

A Rapid Assessment of the Impact of COVID-19 on Food Fortification Regulation Compliance in Uganda

Report

May 2021



Ministry of Health



Enhancing Grains for Healthier Lives

TABLE OF CONTENTS

1. INTRODUCTION	2
1.1 Background	2
1.2 Objectives of the assessment	2
1.3 Methodology.....	3
2. KEY FINDINGS	3
2.1 Number and status of fortifying producers	3
2.2 Motivation to fortify	5
2.3 Challenges faced by large-scale maize producers that fortify.....	5
2.4 Maize producer reasons for not fortifying	5
2.5 Internal monitoring.....	6
2.6 External monitoring	7
2.7 Distribution of fortified products.....	8
2.8 Impact of COVID-19 on fortification	8
3. RECOMMENDATIONS TO GOVERNMENT.....	9
4. CONCLUSIONS.....	11
5. ANNEX.....	11
5.1 Names of the team members	11
5.2 List of producers visited and their location, capacity, and brand name.	12
5.3 Questionnaire	18

1. INTRODUCTION

1.1 Background

The Government of Uganda is implementing mandatory food fortification regulations for salt, wheat flour, maize flour, and edible oils and fats to improve the nutritional status of the population. The regulation for universal iodization of salt came into effect in 1993. Regulations for fortified foods came into effect in 2011 and require that all wheat flour mills, maize flour mills producing 20 MT of maize flour per day, and oil industries producing 10 metric tons (MT) of oil/fats per day fortify products according to the national standards. Additionally, the regulations require that all wheat flour, maize flour, and imported oil/fats be fortified according to the national standards.

Compliance to food fortification regulations is monitored and enforced by food producers through internal quality assurance and quality control (QA/QC) mechanisms; routine market surveillance and inspection of premises by local government authorities (District and Municipality) and the Uganda National Bureau of Standards (UNBS); annual “Q” mark certification audits by UNBS; and assessments of the health impact of fortified foods through surveys such as the Fortification Assessment and compliance Tool (FACT), Uganda Demographic Health Survey (UDHS), and Uganda National Panel Survey (UNPS).

Since the country began to impose lock down measures in March, 18th 2020 to stop the spread of COVID-19, effective regulatory monitoring stalled and the effect of COVID-19 on fortification compliance was unclear. There was, therefore, an urgent need to carry out a rapid assessment to understand the status of the national food fortification program and to ascertain the effects of COVID-19 on the compliance of industries to national fortification standards. This assessment was within the National Food Fortification Strategy and the Ministry of Health (MOH) workplan and recommendations from the National Nutrition Information System (NNIS) workshop held in Jinja, Uganda, 25-29 January 2021. It was supported by Food Fortification Initiative (FFI) and the World Food Programme (WFP).

1.2 Objectives of the assessment

1. Update the inventory of wheat millers, maize millers, and oil producers across the country;
2. Ascertain the status of fortification, challenges brought about by COVID-19, and strategies food producers have used to cope with challenges to ensure compliance to fortification standards; and

3. Identify actions that can be taken by stakeholders to address constraints to compliance.

1.3 Methodology

The assessment focused on producers that fortify wheat flour, maize flour, and oil/fats; it did not include producers that fortify salt as iodised salt is largely imported from Kenya. The assessment involved physical visits to producers and conversations with management and technical staff. In some cases, inspections of the production process were conducted. Inspections included reviewing records of internal monitoring reports and making general observations. Quantitative and qualitative data was captured from the visits. Interviews were guided by a questionnaire which was pretested during visits to the first three producers included in the assessment and reviewed to eliminate redundancies and include critical questions.

A list of certified producers was obtained from UNBS. Teams visited all wheat flour mills (20) and oil/fats producers (12) on the list. Out of the 84 certified maize flour mills on the list, teams only visited the mills that produced more than 20 MT of maize flour per day (12).

The assessment was carried out by two teams consisting of officials from the Office of the Prime Minister, MOH, UNBS, FFI, and WFP. The visits took place 10-26 February 2021. The findings and recommendations will be presented to the National Fortification Working Group. The presentation will include suggestions on priority action areas and the roles and responsibilities to be addressed by government, food producers, and partners.

2. KEY FINDINGS

2.1 Number and status of fortifying producers

One of the objectives of the assessment was to ascertain the status of fortification in Uganda. The matrix below summarizes the findings.

Product	Status
Wheat flour	20 mills have been certified to produce fortified wheat flour in Uganda. Two of the 20 mills were not operational. One mill closed before the COVID-19 pandemic; the other mill closed 6 months ago i.e July 2020 (see annex 5.2). All operational mills fortified flour except one, Muzuri Internal (U) Ltd, a small miller that produces 1.8 MT/day. As a result, 17 out of 20 certified wheat flour mills fortify flour.
Maize	84 maize flour mills have been certified by UNBS. Of these mills, 17 have capacity to

flour	<p>produce at least 20 MT/day and are required by mandatory legislation to fortify. However, it is important to note that several maize mills producing more than 20 MT/day are not certified by UNBS or included in UNBS’s records. It is not clear why the mills are not certified.</p> <p>In order to be certified, it is the responsibility of the mill owner to prepare and invite UNBS to undertake the necessary checks. There is no enforcement of the “Q” mark for mills that do not apply. Since fortification has been included in the list of indicators for certification, most mills tend to under-declare actual capacity, choosing to report the operational capacity, which, on average, is less than 50% of actual capacity.</p> <p>Of the 17 certified maize flour mills with capacity to fortify, only six mills fortify. These mills have the capacity to fortify 300 MT, 15 MT, 200 MT, 79.2 MT, 30 MT, and 54 MT of maize flour per day, a total of 678.2 MT/day (approximately 169,550 MT of fortified maize flour per year). It is important to note that five of the owners of the fortifying mills are Foreign Direct Investment (FDI) and some of the producers fortify for a WFP safety net feeding program using WFP standards.</p> <p>According to United States Department of Agriculture (USDA) 2019 total maize production figures, Uganda produced 2.8 million MT of maize grain. This means that, if all the fortifying mills operate at full capacity, only 6% of total local production is fortified. The percentage of fortified maize flour could be higher if industrially milled maize is considered.</p>
Oil	<p>Only 10 oil producers with the capacity to produce at least 10 MT/day, which makes the producers eligible for mandatory fortification, have been certified by the government to produce fortified oil in Uganda. Out of the 10 certified producers, only one producer with the capacity of 10 MT/day is not fortifying. The two other oil millers were below capacity for mandatory fortification.</p>

The assessment teams observed that many of the producers no longer use the fortification logo on their packages. By regulation, the logo is not mandatory and no industry can be penalized for not using it. Yet the logo is intended to help those who do not read to identify fortified products as well as to indicate that the product had passed an inspection test by UNBS and was, indeed, fortified as per the claims on the label.

However, to add the logo, producers may apply to UNBS to be given the logo. The logo has more

than two colors and most producers only use two colors on their packages. Producers suggest removing yellow from the logo to reduce the cost of printing.

2.2 Motivation to fortify

During the assessment, teams interacted with quality control, production, and corporate/operational management staff. Most participants reported that they fortified to adhere to government regulations and to replace nutrients lost during milling. No participants reported that fortification's role in addressing the public health burden of micronutrient deficiency motivated them to fortify.

2.3 Challenges faced by large-scale producers that fortify

As indicated by the assessment's findings, the majority of wheat flour and oil producers comply to national fortification mandates and standards. Maize flour producers, however, face several challenges in complying with national mandates and standards.

Commonly consumed maize flour products include whole grain maize flour (porridge flour), fine flours locally known as No. 1 and No. 1.5, and composite flours including corn soya blend (CSB). CSB is specifically procured by WFP for purposes of providing a hot meal to refugees on arrival into camps.

The extraction rate and the type of mill, (i.e. hammer versus roller, or a combination) matter in meeting consumer preferences. The Ugandan population prefers fine, white flour with a low extraction rate, the amount of flour that is extracted from grains during milling. A fine texture is easiest to achieve in a hammer mill. Roller mills traditionally produce crystalline particles, a texture the Ugandan population does prefer and yet are not fortifiable. As a result, most operators of roller mills add a hammer mill component at the end of the production line to meet consumer preferences.

Mandela Millers, the largest maize flour producer in the country, overcomes consumer acceptability challenges in texture and color by adding a hammer mill to its system and ensuring that the iron compound used in the premix, the small amounts of vitamins and minerals added to fortify flour, complies to national standards.

2.4 Maize producer reasons for not fortifying

Maize flour producers that are unable to fortify, but would like to, cite the following reasons.

- Lack of information on fortification. It is important to note that several of the producers that cite this reason have been recipients of comprehensive advocacy efforts on the benefits of fortification, role of producers, and compliance to fortification regulations and standards.
- Limited technical or financial capacity to fortify. For small-scale producers, technological challenges include finding a properly sized micro-feeder, which ensures premix is adequately mixed into flour as it's milled. In addition, many hammer mill systems do not have the technological capacity to add micro-feeders.
- Small-scale producers' unit cost of premix is higher than large-scale producers' unit cost. Additionally, premix is packaged in quantities so large that small-scale mills are unable to finish the package in a day, potentially exposing the premix to damaging conditions.
- Large-scale producers mandated by national legislation to fortify fear competition from small- and micro-scale producers of less than 20MT per day, that are not mandated to fortify. Small and micro-scale producers may be able to sell flour at prices lower than large-scale producers that spend additional funds to fortify flour. This fear is compounded by the consumer preference for white flour, as flour that is fortified with an iron compound not in line with national standards may change the color of flour from white to brown.

2.5 Internal monitoring

Most wheat flour, maize flour, and oil producers have functional systems for quality control and assurance. However, technical and technological capacities vary according to the size of the producer. At least 50% of the producers visited are able to undertake basic quality monitoring tests, either internally or with assistance from external labs. Common parameters tested include aflatoxin, microbiological, moisture content, molds, etc., regardless of whether the producer is fortifying or not.

Producers that fortify complete qualitative and quantitative analyses. Daily production and premix usage records are manually kept in Counter Books by the majority of fortifying producers, but they do not use these records to do periodic premix reconciliations. Additionally, there is no evidence that external regulatory inspectors use the records to do premix reconciliation during external inspections. With the exception of two producers that have strategic plans for fortification, the majority of producers only use premix reconciliation information internally to account for the premix used. According to staff interviewed by the assessment teams, there is no motivation for producers to share production and premix data with the government unless regulatory inspectors request for them.

The qualitative analysis of fortified foods produced is primarily handled by quality control departments, while quantitative analysis is done by either UNBS or private labs accredited by UNBS such as Chemiphar, UIRI, or Mukwano Industries (U) Ltd to reduce the turnaround time.

Other producers such as Mukwano Industries and Mandela Millers are able to do a wide range of both chemical and biological analyses internally. They have, however, noted that some of the reagents for Vitamin A iChecks, a tool that measures iron content in fortified foods, are very expensive and hence limit the frequency of testing. To make testing samples less expensive, Mandela Millers is in the process of establishing a commercial food analysis lab that they hope will be accredited by UNBS. Afro-Kai Ltd. has an established aflatoxin testing facility that is used to obtain Phyto-sanitary certificates.

Lastly, it is important to verify that producers receive and use premix that includes the nutrients outlined in Uganda's fortification standards. However, due to lack of capacity to test the premix, producers rely on a Certificate of Analysis done prior to the shipment. The government does not have the capacity to carry out a quantitative analysis of the premix. Despite the Certificate of Achievement, the premix producers often receive is disappointing.

2.6 External monitoring

There are two government agencies that make frequent regulatory monitoring visits to the producers: 1) the MOH, mainly through district health and environmental inspectors who monitor adherence to good food manufacturing practices such as hygiene and sanitation, and 2) the District Labour Department, which monitors occupational safety, management of human resources, etc.

Fortification regulatory monitoring is a mandate of the UNBS and National Drug Authority (NDA). There is evidence of UNBS making monitoring visits to the producers, including those that are not fortifying. Most producers reported two visits of UNBS per year, before COVID-19. These visits often focused on certification, which is done annually, and surveillance, which is done anytime of the year. However, there is no evidence to show UNBS took steps to enforce compliance or guide the certified producers that are not fortifying to integrate fortification in their milling system.

With regards to internal industry testing, some occasional discrepancies have occurred between results of duplicate samples that producers have concurrently sent to other certified national and international labs. A challenge noted by a number of producers is the disparity in quantitative

analyses of iron and vitamin A levels. In a number of tests, vitamin A might fail when iron passes and vice versa. In such cases, the producers adjust their addition rate to correct the level for the failed nutrient, resulting in the other nutrient going beyond the maximum limit in the standards. The producers report discussing this with the relevant government agency. The producers, however, do not yet have a clear answer as to why this happens.

2.7 Distribution of fortified products

Distribution of fortified products across the country is very important, as population targeted with fortification are in all the regions. Most of the fortifying producers are based in central and mid-eastern Uganda, with only one fortifying wheat producer in the east and two fortifying oil producers in the north. Not all, but most, producers reported distributing their products throughout the country. All regions in Uganda have access to fortified wheat flour and oil. Fortified maize flour, on the other hand, is not accessible in all regions. Fortified maize flour is often available in supermarkets, which has consumers that tend to be less affected by micronutrient deficiencies, but difficult to find in rural areas where micronutrient deficiencies may be more prevalent.

2.8 Impact of COVID-19 on fortification

In general, there was no direct impact of COVID-19 on fortification as reported by all the producers during the assessment visits. Producers continued to fortify despite reduced capacity from factors such as lockdowns and absent staff. Premix reconciliation data from several producers confirms this claim. Internal controls continued, although external regulatory visits were not as frequent as expected. The lockdown did not affect imports of premix as premix could be airlifted easily. Additionally, due to reduced production of staple foods as a direct result of COVID-19, the existing stock of premix was adequate. In one case, when premix expired during the lockdown, the premix supplier was notified and the producer was able to increase the shelf-life of the premix for six additional months, time in which the premix would be used.

Production capacities of producers drastically reduced during the lockdown period for a number of reasons.

- COVID-19 safety procedures required producers to reduce the number of staff able to work at one time.
- The closure of schools reduced the demand for fortified maize flour and oils. Schools provided huge markets for these products.
- Delays in customs clearance and transportation led to delayed deliveries of wheat grains and crude oil imports.

- Reduced incomes of the population during lockdown and thus reduced demand for the products, whether fortified or not.
- Limited physical interaction between producers and wholesale buyers across the country. Although e-marketing became the norm, a number of the rural buyers were not connected to the internet.

3. RECOMMENDATIONS TO GOVERNMENT

The following recommendations come from producers as well as the assessment team. These recommendations should be considered by the various responsible stakeholders, not only government, so that program improvement can be realized. Some of the recommendations require further discussion to implement, and it is advised that discussions start as soon as possible. Where resources are required, stakeholders will need to mobilize together.

Sustainable access to quality premix and updated national standards

- Certify the quality of premix supplied to Uganda by various premix producers through NDA as mandated by law. Once certified, the government can produce a list of pre-qualified premix suppliers that industry could purchase from to ensure quality. The current technical and lab capacity of NDA should be enhanced to perform this function. However, in the short- and medium-term, the Global Alliance for Improved Nutrition Premix Facility can assist in the analysis and certification of premix.
- Explore the potential of using premix calculation figures to infer compliance, especially in light of the premix testing issues that Uganda faces. This could be done internally or externally by UNBS inspectors. However, if the premix quality issues are not addressed, premix reconciliation will not yield the correct result.
- Continue to require the addition of vitamin A to fortified oil in light of progress made in the reduction of vitamin A deficiency prevalence from 21% of the population in 2006 to 7% of the population in 2016 (Uganda Demographic and Health Survey 2016). However, as it can be unstable in flour fortification and cause changes in organoleptic properties of flour, the government should remove vitamin A from flour standards.

Production

- Sensitize producers to the health benefits of fortification (prevention of neural tube defects, iron-deficiency anemia, etc.) to keep producers informed of their critical role in addressing micronutrient deficiencies in Uganda. Provide refresher trainings for producers that have already received sensitization on fortification's health impact.

- Engage all certified maize flour producers with capacity above 20 MT/day that are not fortifying. Share information on fortification, the national regulation and standard that requires them to fortify, and capacity building to integrate fortification into their milling systems. Encourage UNBS to enforce fortification regulations now that fortification is included in the certification process.
- Engage small-scale producers through associations such as Rubaga Millers, an organization committed to help producers fortify. A cooperative model of organization may also help build small-scale producers' capacity to fortify. Explore the possibility of adopting the Sanku model for small-scale fortification.

Regulatory monitoring

- Integrate UNBS's systematic means of regulatory monitoring data collection, analysis, and sharing into FortifyMIS to make information sharing easier.
- Integrate FortifyMIS into the current NNIS project to benefit from coordination and resources.
- Evaluate the impact of the fortification logo on the fortification program to determine whether to make the logo mandatory or keep it voluntary.
- Ascertain current compliance to national standards and compliance during the COVID-19 pandemic through an informal market assessment of fortified food. The market assessment could be completed using FFI's Pull Strategy, an approach that empowers local advocates to conduct informal market analyses and build evidence-based recommendations that governments and food producers can use to improve adherence to national fortification standards.

Internal monitoring

- Train millers in QA/QC to ensure that internal critical control points for fortification are put in place and are regularly monitored for compliance.
- Remind producers to document procedures and maintain records required by guidelines including, but not limited to, approval, review, updating, and retention of information generated for fortification.
- Regularly train and mentor production and quality control staff on technical aspects of food fortification.

Distribution of fortified products

- Create consumer awareness and increase advocacy efforts that encourage consumers to purchase fortified products.

- Ensure fortification is included in institutional procurement (emergency food distribution, schools, prisons, police, etc.). Producers only fortify maize flour and its products when producing for tenders for organizations export countries such as Rwanda.

4. CONCLUSION

The assessment established the number of certified wheat flour mills, maize flour mills, and oil producers across Uganda. Though nearly all the wheat flour produced in Uganda and over 90% of oil is fortified, only an estimated 6% of all locally produced maize flour is fortified. The assessment also revealed the challenges that producers and regulatory inspectors face in collecting and sharing monitoring information.

The COVID-19 pandemic affected producers' level of operations, but it did not significantly affect fortification. However, access to fortified foods reduced due to decreased consumer demand and overall supply. If implemented by key stakeholders, the recommendations identified above can address critical gaps in the production of quality fortified products. At the Fortification Working Group meeting, it was suggested that these recommendations inform USAID's and the SUN Business Network's future support to the Office of Prime Minister.

5. ANNEX

5.1 Names of team members

S/NO	Name	Organization	Contact
1	Marvin Ssenkungu	OPM	mssenkungu@gmail.com
2	Sarah Ngalombi	MOH	sngalombi@yahoo.com
3	Vincent Kasozi	UNBS	Vincent.kassozi@unbs.go.ug
4	Ronald Afidra	FFI	afidron@yahoo.com
5	Wilson Enzama	FFI	wenzama@gmail.com
6	Lule Mark	WFP	mark.lule@wfp.org

5.2 List of producers visited and their location, capacity, and brand name

5.2.1 Wheat producers

SN	Mill Name	Region	District	Total Capacity MT/Day	Capacity Registered MT/Day	Actual Capacity MT/Day	Brand Names
1	Nile Agro Industry Ltd	Eastern	Jinja City	150	100	100	1. Nile fortified home baking wheat flour
							2. Nile fortified baker's wheat flour
							3. Modern fortified home baking wheat flour
							4. Modern fortified baker's wheat flour
2	Master Grain Millers Ltd	Eastern	Njeru	540	250	150	1. Master home baker's flour
							2. Fortified baking flour
3	Engaano Millers Ltd	Eastern	Jinja City	100	100	75	1. Home baker's flour
							2. Special baking flour
							3. Pure patent flour (wafers)
							4. Atta
							5. Soogi (porridge)
							6. Whole meal atta (for brown bread)
4	Mt. Elgon Millers (U) Ltd	Eastern	Mbale City	120	100	90	1. Safy fortified home baker's wheat flour
							2. Safy fortified baker's flour
							3. Atta flour

SN	Mill Name	Region	District	Total Capacity MT/Day	Capacity Registered MT/Day	Actual Capacity MT/Day	Brand Names
5	Kengrow Industries Ltd	Eastern	Jinja City	120	100	54	1. Gold medal home baking flour
							2. Gold medal baker's flour
6	Bakhresa Grain Milling (U) Ltd	Central	Wakiso	1,100	800	800	1. Azam fortified wheat flour
7	Altil Millers Uganda Ltd	Central	Wakiso	33	33	8.3	1. Home baking flour
							2. Baker's flour
8	King Millers Ltd	Central	Wakiso	50	40	37	1. Home baking flour
							2. Baker's flour
9	Bajaber Millers Ltd	Central	Kampala	540	400	162	1. Pembe
							2. Home baking flour
							3. Baker's flour
11	SMA Millers U Ltd	Central	Wakiso	50	46	40	1. Home baking flour
							2. Baker's flour
12	Ntake Bakery and Company Ltd	Central	Kampala		480		1. Baker's flour
							2. Home baking flour
13	Pan Afric Commodities Ltd	Central	Wakiso		96		1. Home baking flour
14	Mandela Millers Ltd	Central	Wakiso	300	300	300	1. Baker's flour
							2. Home baking flour
							3. Cake flour
							4. Atta flour
							5. Chapati flour
15	Kiddawalime Millers Limited	Central	Wakiso		100		

SN	Mill Name	Region	District	Total Capacity MT/Day	Capacity Registered MT/Day	Actual Capacity MT/Day	Brand Names
16	Dei Industries International Limited	Central	Wakiso		100		Not operating at the survey time
17	Ahmed Raza Foodss Industries Ltd	Central	Wakiso	Unknown	9	18.2	1. Home baking flour
							2. Atta flour
							3. Biscuit flour
							4. Bakers flour
18	Maganjo Grain Milliers	Central	Wakiso	360	70	295	1. Maganjo bakers flour
	Total			3,463	3,244	2,130	

5.2.2 Maize producers

SN	Mill Name	Region	District	Total Capacity MT/Day	Capacity Registered MT/Day	Actual Capacity MT/Day	Brand Names	Comment
1	Agahikaine Grains Ltd	Western	Kibale	20	1	10	1. Amani Grade 1	Not fortified
							2. Amani Grade 1.5	Not fortified
2	New Kakinga Millers Enterprise	Western	Ibanda	40	40	20	1. Kakinga Super	Not fortified
							2. Kakinga 1.75	Not fortified
							3. Kakinga 2	Not fortified

SN	Mill Name	Region	District	Total Capacity MT/Day	Capacity Registered MT/Day	Actual Capacity MT/Day	Brand Names	Comment
3	Granula Millers Company Ltd	Western	Mbarara	30	30	4	1. Granula maize flour	Not fortified
4	The Joseph Initiative Limited	Western	Kasese	12	60	9	1. The Joseph Initiative Super Maize Flour	Not fortified
5	Rhino Star Genesis Limited	Northern	Gulu City	50	50	30	1. Batem Maize Flour	Not fortified
6	Mandela Millers Ltd	Central	Wakiso	72	300	36	1. Supreme Fortified Maize Flour	Fortified
7	Aponye Uganda Ltd	Central	Kampala	40	15	15	1. Ugali fortified flour	Fortified
8	Pan Afric Impex (U) Ltd	Central	Wakiso	7	200	5	1. Joho Premium quality flour	
9	Afro-Kai Ltd	Central	Wakiso	30	17.8	15	1. Meal Life milled maize flour	Not fortified
							2. Meal Life fortified flour	Fortified
10	Maganjo Grain Millers Ltd	Central	Wakiso	10	2	5	1. Maganjo maize flour	Not fortified
							2. Maganjo maize flour fortified	Fortified
							3. Maganjo maize flour high flour	Not fortified
11	Reco Industries Ltd	Central	Kampala	75	54	22.5	1. Pearls maize flour	Not fortified
							2. Pearls fortified corn soya blend	Fortified

5.2.3 Oil producers

SN	Mill Name	Region	District	Total Capacity MT/day	Capacity Registered MT/day	Actual Capacity MT/day	Brand Names
1	Nile Agro Industries Ltd	Eastern	Jinja City	150	100	120	1. Nile fortified blended cooking oil 2. Nile fortified fry fats
2	Bidco Ltd	Eastern	Jinja City	1,500	1,000	1,000	1. Chipsy baking powder 2. Fortified Gold 3. Fortified Butto 4. Goldei fry 5. Fortune 6. Kimbo 7. Cowboy 8. Ship
3	Tasco Industries Ltd	Eastern	Jinja City	200	70	100	1. Star fry
4	Vegol Ltd	Central	Mukono	100	48	100	1. Best fry
5	Bajaber	Central	Wakiso	250	200	150	1. Pembe oil 2. Pembe baker's fat 3. Uto
6	Mt. Meru Millers Ltd	Northern	Lira	200	50	180	1. Star Goldy fortified cooking oil
7	MMP Agro Industries Ltd	Northern	Lira	100	30	30	1. Sunflower oil 2. Soya oil
8	Ngetta Tropical Hudge Ltd	Northern	Lira	22	10	22	1. Virgin Gold (not fortified)
9	Mukwano Industries Ltd	Central	Kampala	200	200	150	1. Roki 2. Mukwano purified Uganda oil

							3. Sunseed
							4. Mukwano soyabean oil
							5. Tamu baker's fats
10	Aponye	Central	Wakiso	30	10	20	1. Kitamu fortified oil
	Total			2,752	1,718	1,872	

5.3 Questionnaire

Uganda Large Scale Post-COVID-19 Mill Assessment

Questionnaire

Name of interviewer----- Date of interview: -----

Region: ----- District: -----

A. Contact Information

B. Mill/producer name: _____

C. Interviewee: _____ Position: _____

D. Email: _____

E. Phone (for follow-up) questions: _____

B. Mill/Producer Owner(s)

C. Name(s): _____

D. Email: _____

C. Flour Production

1. When was the mill installed? _____

2. What is the total installed production capacity in your facility per month? _____

3. What is the operational (utilization) capacity per month? _____

4. What kind of production equipment do you have at this mill? Roller flour mill or hammer? _____

Line #1 _____ Total capacity _____ Year installed

Line #2 _____ Total capacity _____ Year installed

Line #3 _____ Total capacity _____ Year installed

5. How many hours a day do you operate? _____ hours

6. How many days out of the month do you operate? _____ days

D. Wheat Flour, Maize Flour, and Oil Products

1. What are your flour/oil brand name(s)? *(if there is a different brand for each product, list all)*
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____
2. Do you currently fortify any of your brands? Yes No (if no, skip to question #3)
 - a. What motivates you to fortify?
 - b. How much of your flour is fortified? _____% or _____ MT
 - c. How long have you been fortifying your flour/oil?
 - d. Do you use the national fortification logo on your packaging?
 - e. Where do you source your premix? (domestic or imported, name of company)
 - f. How do you check to be sure the premix meets national standards?
 - g. If imported, is the premix tax-exempt?
3. Why do you not fortify your flour/oil?
4. What is your flour/oil market share in Uganda like? _____
5. Is your flour/oil sold and eaten *(mark all that apply):?*
 - a. Within your region only
 - b. All regions in Uganda
 - c. Exported to other countries

E. Wheat Flour, Maize Flour, and Oil Sales

The following questions are specific to the flour/oil that is sold and eaten in Uganda only.

1. What is the intended use for the mill's flour/oil (e.g., food processing vs. bakery vs. retail sale)?
2. What proportion of flour is produced for various consumer segments (e.g., public welfare programs/private retailers, retail branded/unbranded, etc.?)
3. What percentage of your products are purchased directly by local bakeries? _____

F. Millers Association

- a. Are you a member of the grain millers’/oil producers’/salt importers association?

If no, why? _____

- b. If yes, what role does the association play in supporting your business?

G. Internal Monitoring

- a. Can you tell me about the quality assurance and quality control practices that your mill follows? (probe for sample tests, process logs, premix reconciliation – ask to see examples)
- b. Do you send samples to regulatory authorities for quantitative analysis? If so, how often, to what lab, and can I see some of the results? (*record the date sample received, the result, and the date result delivered*).
- c. Do you face any challenges in the process of sending samples and receiving results from regulatory authorities? How long does it take to receive results?
- d. Over the last 3 months, have you produced flour/oil that has been compliant with Uganda’s national fortification standards?
- e. If not, what were your biggest challenges related to ensuring compliance?
- f. What challenges do you face, generally speaking, around the fortification of your flour/oil?
- g. What can motivate you to collect and share premix reconciliation data with government?

H. External Monitoring

Does government food inspectorate staff come to inspect? Yes No

- a. If yes, how often do they inspect per year?
- b. Do they announce when they will inspect?

- c. Do they take samples of your products specifically for fortification analysis?
- d. Do they audit your production facility for adequate use of premix?
- e. Do they ask you to share quality assurance and quality control results with them? If so, do you share with them? If you don't share, what is the reason?
- f. Do they report their findings to you after inspections? If so, how long does it take to get their results?
- g. What could be improved about the external food inspection visits?

I. Implications of COVID-19

- a. How has COVID-19 affected your operations generally and fortification specifically?
- b. Has COVID-19 had an impact on how compliant your product is to Uganda's fortification standards?
- c. How did you or are you coping with the challenges posed by COVID-19?

J. Operational Improvement

What efforts do you believe could be taken to improve your operations generally and to improve your ability to produce compliant fortified products, specifically?