
7	ar-AR	Arabic	Active ▾	0%	👁✏🗐🗑

Some new Action Icons are visible on the right. These can be clicked for the following actions:

 VIEW   TRANSLATE   DELETE

Find the language you wish to translate and click the 'Translate' icon. The 'Category' column will help to filter the most important items to translate. Start with categories 'App' and then move to any category in the dropdown menu with your particular country listed (e.g. 'Checklist-country'). The 'Source' column includes every word or phrase in English that needs to be translated and the "Translation" column is where you can type in a translation for each item. Note that you can search the 'Source' column for specific text in English to translate by typing in the blank box under the 'Source' column heading. This is most useful for when you are using the MIS in another language and find some text in the system that has no translation and has therefore defaulted back to English. Likewise, you can search for empty translations by typing an exclamation point (!) in the box under the 'Translation' column heading.

Note that any text in the 'Source' column within { } should be copied exactly as-is and not translated. This is pulling specific code from another area of the database to display. Be sure to click the green 'Save' button after each item to save it.

If you wish to translate by viewing the 'Source' column in a language other than English, simply change the Source Language using the dropdown menu at the very top of the translation page. This is useful for translating the MIS into a third language from a second language, both of which are not English. For example, one may want to translate from French to Wolof (a local language used in West Africa) instead of English to Wolof. In this case, simply switch the Source Language to French and enter the Wolof translations accordingly. Note that there must already be French translations available, or the Source will default back to the Original language it was entered in (in most cases, this will be English, though there may be instances of users taking notes or adding information in another language, which would need translation back to English or into a third language).

Note that for languages with many dialects, a new language file can be created for a specific dialect (e.g. French spoken in Senegal vs. French spoken in Madagascar).

Your Turn to Practice

If you speak another language, try searching for it in the Translation Manager. Then you can translate any number of items as you'd like.

Module 3: Modifying Master Lists

In this module, you will learn how to set country standards and modify master lists of producers, importers, brands, sites, and geographic places. While country standards and places are accessed only through the Country Administrator user, multiple users can add or modify items in each of the lists as their role requires. These lists are all found on the left options menu, under 'Master Lists'.

3.1: Setting Places
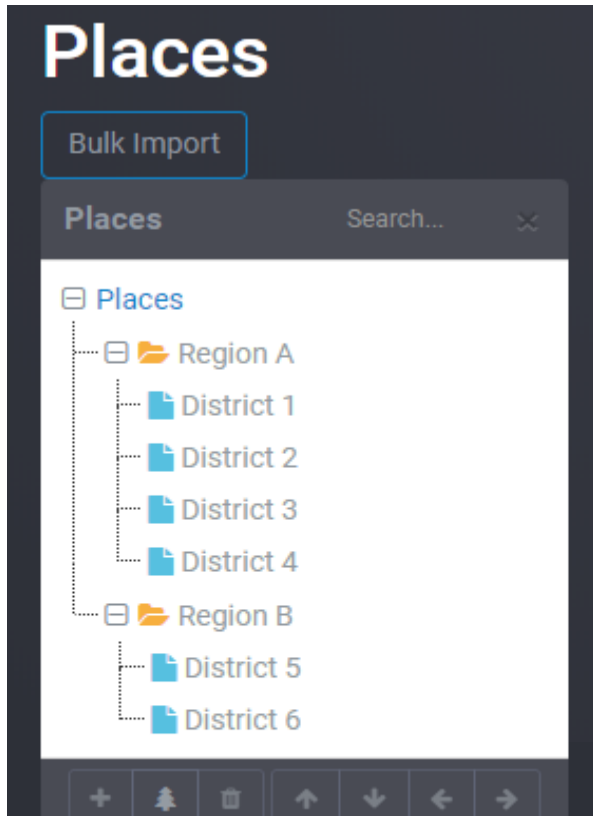
Places allows you to set administrative areas for the country and tag standards, producers, importers, and other data to that administrative area. This is useful for creating dashboards and reports that detail progress or compliance by administrative area in graphical or map format.

The places list functions as a tree, with parent items (orange folders) and one or more child items (blue pages) embedded within each. For example, a country may be divided into 5 Regions, each of which are further subdivided into Districts, and each of which are further subdivided into Counties. You can use as many administrative levels as you choose or as may be relevant for reporting in your country.

To add new items individually, the buttons at the bottom of the list can be used. To add a new parent item, first highlight one of the existing parent items. Click the tree icon at the bottom of the list. To add a new child within a parent item, select the parent item you wish to add to, then click the plus sign icon at the bottom of the list. For both types of additions, you will need to type a name for the new item and click the 'Save' button at the top right (disk icon). The trash bin icon will delete any selected parent or child item.

To modify items or to move them, use the arrow buttons. The up and down arrows can change the order of children within a parent item. The left arrow can move a child item to be a new parent item. The right arrow can move a parent item to be a new child item.

Any time you click on a parent or child item, the right side of the screen will provide additional information and allow you to edit the name of the item.

Your Turn to Practice

Practice using this type of list entering a series of places. Your version of the MIS may or may not include Bulk Import option. If it does, create an Excel spreadsheet with 10-15 lines. The Excel should have at least 3-4 parent items and each parent should have 3-4 children items. An example list could look like the one below which includes several Counties in a few States of the USA:

|			
New York	Westchester	Connecticut	Union
New York	Rockland	Connecticut	Bronx
New York	Orange	New Jersey	Bergen
New York	Putnam	New Jersey	Hudson
Connecticut	Fairfield	New Jersey	Essex
Connecticut	New Haven	New Jersey	Passaic
Connecticut	Litchfield	New Jersey	Morris

If you do not have a Bulk Import option, then enter in the parent items and child items as they appear above using the buttons at the bottom of the list.

If you know your New York City geography, you'll notice that Union and Bronx Counties were mistakenly put in Connecticut. Union County should be located in New Jersey and Bronx County should be located in New York. Using the delete and add buttons, move Union and Bronx Counties into their proper states. Then, using the arrow buttons, alphabetize the Counties in each State. Add Ulster as a County under New York. Lastly, add a new State, Pennsylvania, and under it, add two new Counties, Pike and Wayne. Note, that you cannot delete a parent if it has children. Instead, you will need to delete each child individually before you can delete the parent.

3.2: Setting National Standards

Compliance of fortified foods must be compared against a national or regional standard. Each food vehicle being fortified will have a standard, noting the levels of one or more nutrients, with each nutrient and food combination having its own entry within the National Standards area. Similar to lists of users, you can search and sort using the lighter grey boxes and clicking on the orange column headings.

We also introduce here a new orange Action Icon, the 'Copy' icon. This icon allows you to copy an entry, change a few details, and save again as a new entry. Especially for lists like National Standards, this may make adding multiple standards for all the nutrients that wheat flour can be fortified with much easier. There is also a 'Delete' Action Icon, which allows you to delete an entry. Caution when deleting. If there are data tagged to the specific item you are deleting, it may not be possible for you to delete, or you may delete your data.
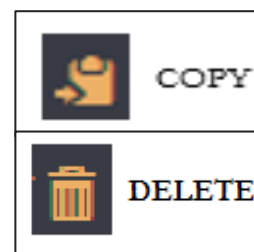
To create national standards, select 'Standards' from the 'Master Lists' area of the Options Menu. Now, click 'Create National Standard' at the top.

National Standards

Create National Standard

	National Standards					Showing 1-3 of 3 items.
#	Name	Name	Compound Names	Statutory Standard	Last Update	
1	Wheat Flour	Iron	NaFeEDTA	30.0000 mg/kg	Created by luthringer-admin 1 day ago and Updated by luthringer-admin 1 day ago	
2	Oil	Vitamin A	Vitamin A / Retinyl Palmitate	10.0000 mg/kg	Created by luthringer-admin 1 day ago and Updated by luthringer-admin 1 day ago	
3	Wheat Flour	Vitamin A	Vitamin A / Retinyl Palmitate	30.0000 mg/kg	Created by luthringer-admin 23 hours ago and Updated by luthringer-admin 23 hours ago	

Fill the form using the instructions below. The numbered items below correspond to the numbers in the figure that follows.

Select the food vehicle from the dropdown menu. Note that if the standard applies to a whole category of food vehicles (e.g. all types of edible oils), simply select the heading 'All Oil'. All categories of oil will then be included in this standard. However, if the standard only applies to one specific type of edible oil, then select that type. If the food vehicle you wish to create a standard for does not exist, contact the System Administrators to have it created for you ((Laura Rowe – laura.rowe@ffinetwork.org and Florencia Vasta – fvasta@gainhealth.org).

1. Next, select the jurisdiction to which the standard applies. In most cases, it will apply country-wide, but there may be countries where standards apply on a state or regional basis only. The 'Manage Places' button will take you to the 'Places' master list.
2. Select the nutrient that the standard level applies to.
3. Select the compound or compounds that can be used. Note that if standards require different levels when using different compounds (e.g. 30 mg/kg iron as NaFeEDTA vs. 40 mg/kg iron as ferrous fumarate), you should create two separate standard entries, one for each.
4. Type the target standard level for one nutrient in the box provided, ensuring you are selecting the correct units. Note that the box can only accommodate one number, not a range of numbers. Standards are written in different ways, so based on how your national standard is written, the following should be used:
   a. If the standard gives one number (e.g. No less than 40 mg/kg), then use that number as the target (enter "40").
   b. If the standard gives a range of numbers (e.g. Between 20-40 mg/kg), then use the midpoint of the numbers as the target (enter "30").
   c. If the standard gives a number with a tolerance (e.g. 40 mg/kg ± 10%), then use the number as the target (enter "40").
5. Type in the box the exact text as listed in the standard to avoid any confusion or misinterpretation of the standard. It will be particularly important to indicate if the target number that was included in the target standard box above is intended to be a minimum or maximum number as stipulated in the national standard document.
6. Using the slider, select the "actionable tolerance thresholds" of the standard. This refers to the nutrient range that is allowed within that specific fortification standard. For standards with a range or a tolerance provided, you may choose to use these threshold amounts as a starting point. For example, if a standard indicates a tolerance of 40mg/kg ± 10%, then the "actionable tolerance threshold" would be 36-44 mg/kg. Or if a standard indicates 9.8 ± 4.4 mg/kg, the "actionable tolerance threshold" would 5.4 to 14.2 mg/kg. However, *all countries are encouraged to conduct an analysis on the production variability for micronutrients in each food vehicle to determine a realistic actionable range*. For more information on how to conduct such an analysis, refer to the Policy Guidance on Regulatory Monitoring.
7. Based on the range selected in the actionable tolerance area, the minimums and maximums at production, import, and market will be automatically filled. However, some standards may specify different ranges for each, which can be overwritten and typed in the boxes. If a country does not specify different levels for the import and market levels, then it can be decided to keep the same levels as designated for production level. However, countries are encouraged to review what realistic market levels might be.

Once you have finished, click 'Create' to save the standard or 'Create and Start Another' if you intend to input multiple standards. As in other MIS areas, you can easily view, modify, or delete a national standard using the Action Icons on the main page listing all national standards. Remember that each micronutrient to be added to a food vehicle requires its own standard entry (e.g. for edible oil fortified with vitamins A and D, two separate entries are needed, one for vitamin A and another for vitamin D levels.)

Create National Standard

For Food Vehicle(s)

Food Vehicle ①

Select a Food Vehicle ▼

Jurisdiction ②

Jurisdiction

Country Wide ▼

Manage Places

Applies to Nutrient ③

Nutrient

Select a Nutrient ▼

Select Compounds ④

Select Compounds

Statutory Standards for the selected compound(s)

Statutory Standard ⑤

Statutory Standard | mg/kg ▼

Text of the Statute for Reference ⑥

Actionable Tolerance Thresholds

< 30% or > 130% of the standard ⑦

-100% ●———● 200%

At Production ⑧

Statutory Minimum at Production

Minimum at Production

Statutory Maximum at Production

Maximum at Production

At Import

Statutory Minimum at Import

Minimum at Import

Statutory Maximum at Import

Maximum at Import

At Market

Statutory Minimum at Market

Minimum at Market

Statutory Maximum at Market

Maximum at Market

Create | Create and Start Another

Your Turn to Practice

Choose a national standard and practice adding in one or more entries. An example set of national standards is provided below.

Wheat Flour

Vitamin A	1.0 ± 0.4 mg/kg	As Vitamin A Palmitate	
Vitamin B1	9.8 ± 4.4 mg/kg	As Thiamin Mononitrate	
Vitamin B2	6.6 ± 3 mg/kg	As Riboflavin	
Vitamin B3	60 ± 30 mg/kg	As Niacinamide	
Vitamin B6	6.5 ± 3.5 mg/kg	As Pyridoxine	
Folate	2.3 ± 1 mg/kg	As Folic Acid	
Vitamin B12	0.02 ± 0.009 mg/kg	As Vitamin B12	
Zinc	88 ± 28 mg/kg	As Zinc Oxide	
Iron	30 ± 10 mg/kg	As NaFeEDTA	or
	40 ± 10 mg/kg	As Ferrous Fumarate	or
	40 ± 10 mg/kg	As Ferrous Sulfate	

Salt		
Iodine	no less than 40 mg/kg	As Potassium Iodate or Potassium Iodide
Edible Oil		
Vitamin A	50,000-70,000 IU/kg	As Vitamin A Palmitate
Vitamin D	5,000-7,000 IU/kg	As D3 (Cholecalciferol)
Sugar		
Vitamin A	2-15 mg/kg	As Vitamin A Palmitate

3.3: Setting Cohorts

Cohorts allow you to group producers, importers, and markets into different types, allowing you to use different types of data collection methods for each type. For example, it may be useful to have one type of inspection checklist that is suitable only for small-scale producers and a different checklist for large-scale producers. In this case, you could have two cohorts: small-scale and large-scale.

Another way cohorts can be used is if a country has a different inspection checklist for different food vehicles. Here you can create a cohort for each vehicle with its own inspection checklist. The Country Administrator is responsible for setting cohorts during the set-up stage when producers are created (Module 3.4) and when inspection checklists are created (Module 4.1). When an inspector begins an inspection, the appropriate cohort will be chosen when he/she chooses the producer or the food vehicle. For example, if Premier Milling has been designated as a small-scale producer, then when the inspector chooses Premier Milling from the dropdown menu when an inspection begins, the appropriate checklist will automatically appear.

The main Cohorts list looks like the Standards list, allowing you to search in the light grey boxes, sort by clicking on the orange column headings, and view, edit, copy, and delete using the orange Action Icons. To create a new Cohort, click the 'Create Cohort' button at the top of the page.
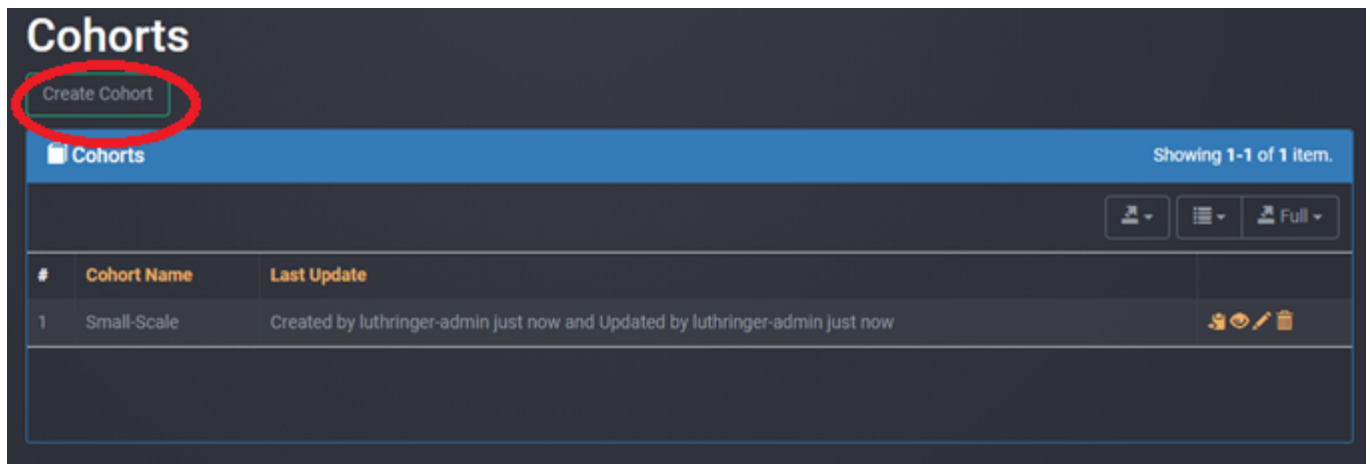
Simply type a name for the cohort and click 'Create' when finished. This will now be an available option for any dropdown menus related to cohorts.

> **Your Turn to Practice**
>
> Create two cohorts, a Small-Scale and a Large-Scale cohort. We'll use these to practice during the next Module.

3.4: Setting Producers, Importers, and Market Lists

Lists of Producers, Importers, and Markets are not set up with a parent/child relationship like Places, but are tagged with types of foods, brands/products, geographic place, and sites. As with similar types of lists, you can search by typing into the light grey boxes and sort alphabetically by clicking the orange column titles. The orange Action Icons also allow you to view, edit, or copy.

To create a new item in these lists, click 'Create Producer' (or 'Create Importer' or 'Create Market Type', depending on which page you are on.)
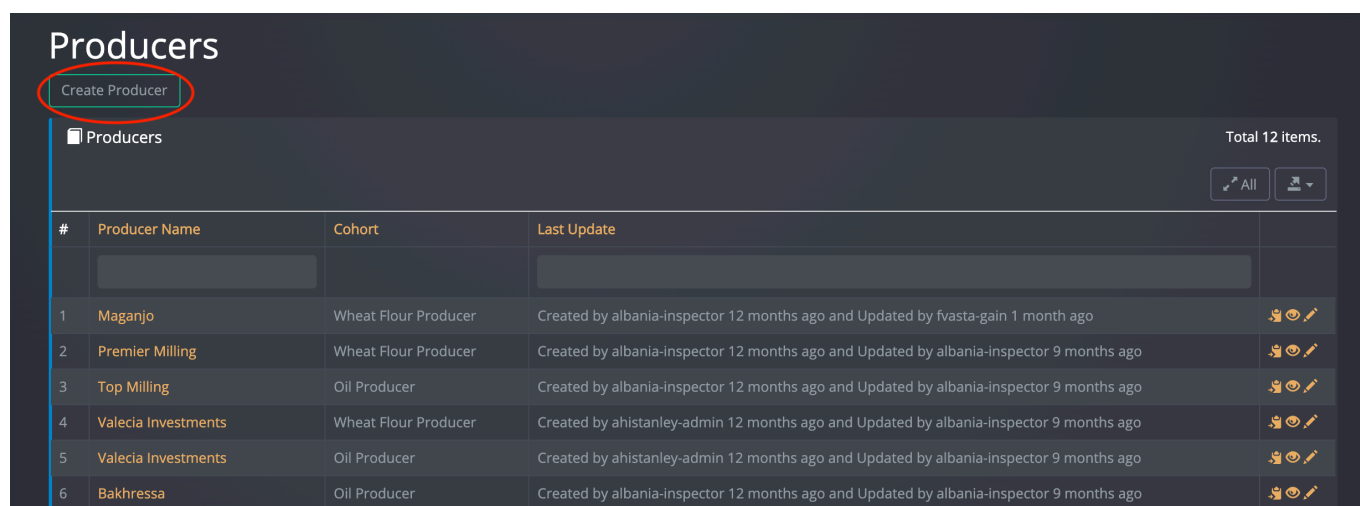
Fill the form using the instructions below. The numbered items below correspond to the numbers in the figure that follows.

1. Type the full company name.
2. Choose the cohort from the dropdown menu (the dropdown will populate with what you've created in Module 3.3).
3. If the producer only makes one type of food (e.g. only wheat flour), you can select the food here. Reminder that only foods associated with a standard will show up in this dropdown menu.
4. Fill in the brands and the associated food. Note that food vehicles used here will supersede those in section 3. You can see from the example that ABC Flour has two brands, Super Flour and Super Flour Max. Both are types of fortified wheat flour. Click the green '+Add Brand' button to add additional lines. Producers can be associated with as many products/brands as they have for as many different foods as they produce.
5. Fill in the sites for this producer. Sites are what can be selected during an inspection. For producers that have only one site, simply retype the name of the producer here. However, in some cases, a producer may have multiple sites located in different cities or areas of a country. You can see in this example that ABC Flour has two sites, one in the North and one in the South. Sites must be associated with a 'Place'; this dropdown will be populated with the places you have set up in Module 3.1. Click the green '+Add Producer Site' button to add additional lines.
6. Click 'Create' when finished.

The Importers list functions in the exact same way. Importers can also be associated with one or more brands and must be associated with one or more sites. For markets, you have two options: 1) Market Type – this allows you to indicate the kind of markets that your market data collection will take place in (e.g. bazaars, grocery stores, etc.) and 2) Market Package Type – this allows you to indicate the kind of packaging types that an inspector will need to indicate the sample was collected in (e.g. jerry can, plastic bottle, sachet). The MIS does not provide the option to list out names of markets. This is intentional due to the fact that a list of market names if often not available allowing the inspector to name the market during the point of market inspection.

3.5: Setting Laboratories

The Laboratories list functions very similarly to the Producers and Importers lists. You can see a similar start page listing all laboratories in the country, with similar abilities to search, sort, edit, view, and copy. To create a new laboratory, click 'Create Lab' at the top of the page.

Fill the form using the instructions below. The numbered items below correspond to the numbers in the figure that follows.

1. Type the full laboratory name.
2. For rapid tests that the Inspector user performs themselves, create a laboratory called 'Inspector' and click the 'Self Testing' box. This way, these samples are still logged into the system and the Inspector user can input the results from such tests him/herself.

3. Include all services the laboratory is accredited to perform. Services should have a title, which gives details about the type of test and methodology or equipment used. The nutrient the test detects and the food the test detects the nutrient in must be chosen. Either 'Qualitative' or 'Quantitative' should be chosen as the methodology. The appropriate units should be identified for each test and, finally, the lowest level of detection which that test can detect on that nutrient should be included. Click the green '+Add Lab Service' button to add additional rows.
4. Click 'Save As New' when finished.

For laboratory tests that are done as part of internal monitoring within a Producer's internal laboratory, create a laboratory with the name of the Producer. This way, these samples are also logged into the system and the Producer user can input the results from such tests him/herself. A Producer user will also have the ability to create an internal self-testing laboratory with their own permissions.

Note that laboratories can also exist outside the borders of the country (e.g. Inspectors in Burundi may send samples to a laboratory in Kenya if they do not have the requisite testing capacity). In this case, set up the laboratory as normal. When these laboratories are provided user login details, they should be associated with the country where the samples are coming from (Burundi in the above example), rather than the country where the laboratory physically sits (Kenya).

Your Turn to Practice

Set up two laboratories. The first can be called the National Laboratory which can conduct the following types of laboratory services:

Iron Assay in Wheat Flour with HPLC (Quantitative)
Zinc Assay in Wheat Flour with AAS (Quantitative)
Vitamin A Assay in Oil with iCheck (Quantitative)
Vitamin A Assay in Wheat Flour with iCheck (Quantitative)
Folate Assay in Wheat Flour with HPLC (Quantitative)

The second laboratory should be called "Inspector", which can conduct the following types of tests:

Iron Spot Test in Wheat Flour (Qualitative)
Iodine Spot Test in Salt (Qualitative)
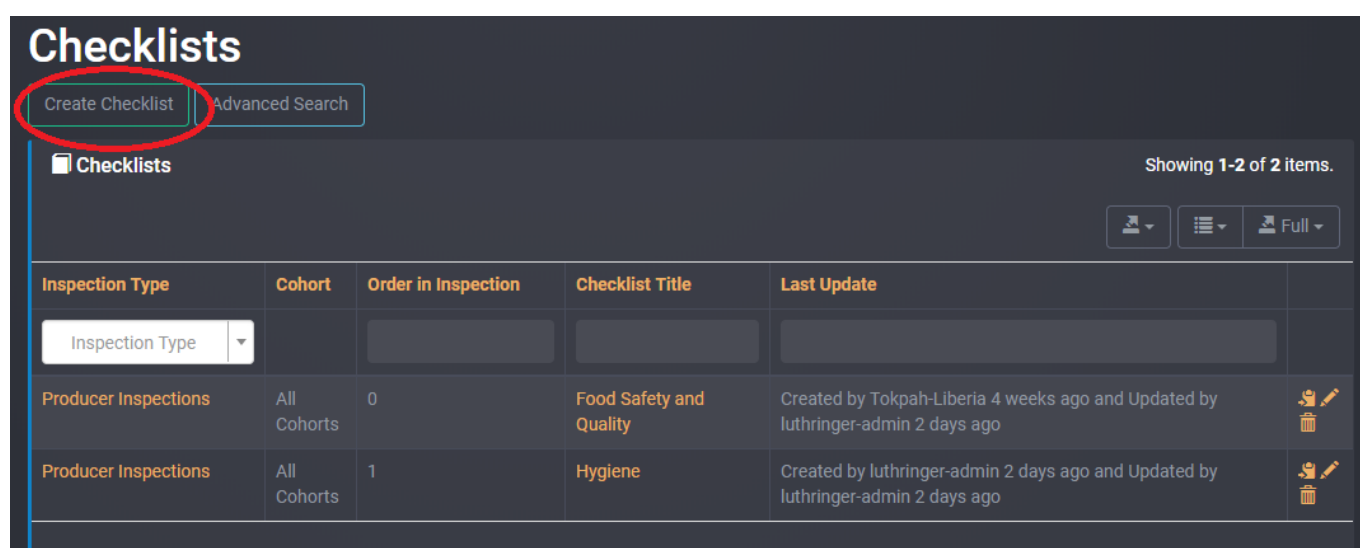
Module 4: Setting up Data Collection Forms

In this module, you will learn how to set up data collection forms and apply them to various users. This is something normally done by the Program Manager or Country Administrator for regulatory or food control inspectors, but this can also be done by Producers for the forms unique to their sites. All areas described in this module can be found under the 'Data Collection' area of the left 'Options' menu.

4.1: Managing Inspection Checklists

The main type of data collection you will want are Inspection Checklists. These are the forms most often used by food control or regulatory inspectors when they visit a production, import, or market site. The forms you create in the MIS should mirror those forms already in use within a country's monitoring system, so the transition to a digital MIS is seamless and easy for all users to understand.

Like most other lists, the Manage Inspection Checklists area has a similar front page, where you can see all entries made so far, sort and search, and copy, edit, and delete entries. To create a new checklist, click 'Create Checklist' at the top of the page.

Fill the form using the instructions below. The numbered items below correspond to the numbers in the figure that follows.

1. Choose the inspection type – the options are:
   - Producer Inspection
   - Importer Inspection
   - Market Inspection
   - Internal Inspection (used for Producers to conduct their own internal monitoring or QA/QC)
2. Type a checklist title to describe the types of questions in this checklist.
3. Type a number to indicate the order it will appear in the inspection. Note that there may only be one of each number per inspection type and *these must start with 0 as the first number*.
4. Choose the cohort this checklist applies to. Selecting 'All cohorts' will make the checklist apply to all of them.
5. Add the checklist items. This include:
   - Category of the checklist item.
   - The actual question or checklist prompt.
   - Number of points the question is worth (useful when you may have questions that are more important than other questions.; note that this score or weight is designated by the country and there is no standard weight or score given to each question as a default) If your monitoring system does not have a points system, simply type "1" for all questions.

- Priority of the question (again, useful if you may have questions that are more important than other questions.) If your monitoring system does not have a priority system, simply select 'High Priority' for all questions.
- The input type is the expected data input and can be set either to use a Pass/Fail, text field, or numerical field.
- By toggling the button under 'Allow Attachments', you give the inspection the ability to upload a document or a picture in reference to that particular question. Note that if you do not enable the 'Allow Attachment' button during the checklist creation stage, the inspector will not have the ability to upload anything for that particular question during an inspection.
- You can add additional items with the green '+Add Checklist Item' button and delete items using the Delete Action Icon. To reorder, click the green 'Reorder Items' button. Then you will be able to click just to the left of the row number and drag the items to reorder them.

6. Finally, click 'Create' when finished.

You can add as many checklists as you'd like for any combinations of Inspection Type and Cohort. Remember that there must only be one checklist per 'Order in Inspection' for each Inspection Type and Cohort combination.

It may be useful to separate long checklists on paper into many smaller checklists in the MIS. This will help to focus the inspector on one topic at a time and will aid in saving and syncing data when using the MIS offline.

Your Turn to Practice

Try creating a new data collection form. Think of some questions that might be important for regulatory monitoring or use some of the example questions below. If using the questions below, try organizing them into 3 separate data collection pages and arbitrarily assign a point and priority value to each.
1. Is the site in good condition in terms of appearance and tidiness?
2. Is the site layout acceptable in terms of separation of storage, production, and service areas?
3. Is the condition of the buildings used for raw material storage acceptable?
4. Are the raw material storage areas clean and tidy?
5. Are storage areas free from pests?
6. Are raw materials neatly stacked and in good condition?
7. Are proper stock rotation principles in place?
8. Is there a proper system in place for documentation of received raw materials to ensure traceability?

9. Are all buildings suitably ventilated?
10. Are there documented procedures or controls in place to minimize the risk of foreign matter contamination during processing?
11. Do documented quality control procedures for various manufacturing processes include checks on potential hazards?
12. Are staff required to wash their hands and follow other formal hygiene related procedures before entering production areas?
13. Are there suitable medical facilities with trained personnel available on site?
14. Are records available of all procedures and results relating to food safety issues?
15. Is fortification premix supplied by a certified supplier?
16. Are complete premix usage records available?
17. Is fortification premix stored under cool and dry conditions without direct exposure to sunlight?
18. Are equipment calibration records available?
19. Are premix feeders of suitable design, correctly installed, and in the optimum positions within the plant and working correctly?
20. Is routine in-house testing of fortified end products conducted?

4.2: Setting Quality Measures

Quality Measures help the MIS to "score" inspection checklists based on an agreed upon set of criteria. Inspection checklists can be scored using the points system or the priority system, a combination of both, or none at all if a country so desires. For example, if using the priority system, you can stipulate that at least 90% of high priority questions, 70% of medium priority questions, and 50% of low priority questions must receive a passing answer in order to "pass" the inspection.

The Quality Measures main page looks like other lists, where you can sort and search, and view, edit, copy, and delete items. To create a new quality standard, click 'Create Quality Standards'.

Fill the form using the instructions below. The numbered items below correspond to the numbers in the figure that follows.

1. Choose the inspection type and cohort (again 'All cohorts' is a valid option which will apply to all specified cohorts).
2. If using the priority system, type the % that each priority level must achieve to be considered passing.
3. Type the number of total points that must be scored. Note that this is applicable and must be filled in even if you are not using a points system. In this case, all questions were given 1 point and you will score based on a single total number of points.
4. This area simply shows you the types of checklists that have been added and their total number of questions and possible points. This can aid in your decisions for part 3.

5. Click 'Create' when finished.

You can create different Quality Standards for various combinations of Inspection Types and Cohorts.

> ## *Your Turn to Practice*
>
> Using the data collection forms you've just created, set up quality standards for each combination of Inspection Types and Cohorts as you've created inspection checklists for (i.e. if you have created two checklists, one for a Producer Inspection of Small-Scale cohort and one for a Producer Inspection of Large-Scale cohort, create one quality standard for each type).

4.3: Laboratory Services

The Lab Services section is specific to users given laboratory permission. This section allows lab staff to set up services ('Services Setup') or types of tests that their respective laboratories have the ability to perform, allowing them to be very specific about the methodology, measurements, and detection limits of the tests. This is the same information that the Country Administrator enters in when they create a new lab under Master Lists → Laboratories. This section, specific to the Laboratory user, allows laboratory staff to update and / or change the information related to their lab tests. Under Services Setup, click on Create Lab Service. You will be brought to the page copied below where the test name or service can be entered (1), the kind of nutrient the test has the ability to detect (2), the food this test can be used on (3), the test methodology (qualitative or quantitative) (4), additional details related to the methodology that the lab staff feel are important to communicate (5), the unit of measurement for the results (6), and the lowest detectable amount of micronutrient using this test (7).

These labs and their respective tests will then be available to the inspector after samples are collected. The inspector will have the option to choose which lab and which laboratory test is desired. This section is particularly important since we do not want an inspector to request a test from a lab which that lab does not have the ability to perform.

Services Performed gives the user a display of all the laboratory services performed over the course one year.

Module 5: Collecting Data

Now that the MIS is set up for usage within the country with the proper users, languages, master lists, and data collection forms, we can start to use the MIS to collect data. In this module, you will learn to use the inspection wizard to collect data, request analytical tests from an external laboratory, and report back on test results. Producers and Inspectors all have data to collect and will use various forms to do so, which were set up in Module 4. Laboratory Analysts will receive requests and report the results back to whomever requested them.

> ### *Your Turn to Practice*
>
> Before starting this module, create three new users with any names you choose (Module 1).
>
> The first new user should have the Producer Inspector role only. Remember during the user set up to associate this user with the "Inspector" laboratory you created in Module 3.
>
> The second new user should have the Producer role only. Remember during the user set up to associate this user with one of the Producer names you created in Module 3. Also associate this user with that producer's internal laboratory, if you created this.
>
> The third new user should have the Laboratory Analyst role only. Remember during the user set up to associate this user with the "National Laboratory" you created in Module 3.

All data collection can function online or offline. *To function offline, a user must have done at least one inspection online with a given device to allow the MIS to save a local copy onto the device.* When inside an inspection, the device will note whether it is online (green), offline (red), or syncing (orange) on the top right corner of the page.

5.1: Conducting an Inspection as an Inspector or Producer

Inspectors and Producers have access to the 'Data Collection' area on the left options menu.

To start an inspection, click the green button that says: 'Start Inspection' found at the top left-hand side of the page, directly under the Fortify! logo. You will then progress through a series of screens to choose the site, complete any relevant inspection checklists that have been created for that type of site, complete a premix reconciliation calculation on one or more product lines, and collect samples for testing, if desired. These steps are outlined below:

1. **Choose the type of site you want to inspect**. The dropdown menu will give options based on your permissions. Inspectors with the roles for Production, Import, and/or Market Inspections will see one or more of these options available. Producers will only see the Internal Inspection option available.
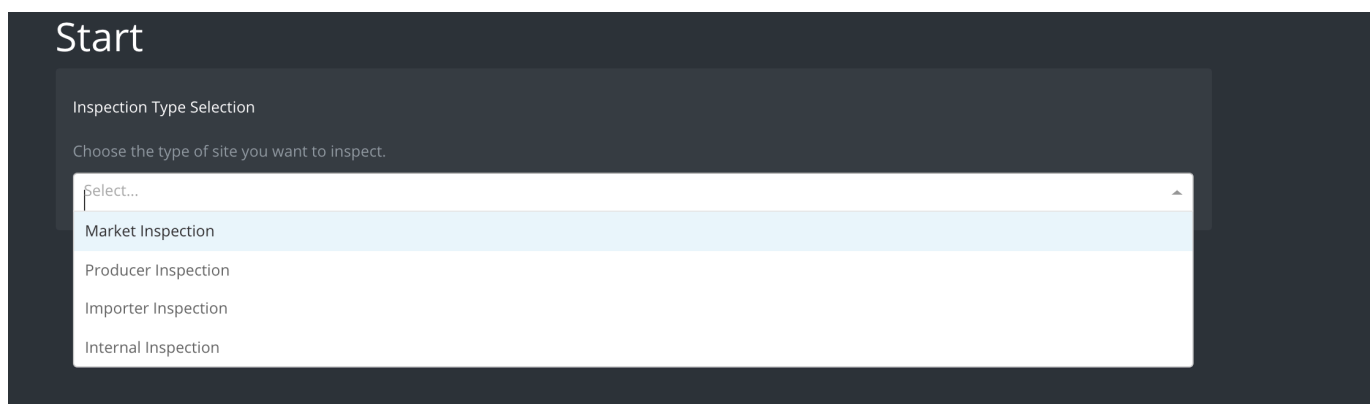
2. **Select the Site.** Only sites with the inspection type that you have selected will show in the dropdown list. Remember that sites are a physical location, therefore an inspection of ABC Flour North Site is different from that of ABC Flour South Site, even if both sites are owned by the same company (ABC Flour).

3. **Conduct the Inspection.** The inspection checklists that have been set up will now show up on the screen, one by one, for Producer, Importer, and Internal Inspections. Market Inspections will be covered separately. You can see the progress of each checklist on the right side. Click through all the questions to move to the next section. Note that when offline, the checklist will save after finishing each checklist, not after each question. Be sure you complete all questions within a checklist before taking a break. Each question also offers the option to add comments (click on the comments box) or to add a photo or a relevant document (click on collect documents box). Any comments or documents uploaded will be archived and available during subsequent inspections. Comments and documents will be stored for up to five years before they are automatically erased.

Checklist: Food Safety and Quality (1/4)

Inspecting: Premier Milling - Bahkrain

Last Inspected 2019-06-21

Cancel Inspection

Premix Storage

Is premix stored on pallets?

Pass · Fail · N/A · Comments · Collect Documents

Is premix stored below 30C?

Pass · Fail · N/A · Comments · Collect Documents

Equipment

Has fortification equipment been calibrated?

Pass · Fail · N/A · Comments · Collect Documents

Checklists

Food Safety and Quality — 0% complete
Hygiene — 0% complete
Food Safety and Quality (Copy) — 0% complete
Food safety and quality — 0% complete

4. **Conduct the Premix Reconciliation.** For each product made by the producer, a premix reconciliation calculation should be completed, which is a simple ratio of fortification premix used over the course of a given time period (a day, a week, or a month, for example), versus the amount of fortified product manufactured during that same time period. This will result in an average premix addition rate, which can serve as an indicator for whether compliance would be achieved on average for that time period's output. The average premix addition rate can then be compared to the rate as specified by the premix manufacturer.

Fill the form using the instructions below. The numbered items below correspond to the numbers in the figure that follows.

1. Click the "Add Line" button to represent the number of production lines being produced or inspected. Each will be numbered sequentially.
2. For each production line, choose the product. The dropdown is populated with the list of brands set up for the producer in Module 3.4.
3. Choose the start and end date for this estimate. For producers, it is recommended to complete this for each day or each shift. For inspectors, choose a representative set of dates for which the producer has records, either the previous month, previous quarter, or since the last inspection.
4. Enter the amount of product produced in metric tons (MT).
5. The amount of premix used in grams (g) is calculated based on the starting amount in the warehouse, the purchased amount during the time period, and the ending amount.
6. The target addition rate in g/MT is typically found on the premix packaging or with the premix certificate of analysis. This is the rate at which premix is recommended to be added to ensure the final product conforms to standards.
7. A live calculation will take place showing the total amount of premix used, the average actual addition rate, and the percent of the target achieved. Producers should not go below ~10-15% of the target addition rate to ensure their product remains compliant against the standard specifications.

The MIS has been set with 85% of the actual premix addition rate as a default for 'passing' the premix reconciliation calculation. This means that the producer has reached 85% of the target addition rate. Country Administrators can adjust this default percent under Quality Measures depending on what a country decides is most appropriate.

Repeat steps 2-7 for each product line.

When you are done with the premix reconciliation calculation and click on 'Done with Production Lines', you will be brought to a summary page (as displayed below). Here you will see a summary of the scored checklists and the premix calculation for each production line. You now have the option to 'Proceed to Samples' for collection or 'End Inspection'.

5. **Take Samples and Request Laboratory Services.** For each production line, which you see is now named by the brand, you can choose to collect samples. Each standard that has been created for the given food vehicle will be shown in the list alongside a dropdown menu of all available tests for the target nutrient. Choose the test or tests you'd like completed, then click 'Collect [Brand Name] Samples' at the bottom. Repeat this process for all production lines.

6. **Label the Samples.** For each test requested in step 5 above, you can add one or more samples. Each sample will be automatically given a unique Sample ID. You can choose the collection location (e.g. production line, warehouse, point of sale, etc.); whether or not the sample is a composite sample and, if so, how many samples make up the composite sample; the production code or batch number; the production date; and any notes. Click 'Add Sample' when finished. Repeat this step as many times as you like to take additional samples of this product line. Click 'Continue to Review' when finished.

7. **Review and Submit.** Review the completed inspection. If there are any modifications that should be made, return to any of the sections to modify using the orange links on the left side of the page. When you are satisfied with the inspection, click 'Submit Inspection' at the bottom. A screen will appear to confirm that your inspection has been saved. If you are online, you can return to the Home screen. If

you are offline, within 10-15 seconds, the screen will refresh to the Start screen (step 1) and you can begin another inspection. Note that while offline, you cannot start a second inspection of the same site.

If you had completed the inspection offline, you will need to connect again to the internet for the data to sync.

**Recall that for an inspection to be completed offline successfully, you need to have used the MIS first in an online setting. For example, if you are using the MIS for the first time and you are in the field ready to complete an inspection offline, it *will not work* unless you have connected first in an online setting. This is only required once; it is not required each time you want to complete an offline inspection. After connecting one time in an online setting, you are set to begin your inspections from here on out without being online. **

When you return to your Dashboard, scroll down to the section called 'Inspections'. You will have the option to click on four different tabs: 'Ready to Import', 'Awaiting Results', 'In Process', and 'Reviewed'. 'Ready to Import' shows you inspections that have been completed but need to be imported. Clicking the 'Import Now' button will request the MIS to sync any data that was collected offline. Any data consistency errors will pop up and ask the inspector to resolve. This will also allow data to be displayed in the appropriate graphs. You also have the option to 'Delete' an inspection here.

If samples were collected, importing inspections will automatically send a notification to the laboratory for any inspections that should be coming soon and will activate inspections in two lists on the dashboard:

1. **'Awaiting Results'** – If you had collected samples for an external laboratory, the inspection will show up in this list. Once such samples are analyzed by the laboratory, results are automatically sent back to the inspector and the inspection will move to the next list ('In Process').

2. **'In Process'** – If no external laboratory samples were requested or if samples have been analyzed, the inspection will appear in this list. To finalize, click the green 'Ready to Finalize' button. A review of results will appear and allow you to indicate the inspection as passed for failed. You will also have the option to print or export to PDF. Clicking 'Finalize' again at the bottom will permanently finalize the inspection. Clicking 'Ready to Validate' will send the results to the next user in the workflow that has been created.
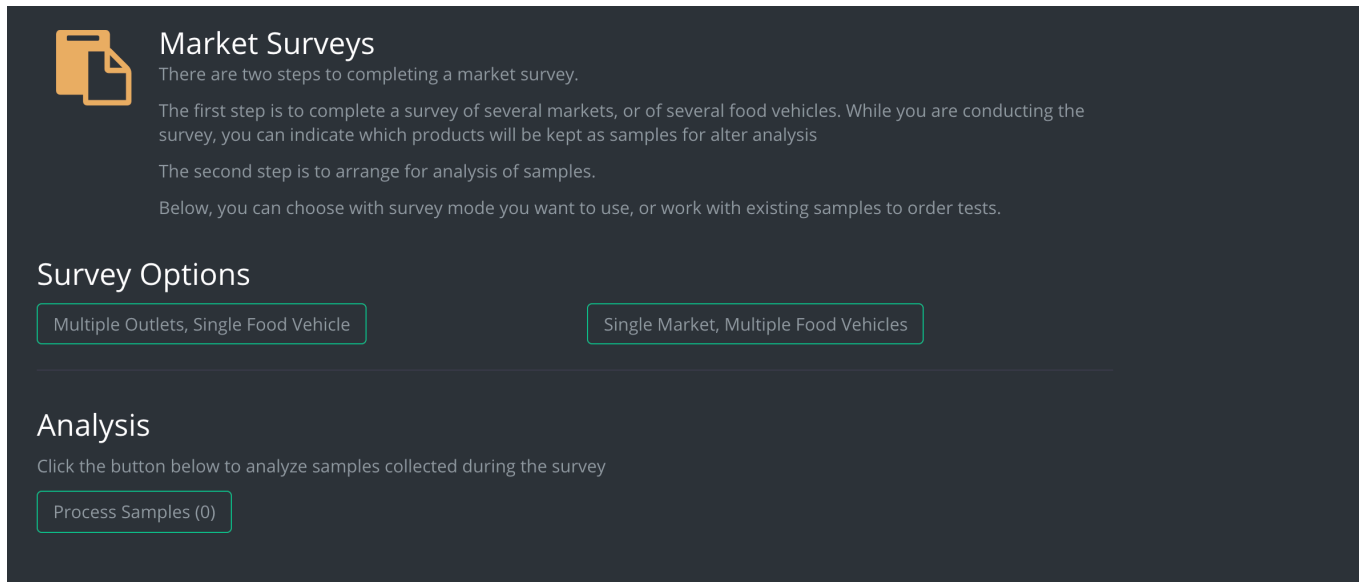
5.2: Conducting a Market Inspection as an Inspector

Similar to how you would conduct a producer or importer inspection, click 'Start Inspection' found in green at the top left hand side of the page directly under the Fortify! logo.

1. **Choose the type of site you want to inspect**. The dropdown menu will give options based on your permissions. Click on Market Inspection. As the screen indicates, there are two steps to completing a market inspection. The first step is to choose your survey option (are you going to multiple outlets or are you surveying multiple food vehicles?). The second step is to arrange for analysis of the samples, if desired. Proceed by choosing either Multiple Outlets or Single Market.

Market Surveys

There are two steps to completing a market survey.

The first step is to complete a survey of several markets, or of several food vehicles. While you are conducting the survey, you can indicate which products will be kept as samples for alter analysis

The second step is to arrange for analysis of samples.

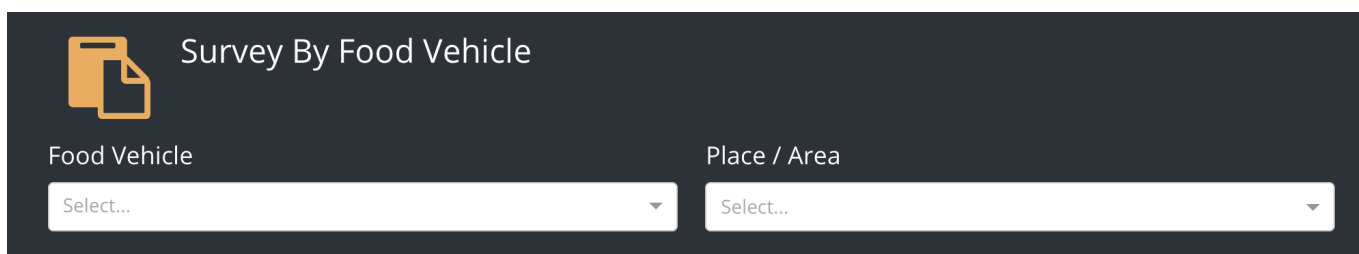Below, you can choose with survey mode you want to use, or work with existing samples to order tests.

Survey Options

Multiple Outlets, Single Food Vehicle   Single Market, Multiple Food Vehicles

Analysis

Click the button below to analyze samples collected during the survey

Process Samples (0)

2. **Enter in observed information for your market sample(s).** Follow the prompts on the screen. If you chose Multiple Outlets, Single Food Vehicle, you will need to select your food vehicle and place /area of collection. If you chose, Single Market, Multiple Food Vehicles, you will need to type in the name of your market (be sure to hit the Return button after typing in the name), and place/area of collection. Depending on which option you chose, the second screen will look a bit different. Follow the prompts which may include selection of market type (this drop-down has been pre-populated by your Country Administrator), name of market (you will not get a dropdown menu for this selection, instead, type the name of the market and hit Return on your keyboard), supplier, brand, packaging size, production and expiration date, type of labeling, and price information. You are also given the option to upload a document or photo of the collected market sample.

Survey By Food Vehicle

Food Vehicle   Place / Area

Select...   Select...

Survey: Maize Flour / Market #1

3. **Complete survey or records market sample(s).** You will then have the option to 'Record Sample', complete the survey ('Survey Complete'), or 'Add Another Product'. If you have chosen not to collect samples, then you can either move onto another product or click complete the survey by clicking Survey Complete. If you would like to collect a sample, click 'Record Sample' and you will be prompted to enter a sample ID, production code, and any relevant notes. By clicking 'Save and Close', your sample will be sent to the Analysis section of the Market Inspection. *If you do NOT click 'Save and Close', your sample(s) will NOT appear in the Analysis section.* If you are done collecting market product information, then you must click Survey Complete.

4. **Process your collected samples.** After recording your sample, you will be brought back to the home page of the Market Inspection. Notice that under the Analysis section on this page, you have a number of samples indicated in the 'Process Samples' button. Click on 'Process Samples' and you will be brought to a Sample Disposition page that will allow you to indicate whether the samples you have collected will be sent individually to a lab or composited and tested as a composite sample.

5. **Indicate the lab service requested and submit.** The Sample Disposition page allows you to enter in your sample ID, the national standards you would like the product tested against, and the requested laboratory service. You can choose to 'Request Another Service' or you can choose to 'Submit the Survey and the Samples'. When you choose to Submit, your market inspection will be sent to your dashboard. Click on Dashboard to view your most recent market inspection. Similar to the producer and importer inspections, you will be given the option to Import and, ultimately, Finalize.

Your Turn to Practice
Try conducting a few mock inspections of any site that you created in Module 3.4. Conduct at least one inspection that collects samples and one inspection that doesn't. Once you've finished, Import inspections into the Dashboard and find the inspections that you conducted there.

5.3: Analyzing Laboratory Samples

Now that you've conducted inspections and taken samples, it's time for the laboratory to analyze the samples and provide the results for the Inspector to complete the inspection. Only users from external laboratories and Producers and Inspectors with internal laboratories (or who will be conducting analyses themselves) will have access to this area.

Your Turn to Practice
Before starting this module, log in as the laboratory user you just created.

Click the 'Dashboard' on the left sidebar. This will show you the service requests and recently completed tests. Choose the orange Action Icons on the right side to either report results or view results.

VIEW RESULTS

#	Service Requested	Sample Collected	Sample ID	Lab Tracking	Assigned To	Sample Description	
1	NLU	03-08-2018	727	(not set)	(not set)	(not set)	⚖
2	NLU	13-07-2018	238-697	(not set)	(not set)	(not set)	⚖
3	NLU	12-07-2018	124	(not set)	(not set)	(not set)	⚖
4	NLU	12-07-2018	124	(not set)	(not set)	(not set)	⚖
5	NLU	15-06-2018	238-657	(not set)	(not set)	(not set)	⚖
6	NLU	09-04-2018	505	(not set)	(not set)	(not set)	⚖

Service Requests - Inspector Lab — Showing 1-6 of 6 items.

Choose the test you wish to conduct and fill the form with the results. Results should always have a numerical value with units, an error value, and any other comments necessary to describe the results. When you have completed the form, click 'Create' to save and submit the test results.

Test Results

Please perform the test indicated: Vitamin A on the sample 18-801 and enter the results below.

Sample Results Title

Sample #18-801 Results of Vitamin A

Unit

mgkg

Result

Measured Result

The Result of this test

+/- Error or Measurement Uncertainty

+/- Error / Measurement Uncertainty

Comments

Cannot / Will Not Perform Test ☐

Create   Cancel

Once all requested tests from a single inspection are completed and submitted, the Inspector who requested those particular tests will receive a notification that the test results were submitted and ready for review.

Module 6: Viewing and Using Data Dashboards

Fortification Program Managers and Country Administrators can use data visualized into dashboards. These data are automatically aggregated from all producers, all inspectors, and all laboratory users in the country. Industry data can be blinded and given a randomly generated number (Producer 1, Producer 2, etc.) to ensure specific proprietary information is not connected to a producer in generated reports.

On the Home page, or by clicking on 'Dashboard' you will see a 'Total' and 'Producers' prompt. Here you can select one or more automatically generated graphs to build a report.

Many of the graphs will require you to set additional information or settings to function properly. Click 'Graph Setup' and a series of prompts will appear to ask for things like a date range, place/region, or other information to sort or aggregate data by. Most data dashboards will also have dotted lines indicating minimum or maximum thresholds or acceptability ranges within which results are considered "passing".

Note that data dashboards will only populate when information is available, so it is very likely you won't see anything right away. All data dashboards have an option to print or export to PDF.
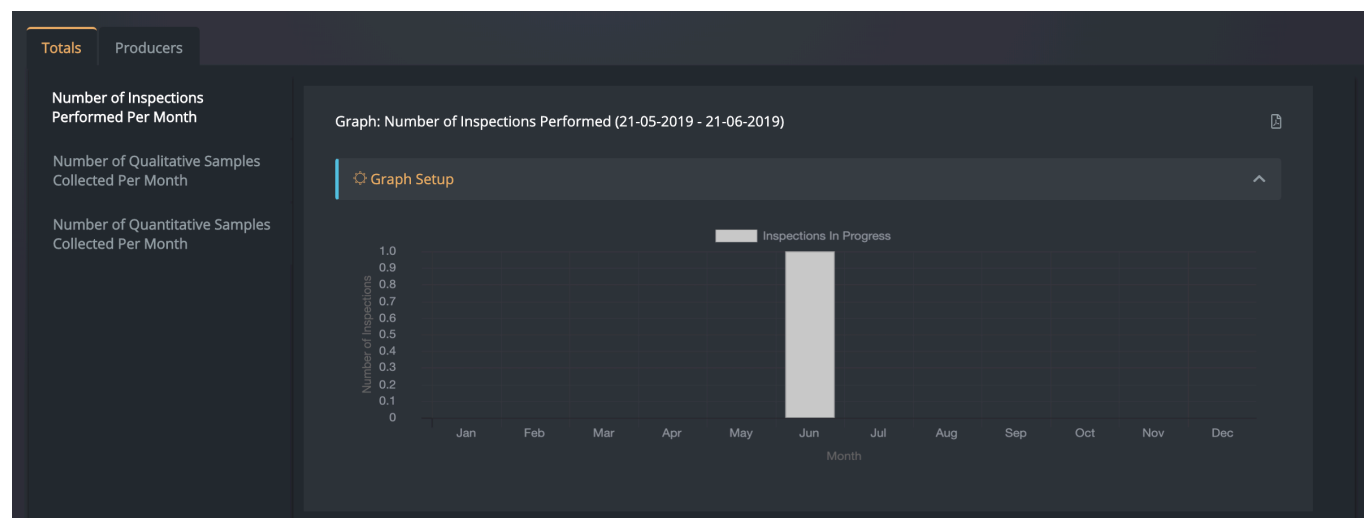
Data dashboards currently in the MIS or in the process of being built include the following list. Additional data dashboards can be requested by contacting the System Administrators (Laura Rowe – laura.rowe@ffinetwork.org and Florencia Vasta – fvasta@gainhealth.org).

Type of Data Dashboard	Aggregation Options
Checklist Results	By Producer/Importer/Market
% of Target Addition Rate	By Producer
Qualitative Test Results	By Producer/Importer/Market
Quantitative Test Results	By Producer/Importer/Market
Total Compliance Result	By Producer/Importer/Market, Over Time, By Administrative Area
Number of Qualitative Samples	By Producer/Importer/Market, Over Time, By Administrative Area
Number of Quantitative Samples	By Producer/Importer/Market, Over Time, By Administrative Area
Total Number of Inspections	By Producer/Importer/Market, Over Time, By Administrative Area

Total Volume of Fortified Food Produced	Over Time, By Administrative Area
Premix Utilization	Over Time, By Administrative Area
Producer Quality and Relative Market Share	Dashboard – producers are listed by name and categorized into "buckets" based on relative market share and total compliance results.
Producer, Inspector, and Laboratory Statistics	Dashboard – reporting the total number of registered producers, inspectors, and laboratories along with the average/median number of inspections conducted per producer/inspector and average/median number of samples analyzed per laboratory.