

National Monitoring & Evaluation Framework for Food Fortification Programmes in Nigeria

Prepared By

National Agency for Food and Drug Administration and Control (NAFDAC)

Corporate Headquarters

Plot 2032 Olusegun Obasanjo Way, Wuse Zone 7

Abuja, Nigeria

October, 2014

ACKNOWLEDGEMENTS

On behalf of the Management and Staff of the National Agency for Food and Drug Administration and Control (NAFDAC), I acknowledge the support and contributions of our various stakeholders towards the successful development of the National Monitoring and Evaluation Framework on Food Fortification.

The Food Fortification Programme is an intervention initiated by the Federal Government in collaboration with some International Organizations. The programme is being driven by NAFDAC to enhance the quality of readily available and more affordable foods nutritionally, by adding vital minerals and vitamins known as micronutrients that are required by the body in minute quantities.

Micronutrient deficiency, also known as Hidden Hunger, has become a major devastating nutritional problem affecting the health of children, pregnant women and lactating mothers in most developing and underdeveloped countries. The major Micronutrient Deficiency Disorders include Iodine Deficiency Disorder (IDD), Vitamin A Deficiency (VAD) and Iron Deficiency Anaemia (IDA).

The goals of the National Monitoring and Evaluation Framework on food fortification is to coordinate the monitoring and evaluation activities of Government and all relevant stakeholders involved in the implementation of food fortification programmes, as well as to facilitate processes for ensuring consistent collection, collation and dissemination of good quality data on food fortification in Nigeria, to enable evidence-based decision making.

I specifically acknowledge the support and expert contributions of the United Nations Children's Education Fund (UNICEF) in the area of food fortification and for providing funds for the different processes involved in the development of this Monitoring and Evaluation Framework.

I also acknowledge the support and contributions of the Global Alliance for Improved Nutrition (GAIN), Micronutrient Initiative (MI) and the National Fortification Alliance (NFA).

The Monitoring and Evaluation Framework will be effectively utilized by NAFDAC and relevant stakeholders to strengthen the Agency's efforts towards preventing Micronutrient Deficiency Disorders (MDDs) in order to consolidate the gains recorded in Food Fortification Programme in Nigeria.

Thank you.

Paul B. Orhii, JD, MD, PhD, OON
Director-General (NAFDAC)

Acronyms

CPC	Consumer Protection Council
FMARD	Federal Ministry of Agriculture

FMoH	Federal Ministry of Health
GAIN	Global Alliance for Improved Nutrition
HACCP	Hazard Analysis and Critical Control Points
HKI	Helen Keller International
M&E	Monitoring and Evaluation
MI	Micronutrient Initiative
NAFDAC	National Agency for Food and Drug Administration and Control
NDHS	National Demographic and Health Survey
NFA	National Fortification Alliance
QA	Quality Assurance
QC	Quality Control
SON	Standards Organization of Nigeria
TV	Television
UNICEF	United Nations Children’s Fund
USAID	United States Agency for International Development
WB	World Bank
WHO	World Health Organization

Table of Content

Acknowledgement	i
------------------------------	----------

Acronyms.....	ii
Chapter One: Introduction and Background.....	5
Chapter Two: The National M&E Framework for Food Fortification.....	13
Chapter Three: The Results Framework for Food fortification in Nigeria.....	14
Chapter Four: Performance Monitoring Plan.....	16
Chapter Five: Data Management Plan.....	32
Chapter Six: Evaluation Plan.....	34
Chapter Seven: National Food Fortification Project targets 2014 – 2016.....	35

Chapter One

Introduction and Background

1.1 Country profile & relevant key health indices

Nigeria is made up of 36 states and the Federal Capital Territory (FCT), which are zoned into six geo-political zones as shown in Figure 1.0. The country lies between latitudes 4⁰ and 14⁰ North of the Equator and longitudes 3⁰ and 14⁰ East of the Greenwich Meridian, and occupies a total land mass of 923,768 square Kilometres [1]. Nigeria shares boundaries with Niger to the North, Cameroon to the East, Benin Republic to the West and the Atlantic Ocean to the South. The population of the country according to the 2006 population census was estimated to be 140,003,542 [2]. With an exponential annual growth rate of 3.2%, the population of Nigeria was estimated at 169,019,328 with 20% of the population below 5 years of age in 2012 [3]. Nigeria runs three tiers of government –Federal, State and Local Government (LGAs). The healthcare delivery system is tailored along the three tier governance structure with tertiary health facilities at the national level, secondary health facilities at state levels and the primary healthcare (PHC) facilities at the Local Government.

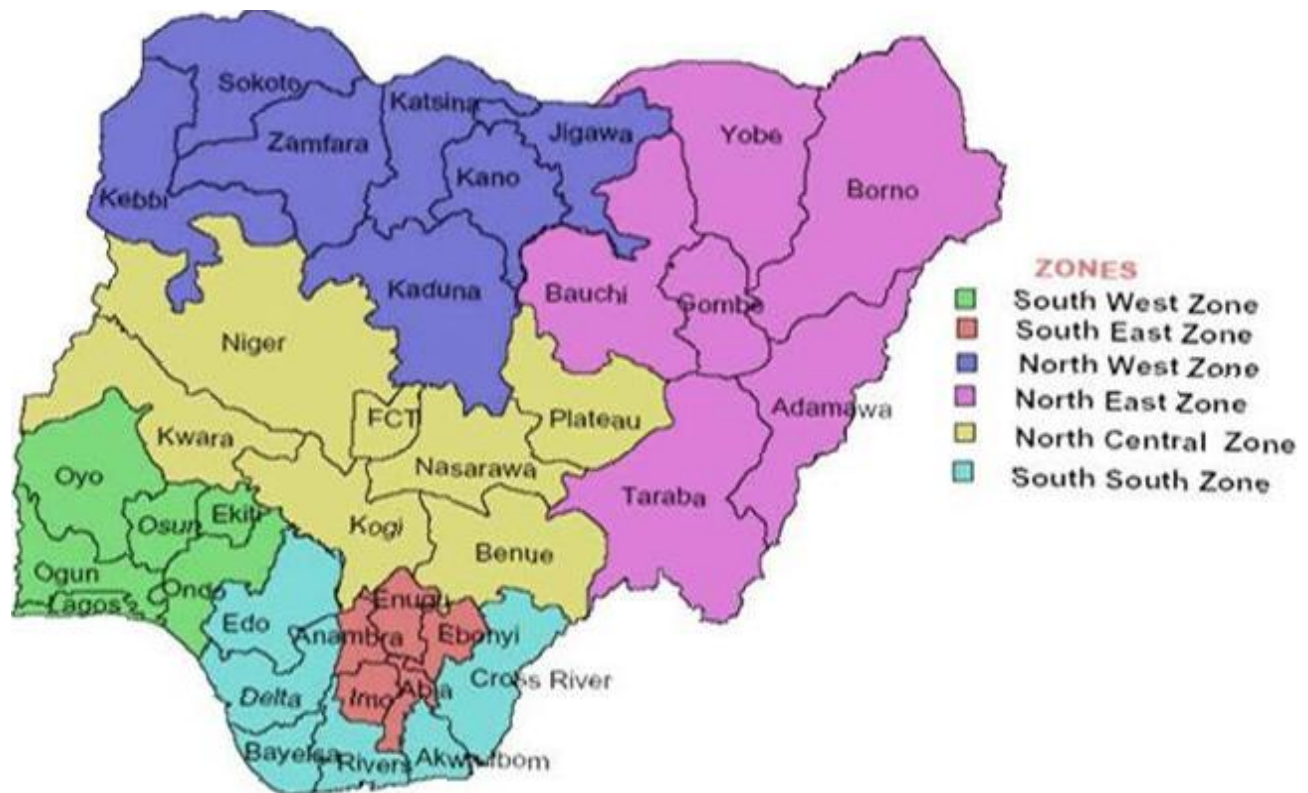


Figure 1.0 Map of Nigeria showing the 36 states & FCT, and the six geo-polical zones

Nigeria has a number of Micro nutrients deficiency challenges, one of which is Vitamin A deficiency. This has been considered a public health problem in Nigeria for a number of reasons:

- i. Vitamin A deficiency (VAD) affects overall survival, intelligence and productivity of the child.
- ii. Under five mortality is currently 197/1000 live births in Nigeria. Vitamin A deficiency is directly responsible for as much as 25% of this mortality, the prevalence of which is still about twice the global cut-off point of 70/1000 live births.
- iii. Prevalence of VAD in children under 5 (as measured by blood retinol level) is about 28.1% in Nigeria, which is about 6 times the global standard of 5%
- iv. Prevalence of xerophthalmia related cornea scars in children under 5 is 1% in Nigeria, which is about 20 times the benchmark of 0.05% prevalence that indicates a public health problem.
- v. Prevalence of night blindness in children under five is 3.7% in Nigeria, about 4 times the benchmark of 1% that is indicative of a public health problem.

Similarly Iodine and Iron deficiency anemia affect a large proportion of the population. For instance, iodine deficiency disorders (IDD) includes goiter, cretinism, hypothyroidism and reproductive failures (still birth, miscarriages) affect a number of children who grow up stunted, apathetic, mentally retarded and at times incapable of normal movement, speech or learning, reducing their IQ by 10-15% points. Additionally, approximately 11,000 deaths occur among young Nigerian women every year in pregnancy and childbirth due to iron deficiency or anemia.

Brief history of Food Fortification in Nigeria

The Food Fortification Programme is an intervention to enhance the quality of readily available and more affordable foods nutritionally by addition of some vital minerals and vitamins required by the body. Although these minerals and vitamins are required in minute quantities, their absence in the body can cause severe Micronutrient Deficiency Diseases (MDD).

Effort to curb or eliminate Micronutrient Deficiency Disorders in Nigeria started as a result of recommendations made during the 'World Summit for Children' held in 1990, in New York, USA.

In 1992 at the International Conference on Nutrition (ICN), in Rome, participants called for the virtual elimination of micronutrient deficiencies by the year 2000. These resolutions were further adopted by the Organization of African Unity (OAU) at the Dakar meeting later in the same year.

Available evidence showed that Nigerians had, and still has one of the highest rates of child and maternal mortality in the world with Vitamin A Deficiency (VAD) being a major contributory factor. Micronutrient malnutrition, also known as Hidden Hunger, has become a major devastating nutritional problem affecting the health of children, pregnant women and lactating mothers. The major Micronutrient Deficiency Disorders include Iodine Deficiency Disorder (IDD), Vitamin A Deficiency (VAD) and Iron Deficiency Anaemia (IDA).

In view of the above, the Federal Government, in collaboration with International Organizations and relevant developed agencies, such as World Health Organizations (WHO), Global Alliance for Improved Nutrition (GAIN), United Nations Children's Education Fund (UNICEF), Micronutrient Initiative (MI) and a committee of selected experts initiated certain actions and mounted control programmes aimed at addressing the micronutrient deficiency problems in the country.

Nigeria is the first country in Africa to get international recognition for achieving Universal Salt Iodization. In the 80's, Iodine Deficiency was a significant public health concern in Nigeria with a total goiter rate as high as 67% in 1988. To combat this public health problem, the government, with the UNICEF support, launched the Universal Salt Iodization programme in Nigeria.

At the time the programme started in 1993, only 40% of salt consumed in the country was iodized. However, in the last ten years, the programme has achieved tremendous success. The goiter rate has now reduced to 6%. Household access to iodized salt has consistently increased to reach universal level today. The programme is managed by the National Agency for Food and Drug Administration and Control (NAFDAC) in collaboration with the Standard

Organization of Nigeria and the National Planning Commission. One of the success factors has been the commitment of the food industry and the high level of enforcement by NAFDAC. This whole achievement can be summarized as follows:

- ✓ In the early 1990s Iodine Deficiency Disorders (IDD) constituted a major threat to the health of Nigerians. In endemic States, Total Goitre Rate (TGR) prevalence was as high as 67% as at 1988 and in 1990, an estimated 40 million Nigerians were afflicted by Goitre. Universal Salt Iodisation (USI) was globally recommended during the World Summit for Children in Geneva, in 1990 as a strategy for combating IDD.
- ✓ Nigeria, a signatory to the Summit goals, commenced a systematic onslaught on IDD with the establishment in 1993 of mandatory Universal Salt Iodisation legislation. As at that time only 40% of table salt in the markets was iodised, and an estimate of 25 to 35 million Nigerians were still at risk, with Total Goitre Rate reported as 20%.
- ✓ By 1998, 98% of Households in the country had access to adequately iodized salt, while the TGR was assessed to down to 11%. The Median Urinary Iodine was given as over 130ug/dl by a study carried out in 1999.
- ✓ Between 2000 and 2001 faltering levels of iodine in table salt and uncoordinated activities by the regulatory agencies and other bodies were observed.
- ✓ A national **IDD/USI** Task Force was set up in August 2002 to work out strategies for ensuring sustained compliance by the Salt Industry to achieve delivery of adequately iodized salt to consumers, as well as coordinate all efforts and successes made by all stakeholders. Institutionalization of monitoring of iodized salt was adopted as follows:

- ✓ **SON** - Quarterly, at Factory level.
- ✓ **NAFDAC** - Annually, (October), at Distributor/Retail level.
- ✓ **Federal Ministry of Education** – Annually, at Household level. It must be recalled that National Primary Health Care Development Agency (NPHCDA) carried out the initial monitoring at homes, before Education Ministry took it over, as it was found more convenient and more cost-effective to ask pupils to bring small quantities of salt from home to school for testing for iodine

- ✓ Iodine Field Test kits are provided by **UNICEF**. Salt that fails the Iodine test is further sampled for confirmatory laboratory tests at NAFDAC laboratories.
- ✓ A consolidated national report of USI status is compiled by SON annually. Concerted efforts by all stakeholders, with particular reference to the regulatory agencies and the Salt Industry earned Nigeria the highly coveted USI certification award in November, 2005, after an assessment study by a team of international assessors from ICC/IDD, Canada. Nigeria was found to have sustained 100% Salt Iodization at factory and distributor ends and above 98% at retail end for over five years running.
- ✓ The 2% deficit at the retail end had always been attributed to the production, sale and consumption of locally produced non-iodized salt from the four goiter endemic States in Nigeria, namely, Benue, Ebonyi, Nasarawa and Taraba, as well as non-iodized salt smuggled into the country.
- ✓ Awareness campaigns to those States by NAFDAC have yielded positive fruits and there is drastic reduction in consumption of the local salt by communities
- ✓ NAFDAC has also been able to reduce the presence of imported non-iodized salt in the supermarkets through constant market raids and mopping up activities. A study carried out in 2005 revealed a Goitre rate in Nigeria of 6%, an indication that IDD may not be regarded as a public health problem in Nigeria. It is also good to be sensitive to the fact that it is easier to succeed than to sustain success.
- ✓ This strategy yielded fruits that contributed immensely to the award of USI certification to Nigeria in November, 2005. Adequate Salt Iodization had been sustained with obvious concerted efforts by all relevant sectors at 100% (factory end) and over 98% at Distributor, Retail and Household ends for over five years running.
- ✓ In 2008, NAFDAC embarked on market raids to enforce guidelines on retail packaging of iodized salt meant for household consumption in pack sizes of 1kg and below. The objective of the guidelines that phased out the 25kg bags is to ensure good keeping quality and better retention of adequate Iodine level until consumption time, as against the retailing of the 25kg bags of iodized salt in open basins with cups. Non compliant products were mopped up for destruction. This exercise was followed up by nationwide market-to-market sensitization campaigns on rejection of non compliant products by both the sellers and buyers.

- ✓ NAFDAC monitoring results also indicated **99.72% and 92.23%** (2008), **99.66% and 99.61%** (2009) and **100% and 99.9%** (2010) salt iodization at **Distributor and Retail levels respectively**. Obviously, there has been slippage at the retail level of salt iodization before 2009.
- ✓ In 2012, the interim monitoring result at distributor and retail levels are 100% and 99, 91% respectively. Results obtained were from 18 states, Benue, Ebonyi, Kogi, Plateau, Cross River, Sokoto, Ekiti, Abuja, Niger, Yola, Jigawa, Enugu, Kebbi, Osun, Akwa Ibom, Bayelsa, Kano, and Borno.

In the case of food fortification with Vitamin A:

In the late 1990s the vitamin A Food Fortification group of experts, which included officers from NAFDAC and the Standard Organisation of Nigeria (SON) identified three food vehicles – flour, sugar and vegetable oil – to be used for the fortification programme and established the levels for each of the nutrients. The fortification standards were launched by SON in 2000 and mandatory fortification took effect officially in September 2002. The standard has been recently reviewed.

A survey conducted in October, 2003 by NAFDAC that sampled flour and vegetable oils from the distribution chain for laboratory assessment of vitamin A levels indicated only 5 percent compliance.

The NAFDAC Food Fortification with Vitamin A regulations, 2004 addresses the following areas: prohibition of sales of the specified food vehicles without adequate fortification with Vitamin A, labelling of Vitamin A fortified foods, which include an Eye Logo for its identification, proper packaging, advert materials to be censored and granted permit by NAFDAC before airing, penalty for non-compliance. In 2006, the Agency duly gazetted and published the “NAFDAC Food Fortification with vitamin A Regulations 2006” and “The Food Fortification Regulation 2006”.

In 2009 the Global Alliance for improved Nutrition [GAIN] in phase 2 Food Fortification Project provided a grant to the Government of Nigeria for the project titled “Social Marketing Capacity Building, Monitoring, Evaluation and Impact Assessment of Fortified

Food with NAFDAC as the Executing Agency during which the following achievements were recorded.

- Review of standards and regulations on wheat and maize flour in line with the findings of the report on the prevalence and severity of folic acid, zinc and selenium deficiencies among under-fives, pregnant and lactating women in the population.
- Organized a national Train of Trainer (ToT) workshop for laboratory technicians from industries and relevant institutions on methods for vitamins and mineral analysis in fortified foods.
- Establishment of 2 fortification plants for small scale producers of maize and vegetable oil in Yola and Kano respectively.
- Conducted a National advocacy and sensitization workshop for policy makers to secure commitment and create awareness on the consequences of Vitamin A Deficiency (VAD) and other Micronutrient Deficiency Diseases (MDD).
- Sensitization awareness with Cottage Vegetable Oil/Maize Millers in Yola on the need to patronize the fortification plant.

GAIN entered into a phase 3 project titled: Strengthening Large Scale Fortification in Nigeria through Compliance and Social Marketing with NAFDAC as the executing Agency for the period of 1st May 2012 to 30th April 2015.

In 2012, UNICEF and GAIN donated i-Check equipments and vitamin A test kits to NAFDAC to be used for semi quantitative spot analysis of food products (flour, vegetable oil and sugar). Both NAFDAC and the industry were trained by GAIN on the use of i-Check equipment.

Survey Results of Vitamin A and Fe Levels in the Mandatory Fortified Food Vehicles at Factory, Distribution and Market Outlets in 2012 was conducted. The results indicated low compliances at all levels. This led to Training of Trainers (TOT) workshop organized for officials of NAFDAC, the industries, Standard Organization of Nigeria (SON) and Consumer Protection Council (CPC) by GAIN in September 2013. The theme was “**Monitoring of Fortified Foods at Production and Retail Levels**”. This was followed by cascade training conducted in all the zones between September-November 2013. Monitoring of compliance of food vehicles to mandatory fortification is currently ongoing.

However, the programme is not without challenges. There are two major challenges facing the country as regards Vitamin A food fortification. These are the continued smuggling of non-fortified edible vegetable oil and sugar into the country, the existence of cottage industries involved in making of maize flour and the manual production of edible vegetable oil, that do not have the facility to fortify their products.

‘Although NAFDAC is continuously making efforts to mop up smuggled non-fortified food vehicles, there is need for strengthened and continued collaboration among relevant government agencies in order to prevent the influx of these products into the country.

There is also the need to look at the possibility of providing retail packs of Vitamin A premixes and sprinkles, which the cottage industries can easily afford in order to ensure 100 per cent mandatory fortification of the three chosen food vehicles in Nigeria.

1.2 Goal of the M&E framework

The goal of the national M&E Plan on food fortification is to coordinate the Monitoring and Evaluation activities of Government and all relevant stakeholders involved in the implementation of food fortification programmes in Nigeria. Secondly, the national M&E plan serves to facilitate processes for ensuring consistent collection, collation and dissemination of good quality data on food fortification in Nigeria. Additionally, the plan will be used to streamline the linkages between data collection efforts in different locations and to promote information sharing and effective feedback for evidence-based and informed decision making.

This M&E framework is to provide a credible platform for the collection of reliable qualitative and quantitative national routine and periodic data on food fortification. It is to support the stakeholders’ efforts to improve the health status of Nigerians by enhancing the micronutrients status of the population through mandatory fortification of food vehicles (salt, wheat and maize flour, vegetable oil and sugar).

1.3 Objectives of the National M&E Framework

The key objectives of the National M&E framework are to:

- i. Ensure that fortification interventions are carried out In accordance with statutory food fortification requirements.
- ii. Ensure that fortification interventions are available, affordable and acceptable to the population.
- iii. Ensure that the population consumes fortified food and interventions are accessible to the population (Coverage)
- iv. Ensure that per capital consumption of fortified foods meet international requirements.
- v. Determine how the micronutrients status has improved in the population over time and in relation to fortification efforts.

Chapter Two

2.1 The National M&E Framework for food fortification

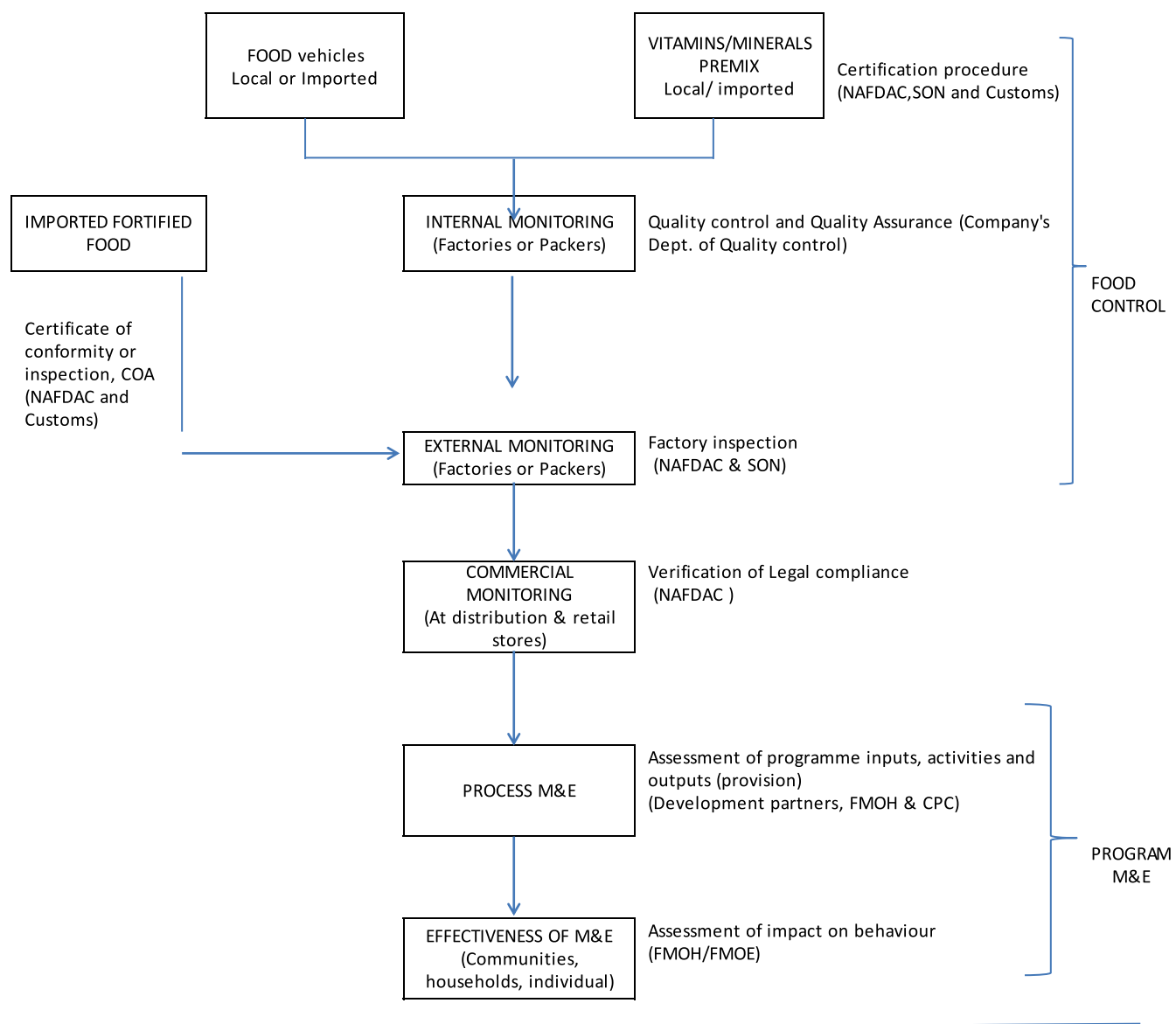


Figure 2.1: Flow chart of National M&E Framework for food fortification

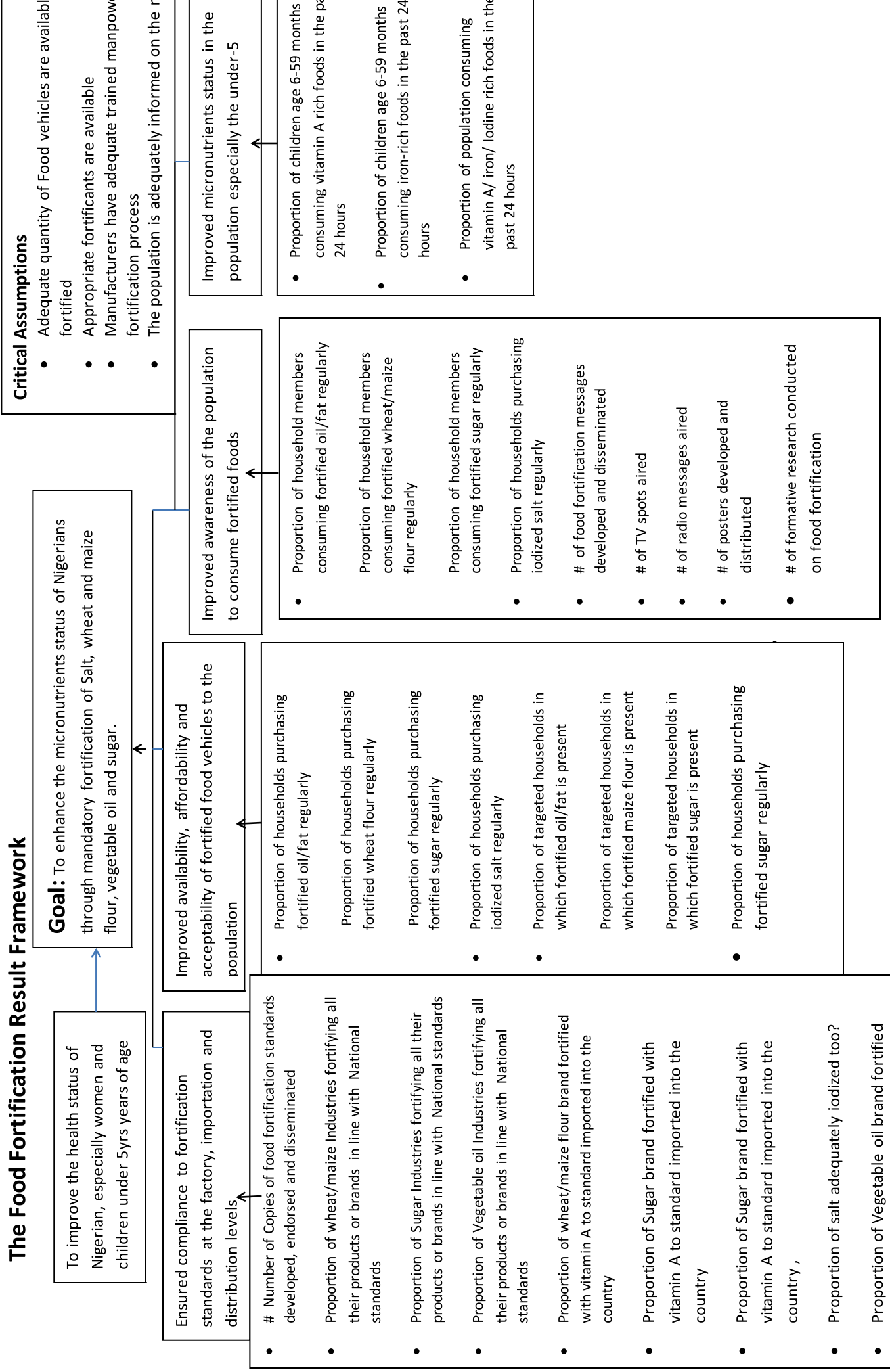
The framework for monitoring food fortification with vitamin A, Iron and iodine in the country is presented in Figure 2.1. This section presents a basic overview of the activities and responsibilities of key stakeholders and Partners for monitoring and evaluation of various fortification programs. Further details of indicators to be tracked and the frequency of data collection are outlined in the performance monitoring plan in Chapter Four.

Chapter Three

3.1 The Results Framework for Food Fortification in Nigeria

The food fortification results framework provides an overview of all fortification activities within the country supported through various partners, regulators and stakeholders. The results framework depicts the linkage of activities on food fortification by various key players, key targets, technical areas and expected outcomes over the lifetime of the programme. Efforts have been made to ensure the inclusion of key impact and outcome indicators as well as the documentation of process indicators (input and output). The M&E system will ensure project-wide monitoring and that all indicators listed on the results framework are tracked and reported accordingly. The measurement and analysis and reporting of the indicators would enable all stakeholders to track progress, demonstrate results and take corrective actions where necessary to improve on the delivery of appropriate food fortification to improve the health status of the population.

The Food Fortification Result Framework



Chapter Four

4.1 Performance Monitoring Plan

	Performance Indicator Title	Indicator Definition and Unit of Measurement	Data Source	Method/Approach of Data Collection or Calculation	Data Acquisition by NFA		Analysis, Use and Reporting	
					Schedule/ Frequency	By Whom / Person/ Team	Schedule/ Frequency	By Whom / Person/Team
Goal: Enhance the micro-nutrients status of Nigerians through mandatory fortification of wheat and maize flour, vegetable oil and sugar.								
GOAL	Improved health status of Nigerians, particularly women and children	Definition: 1.Prevalence of vitamin A deficiency in children age 6 – 59 months 2.Prevalence of anaemia in children age 6 – 59 months 3. Prevalence of anaemia in women age 15 – 49 years Unit of measurement: Percentage (%)	FMOH, NDHS MICS, NBS	SMART Survey	Five Years	NFA Secretariat	Five Years	NFA
Result 1: Ensured intervention was functioning adequately at the factory, import and distribution levels								
Food production and distribution	1.Quantity of fortified food produced, within the country	Definition: 1.Quantity of wheat/maize flour (Tons) produced per factory per annum 2.Quantity of sugar (Tons) produced per factory per annum 3. Quantity of Vegetable oil (Litres) produced per factory per annum. 4. Quantity of salt (Ton) produced per factory per	Industry production and sales records	Industry production and sales records SON, NAFDAC	Yearly	Industries Regulatory Agencies	Yearly	NAFDAC, SON

		annum								
		Unit of measurement: Kilograms (Kg) for weight measurement of wheat and sugar. Litres for volume measurement of oils								
2.Quantity of fortified food imported into the country		Definition: 1.Quantity of wheat/maize flour (Tons) imported per annum 2.Quantity of sugar (Tons) imported per annum 3.Quantity of Vegetable oil (Litres) imported per annum. 4. Quantity of salt (Ton) imported per annum	Customs records, NAFDAC	Customs records, NAFDAC	6 monthly	Customs services. SON,NAFDAC,	6 monthly			SON, NAFDAC, CUSTOMS
3. Quantity of fortified food distributed within the country		Unit of measurement: Kilograms (Kg) for weight measurement of wheat and sugar. Litres for volume measurement of oils								
		Definition: 1.Quantity of wheat/maize flour (Tons) distributed per annum 2.Quantity of sugar (Tons) distributed per annum 3.Quantity of Vegetable oil (Litres) distributed per annum. 4. Quantity of salt (Ton) distributed per annum.	Sales records of major distributors, Industry, NAFDAC	Sales records of Distributors, NAFDAC	6 monthly	NAFDAC, SON	6 monthly			NAFDAC

Compliance to mandatory legislation on food fortification (Food control and Regulation)		Unit of measurement: Kilograms (kg) for weight measurement of wheat and sugar. Litres for volume measurement of oils							
	# Copies of food fortification standards developed, endorsed and disseminated	Definition: 1.Food fortification standards are prepared based on WHO recommendations and national consumption patterns 2.Standards are presented and endorsed by NFA 3.# of Institutions responsible for implementation, monitoring and regulation who received copy of standards. Unit of measurement: Number	Existing standards and relevant documents reviewed and discussed by working group. Distribution list	SON, NAFDAC, Industry, international monitoring	Five years	NAFDAC, SON	Yearly	NAFDAC, SON	
	Proportion of wheat/maize Industries fortifying all their products or brands according to National standards	Numerator: # of wheat/maize Industries fortifying all their brands according to National standards Denominator: Total number of registered wheat/maize industries in the Country	NAFDAC inspection of compliance to mandatory legislation, SON	NAFDAC report, SON	Quarterly	NAFDAC, SON	Quarterly	NAFDAC, SON	
	Proportion of Sugar Industries fortifying all their products or brands according to	Numerator: # of Sugar Industries fortifying all their brands according to National standards Denominator: Total number of registered Sugar industries in the Country	NAFDAC inspection of compliance to mandatory legislation	NAFDAC report	Quarterly	NAFDAC	Quarterly	NAFDAC	

	National standards								
	Proportion of Salt Industries fortifying all their products or brands according to National standards	Numerator: # of Salt Industries fortifying all their brands according to National standards Denominator: Total number of registered Salt industries in the Country	NAFDAC inspection of compliance to mandatory legislation	NAFDAC report	Quarterly	NAFDAC	Quarterly	NAFDAC	
	Proportion of Vegetable oil Industries fortifying all their products or brands according to National standards	Numerator: # of Vegetable oil Industries fortifying all their brands according to National standards Denominator: Total number of registered Vegetable industries in the Country	NAFDAC inspection of compliance to mandatory legislation	NAFDAC report	Quarterly	NAFDAC	Quarterly	NAFDAC	
	Proportion of wheat/maize flour brand fortified with vitamin A to standard imported into the country	Numerator: # of wheat/maize flour brands fortified with Vitamin A to standard Denominator: # of wheat brands imported into the country	Certificate of conformity from country of origin	SON report	Per batch	SON	Quarterly	SON	
	Proportion of Sugar brand fortified with vitamin A to standard imported into the country	Numerator: # of sugar brands fortified with Vitamin a to standard Denominator: # of sugar brands imported into the country	SON inspection of compliance to mandatory legislation	SON report	Per batch	SON	Quarterly	SON	

Proportion of Vegetable oil brand fortified with vitamin A to standard imported into the country	Numerator: # of vegetable oil brands fortified with Vitamin A to standard Denominator: # of vegetable brands imported into the country	SON inspection of compliance to mandatory legislation	SON report	Per batch	SON	Quarterly	SON
Proportion of wheat/maize flour brand fortified with Iron to standard imported into the country	Numerator: # of wheat/maize flour brands fortified with Iron to standard Denominator: # of wheat brands imported into the country	SON inspection of compliance to mandatory legislation, NAFDAC	SON report, NAFDAC	Per batch	SON	Quarterly	SON
Proportion of salt brand fortified with iodine to standard imported into the country	Numerator: # of salt brands fortified with iodine to standard Denominator: # of salt brands imported in the country	SON inspection of compliance to mandatory legislation, NAFDAC	SON report, NAFDAC	Per batch	SON, NAFDAC	Quarterly	SON, NAFDAC
Proportion of wheat/maize flour brand fortified with vitamin A to standard distributed in the country	Numerator: # of wheat/maize flour brands fortified with Vitamin a to standard Denominator: # of wheat brands distributed in the country	NAFDAC inspection of compliance to mandatory legislation	NAFDAC report	Quarterly	NAFDAC	Quarterly	NAFDAC
Proportion of sugar brand fortified with Vitamin A to	Numerator: # of sugar brands fortified with Vitamin a to standard Denominator: # of sugar	NAFDAC inspection of compliance to mandatory	NAFDAC report	Quarterly	NAFDAC	Quarterly	NAFDAC

standard distributed in the country	brands distributed in the country	legislation					
Proportion of vegetable oil brand fortified with Vitamin A to standard distributed in the country	Numerator: # of Vegetable oil brands fortified with Vitamin a to standard Denominator: # of vegetable oil brands distributed in the country	NAFDAC inspection of compliance to mandatory legislation	NAFDAC report	Quarterly	NAFDAC	Quarterly	NAFDAC
Proportion of wheat .maize flour brand fortified with Iron to standard distributed in the country	Numerator: # of wheat/maize flour brands fortified with Iron to standard Denominator: # of wheat brands distributed in the country	NAFDAC inspection of compliance to mandatory legislation	NAFDAC report	Quarterly	NAFDAC	Quarterly	NAFDAC
Proportion of salt brand fortified with iodine to standard distributed in the country	Numerator: # of salt brands fortified with iodine to standard Denominator: # of salt brands distributed in the country	NAFDAC inspection of compliance to mandatory legislation	NAFDAC report	Quarterly	NAFDAC	Quarterly	NAFDAC
Quality assurance of premix	1.The factory always has enough supply of vitamin A and Iron pre-mix for two months of	1.Maintain logs of issuance and daily inventory 2 Inspection of	1. Daily inventory	1. Daily	1. Store Keeper and QC/QA Department 2. Store Keeper	Quarterly	NAFDAC, SON

	production 2. Premix meets SON standards 3. Premix is stored under suitable conditions and is used on the "first-in, first-out" basis.		premix upon arrival for the following: Certificate of Analysis corresponds to the lot number of the premix delivered 3. Maintain logs of daily inventory	2. Delivery notes and invoice 3. Daily inventory	2. At each importation 3. Daily	and QC/QA Department 3. Store Keeper and QC/QA Department		
Quality assurance of fortification process	2.1 Vitamin A and mineral pre-mix is properly added to the unfortified flour and in the correct proportion 2.2 Dosifier is working properly and amount of premix discharged is in accordance to the flow of flour		2.1 Perform feeder verification and note results in log 2.2 Calculate the ratio of flour produced to fortification mix used	2.1 Production report/log 2.2 Production report/log	2.1 Once per shift 2.2 Once per shift	2.1 Production Manager and QC/QA Department 2.2 Production Manager and QC/QA Department	Quarterly	NAFDAC

Quality assurance of Vitamin A and Iron fortificants	3.1 Spot density in flour samples for iron is comparable to flour standards containing the expected factory minimum, average and maximum iron levels. 3.2 Iron and vitamin A levels comply with factory standards	3.3.1a Shift composite samples are taken from the packaging line. 200g samples are taken every 30 minutes. 8 consecutive samples constitute one shift composite sample. 3.1b Use the iron spot test on the shift composite sample. 3.2 Random sample of two daily-composite samples are taken and added to monthly composite samples and analysed for quantitative	3.1a Shift report. 3.1b Shift report 3.2 Monthly shift report	3.1a Two composite samples per 8 hour shift. 3.1b Once per shift 3.2 At least once per month	3.1 QC/QA Department	Quarterly	NAFDAC
--	---	---	--	---	----------------------	-----------	--------

			determination of iron and vitamin A using i-Check.						
Quality control of fortified wheat, sugar and oil	1.1 The factory always has enough supply of fortificant for at least three months of production 1.2 Fortificant meets SON standards 1.3 Fortificant is stored under suitable conditions and is used on the "first-in, first-out" basis. 1.4 Vitamin A content in fortificant is in line with SON standards.		1.1 logs of issuance and daily inventory 1.2 Certificate of Analysis corresponds to the lot number of the fortificant delivered 2.3 logs of daily inventory 1.4 Two 30g samples are taken randomly from containers and analysed using i-Check, Industry, SON, NAFDAC	1.1 Daily report 1.2 Confirmation certificate 1.3 Bin Card 1.4 Delivery note/documents COA, NAFDAC ,SON	Daily Monthly 1.3 Daily 1.3 Monthly	1.1 Store Keeper and QC/QA Department 1.2 Store Keeper and QC/QA Department Store keeper 1.3 Store Keeper and QC/QA Department 1.4 QC/QA Department	Quarterly Quarterly	NAFDAC, SON NAFDAC, SON NAFDAC, SON NAFDAC, SON NAFDAC, SON	

Quality control of fortified salt	2.1 The factory always has enough supply of potassium iodate (KIO ₃) for at least three months of production	1.1 logs of issuance and daily inventory	1.1 Daily report	Daily	1.1 Store Keeper and QC/QA Department	Quarterly	NAFDAC, SON
	2.2 potassium iodate (KIO ₃) meets SON standards	1.2 Certificate of Analysis corresponds to the lot number of the fortificant delivered	1.2 Confirmation certificate	Monthly	1.2 Store Keeper and QC/QA Department		NAFDAC, SON
	2.3 potassium iodate (KIO ₃) is stored under suitable conditions and is used on the "first-in, first-out" basis.	2.3 logs of daily inventory	1.3 Bin Card	1.3 Daily	1.3 Store Keeper and QC/QA Department		NAFDAC, SON
	2.4 Iodine content in fortificant is in line with SON standards.	1.4 Two 30g samples are taken randomly from containers and analysed using i-Check	1.4 Delivery note/documents COA	1.3 Monthly	1.4 QC/QA Department		NAFDAC, SON

	2.3 Proportion of households purchasing fortified sugar regularly								
	2.4 Proportion of households purchasing fortified salt regularly								
	2.5 Proportion of targeted households in which fortified oil/fat is present	Numerator: # of households where fortified oil/wheat/sugar/salt is present Denominator: Total number of households in catchment area Unit of measurement: percentage	Household Surveys	Household Survey report	Five Yearly	FMoH	Five Yearly	NFA	
	2.6 Proportion of targeted households in which fortified maize flour is present								
	2.7 Proportion of targeted households in which fortified sugar is present								
	2.8 Proportion of households in								

	which fortified salt is present											
Result 3: Improved awareness and access/utilization of the population of fortification intervention												
Access or utilization of fortified foods	3.1 Proportion of household members consuming fortified oil/fat regularly	Numerator: # of households members consuming fortified oil/wheat/sugar/salt Denominator: Total number of household members in catchment area Unit of measurement: percentage	Household Survey, NDHS, MICS, NBS, FMOE	Survey report	Five yearly	FMoH	Five yearly	NFA				
	3.2 Proportion of household members consuming fortified wheat/maize flour regularly											
	3.3 Proportion of household members consuming fortified sugar regularly											
	3.4 Proportion of households members consuming fortified salt											

	regularly								
Communication and research conducted	3.5 # of food fortification messages developed and disseminated 3.6 # of TV spots aired on fortified food by type 3.7 # of radio messages aired fortified food by type 3.8 # of posters developed and distributed on fortified food by type 3.9 # of formative research conducted on food fortification	TV Documentary, printing or production of hand bills, consumer safety clubs, Bulletin, sensitisation programmes, impact Assessment reports Industry adverts Export Consultative Committee	Report of events	Distribution list, message log, research report	Monthly/Yearly	NFA, NAFDAC, FMOH NAFDAC, FMOH NAFDAC, FMOH NAFDAC, FMOH Agric, science & Technology, Research institutions, NIFST, FMOH	Monthly/Yearly		NFA
Result 4: Improved micronutrients status in the population									

Micro Nutrient status of population	4.1 Proportion of children age 6-59 months consuming vitamin A rich foods in the past 24 hours	Numerator: Total number of children age 6-59 months consuming vitamin A rich foods in the past 24hours Denominator: Total number of children age 6-59 months in catchment area Unit of measurement: percentage	Household Survey, NDHS, MICS	Survey report	Five Yearly	FMoH	Five Yearly	NFA
	4.2 Proportion of children age 6-59 months consuming iron-rich foods in the past 24 hours	Numerator: Total number of children age 6-59 months consuming vitamin A rich foods in the past 24hours Denominator: Total number of children age 6-59 months in catchment area Unit of measurement: percentage	Household Survey	Survey report	Five Yearly	FMoH	Five Yearly	NFA
	4.3 Proportion of population consuming vitamin A/ iron/ Iodine rich	Numerator: Total number of population consuming vitamin A/ Iron/Iodine rich	Household Survey	Survey report	Five Yearly	FMoH	Five Yearly	NFA

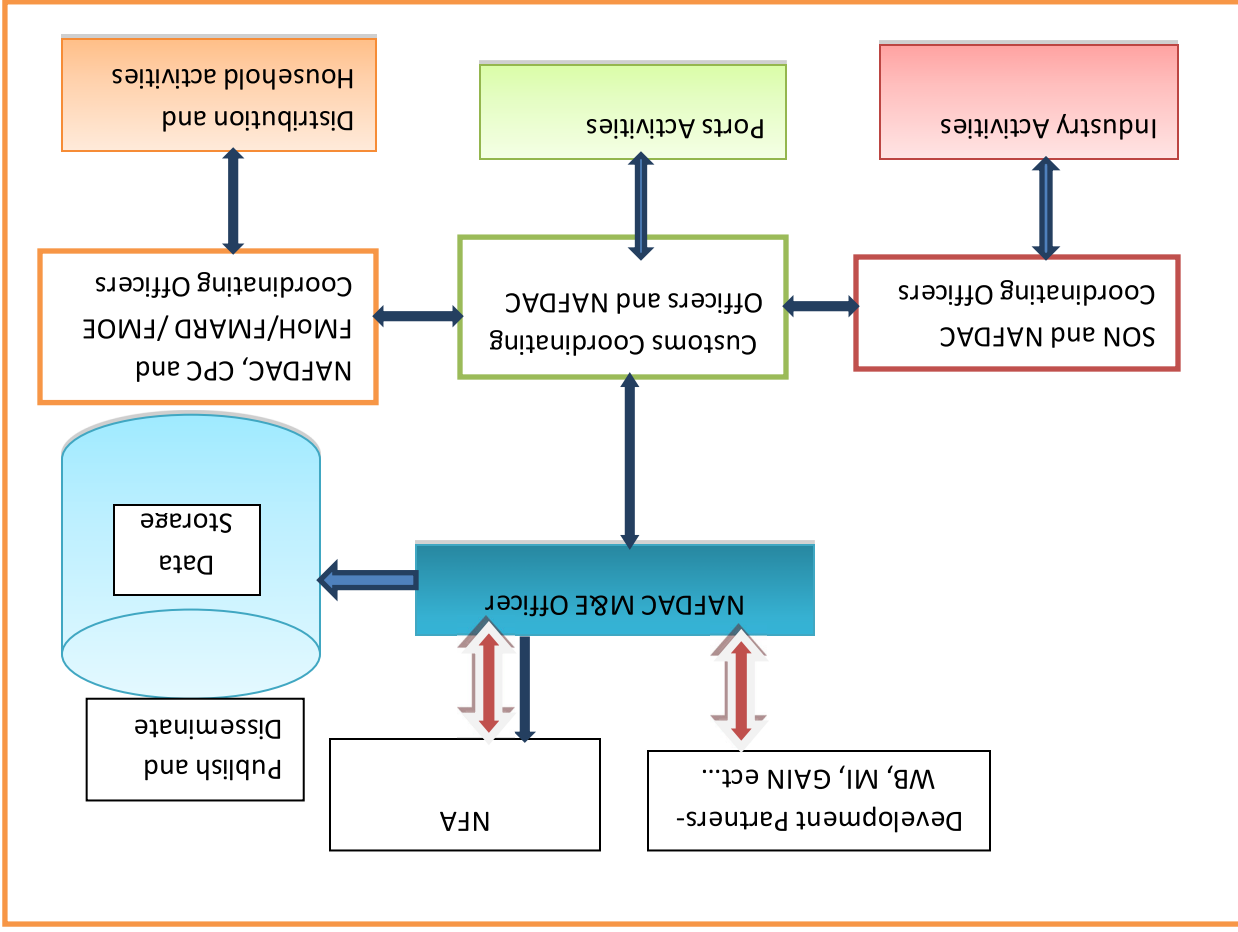
	foods in the past 24 hours	foods in the past 24hours Denominator: Total population in catchment area Unit of measurement: percentage							
--	----------------------------	---	--	--	--	--	--	--	--

Chapter Five Data Management plan

5.1 Data collation and Reporting plan

The National Fortification Alliance (NFA) will collect data routinely as well as on quarterly basis as indicated in the performance monitoring plan matrix detailed above. Data will be collected using the appropriate data collection tools provided by the coordinating offices of each of the different programmes anchored by each stakeholder. The coordinating officer will be trained on the data collection tools which will be piloted by the responsible M&E officers in NFA to ensure the reliability of the data collection instruments as well as to ensure the ability of the coordinating officers to coordinate and identify the source documents for each of the indicators as specified. Data will be collected and verified quarterly by all partners and stakeholders using the appropriate tools provided by NAFDAC. The data will be submitted to NAFDAC M&E Officer who will check for accuracy and collate using the summary sheet provided.

5.2 Data Flow Chart



Once the data have been verified by the NAFDAC M&E officer, the summary sheets will be submitted to the Partners/NFA and also stored in the database as well as published if necessary. Collected data must reach the NAFDAC M&E Officer by the 10th day of the next reporting month. The NAFDAC M&E officer will analyze the data and provide feedback to the coordinating officers of all Partners and stakeholders by the 15th day of the next month.

5.3 Data storage

All records and data pertaining to food fortification programmes must be stored in a fire and water proof safe where the data can also be easily retrieved as at when needed. Hard copies of data reported must be printed and filed away appropriately through the life of the projects and at least 5 years after the expiration of the projects. Additionally, for electronic data, backup systems must be in place to prevent data loss. Back up must be done bi-monthly and stored in a place other than where the original data resides. Relevant data will be published and disseminated as appropriate. NFA Secretariat should be responsible for publication.

5.4 Data quality Assessments

The data quality will be assured at various levels of data collection and collation. From the activity points, Coordinating programme and M&E officers will endeavour to check the sources of data for completeness and accuracy of the data before the data are collected. Errors and inconsistencies identified in the data will be brought to the attention of the officers in charge and correction will be made. The essence of monitoring visits will be anchored on garnering support for the various fortification projects through advocacy visits to Industries and concerned stakeholders who are crucial to the success of the fortification programmes. The supervision will also ensure monitoring of the progress of the programmes and that tasks are performed accordingly and quality of data is assured. So also data quality assessment exercise will be conducted annually to assure the fitness of the data collected for decision making. The data quality assessment will include on-site data verification to Industries where food vehicles are fortified and distribution sites where fortified foods are sold.

5.5 M&E coordination meetings

NAFDAC M&E Officer and other program staff as part of the M&E practice will schedule regular M&E meeting with the coordinating program officers on a quarterly basis. The goal of the meeting is to review the progress of the work plan and discuss the achievements till date. Prior to the meeting, the M&E Officer will analyze the data in relation to the performance indicators outlined in the M&E performance matrix above. The meeting will also serve to identify the challenges in the field hindering program performance so the issues can be addressed. The platform of the meeting will also allow for sharing of lessons

learnt and opportunity for mentoring programme staff for improved and continuous learning.

Chapter Six

Evaluation Plan

6.1 Research and Evaluation

In order to evaluate the outcome and impact level results of food fortification in Nigeria the periodic formative research will be conducted. However, some of the researches would be integrated into existing National surveys such as MICS, NARHS, NMIS, NDHS, SMART survey and others.

6.2 Data use and dissemination

Data reported on food fortification activities will be analyzed internally and used to manage the project and re-strategize where and when necessary in addition to the external analysis by regulators. Reports will be produced quarterly, annually and shared with Partners and Stakeholders periodically. In addition to these, Information obtained will be shared periodically at specialized meeting organized by NFA for concerned stakeholders. The essence of this is to share the achievements, challenges and opportunities which have arisen as a result of project implementation of food fortification in Nigeria. The data will also be used for advocacy to government and private donors to leverage continuous support for food fortification program in the country. One key outcome of the food fortification project in Nigeria is to improve the health of the population, especially children under five and women. Through the M&E reports of food fortification, the project will share the processes, best practices and lessons learned for continuous improvement of the processes by all stakeholders. In addition, NFA Secretariat will ensure Data access and wide dissemination of food fortification information by hosting an open access document that can be accessed by consumers, development Partners and other users.

Chapter seven

National Food Fortification Project Targets 2014-2016

	Goal	Indicator	Baseline Year	Baseline Value	Targets		Project Overall target	Data Source	Frequency	Responsible persons	Target Assumptions
	Improved health status of Nigerians, particularly women and children	1.Prevalence of vitamin A deficiency in children age 6 – 59 months	2014	TBD	TBD	TBD	TBD		TBD	FMoH/NBS	Conducive civil and political environment in the country for people to fend for themselves.
		2.Prevalence of anaemia in children age 6 – 59 months									
		3. Prevalence of anaemia in women age 15 – 49 years									
		4. Prevalence of IDD in children age 6 – 59 months									
		5. Prevalence of IDD in women age 15 – 49 years									
	Result 1	Indicator	Baseline Year	Baseline Value	Targets		Project Overall	Data Source	Frequency	Responsible persons	Target Assumptions
	Ensured intervention was functioning adequately at the factory, import and distribution levels	1.1.Quantity of fortified food produced, within the country	2014	TBD	TBD	TBD	TBD	NAFDAC, SON, Industries	TBD		
		1.2.Quantity of fortified food imported into the country									

		1.3. Quantity of fortified food distributed within the country	2014	TBD	TBD	TBD	TBD	TBD	NCS NAFDAC Industries	TBD			
		1.4.# Copies of food fortification standards developed, endorsed and disseminated	2014	TBD	TBD	TBD	TBD	TBD	SON	TBD			
		1.5.Proportion of wheat/maize Industries fortifying all their products or brands according to National standards	2014	TBD	TBD	TBD	TBD	TBD	NAFDAC SON	TBD			
		1.6.Proportion of Sugar Industries fortifying all their products or brands according to National standards	2014	TBD	TBD	TBD	TBD	TBD	NAFDAC SON	TBD			
		1.7.Proportion of Vegetable oil Industries fortifying all their products or brands according to National standards	2014	TBD	TBD	TBD	TBD	TBD	NAFDAC SON	TBD			
		1.8.Proportion of Salt Industries fortifying all their products or brands according to National standards	2014	TBD	TBD	TBD	TBD	TBD	NAFDAC SON	TBD			
		1.9.Proportion of wheat/maize flour brand fortified with vitamin A to national	2014	TBD	TBD	TBD	TBD	TBD	NCS NAFDAC	TBD			

[illegible]

[illegible]

[illegible]

		1.30.Proportion of Industries applying HACCP							NAFDAC			
	Result 2	Indicator	Baseline Year	Baseline Value	Targets		Project Overall	Data Source	Frequency	Responsible persons	Target Assumptions	
Improved availability, affordability and acceptability of fortified food vehicles to the population		2.1 Proportion of households purchasing fortified oil regularly	2014	TBD	TBD	TBD	TBD	NBS				
		2.2 Proportion of households purchasing fortified wheat flour regularly										
		2.3 Proportion of households purchasing fortified sugar regularly										
		2.4 Proportion of households purchasing fortified salt regularly										
		2. 5Proportion of targeted households in which fortified oil/fat is present	2014	TBD	TBD	TBD	TBD					
		2.6 Proportion of targeted households in										

Bibliography

1. <http://www.onlinenigeria.com/geography.asp>. January 2014
2. Nigeria National Population commission. Population census 2006.
3. Federal Republic of Nigeria Official Gazette (2009). Legal Notice on Publication of 2006 Census Final Results. Official Gazette of the Federal Republic of Nigeria, 96, No 2.
4. Others to be listed