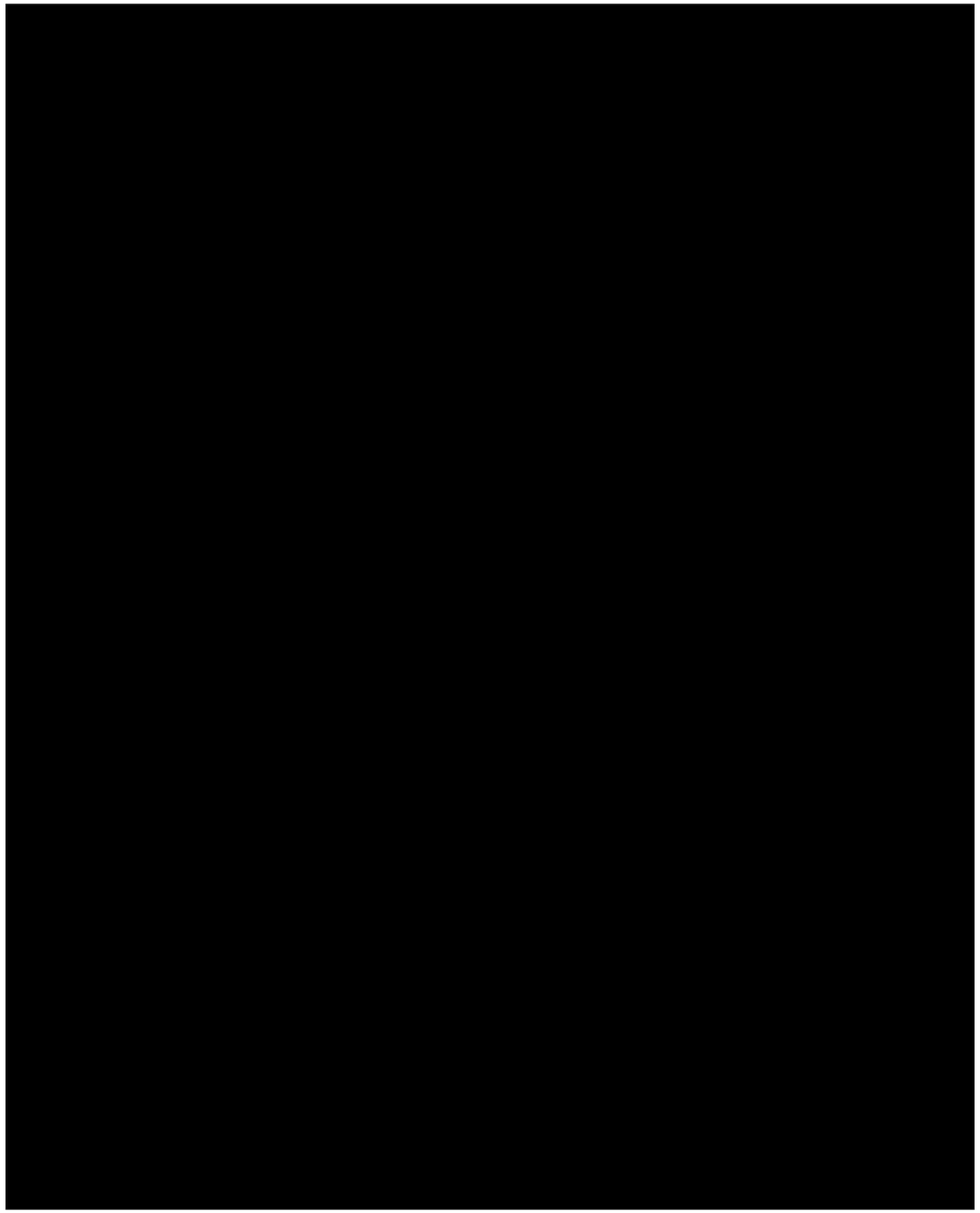
Somalia National Food Fortification Strategic Plan

2019 – 2024

Food fortification is the best approach to tackle 'hidden hunger', Copenhagen consensus 2008

Insert picture of a Somali lady preparing food



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Abbreviations and Acronymns

CBO	Community Based Organizations
CHD	Child Health Days
FSNAU	Food Security and Nutrition Analysis Unit
FAO	Food and Agriculture Organization
HMIS	Health Management Information System
ISO	International Standards of Operations
KAP	Knowledge Attitudes and Practices
MDC	Micronutrient Deficiency Control
MND	Micronutrient Deficiency
MNPs	Micronutrient Powders
MSP	Multi Sectoral Platform
NDP	National Development Plan
NFFA	National Food Fortification Alliance
NGO	Non-Governmental Organizations
NPHL	National Public Health Laboratories
PLW	Pregnant and Lactating Women
QAQC	Quality Assurance and Quality Control
SES	Socio Economic status
SOPS	Standard Operating Procedures
SWOT	Strengths, Weaknesses, Opportunities and Threats
UN	United Nations
UNICEF	United Nations Children's Fund
VAD	Vitamin A Deficiency
WHO	World Health Organizations
WRA	Women of Reproductive Age
WFP	World Food Program

Excecutive Summary

Food fortification as a key nutritional intervention is largely underutilized in most developing countries despite its potential in combating micronutrient deficiencies mainly caused by dietary deficiency of vitamins and minerals. This gap continues to remain an insidious public health problem in many countries, threatening physical and economic welfare of families. More than 2 billion people in the world today suffer from MND. Although all population groups in all regions of the world may be affected, the most widespread and severe problems are usually found amongst resource poor, food insecure and vulnerable households in developing countries. The key factors contributing to poor uptake of fortification are: less food processing industries which have limited capacity to fortify products, lack of policies, regulation and legislation to spearhead the fortification process, reluctant political leadership to source for best practices and resources in such areas, limited human resource due to poverty and high levels of illiteracy and lack of funding to finance food fortification. For countries like Somalia, persistent civil war, cultural beliefs and barriers elongate the list. Micronutrient malnutrition has long-ranging effects on health, learning ability and productivity, hence a major impediment to socio-economic development. Health consequences suffered during this period due to a certain deficiency are irreversible even if good nutrition is provided later in life. This therefore creates a vicious cycle of under-development and especially to the already underprivileged groups. Globally, the main micronutrients of public health concern are iodine, iron, and vitamin A. WHO recommends several strategies for improving dietary intakes of micronutrients: breastfeeding, diet diversification, food fortification, supplementation including nutrition education and observance of public health measures to treat and control diseases. The micronutrient status of a given population is therefore dependent on the food security and nutrition conditions in that country.

In Somalia, the food security and nutrition status of majority of the population has remained as Critical or Stressed over the years. The economic livelihood of the Somalia population is largely comprised of pastoralists with majority of the population keeping goats, camels and a few sheep. Other livelihoods are agro-pastoralist which is a mix of agriculture and livestock production and agriculturalists mainly found around the riverine regions. Agriculture is primarily rain-fed, making this livelihood extremely vulnerable to climatic hazards. Livestock prices are often stable, although they can increase due to factors like improved livestock body conditions, reduced supply and increased demand for local consumption. Cultivated crops include cereals - sorghum and maize - with very little legumes, pulses, fruits and vegetables. The main diet for majority of the urban population comprise of rice and pasta, while in the rural areas, sorghum and maize constitute the main diet. The foods consumed both in the rural and urban areas are good fortification vehicles X. Lack of enabling basic structures together with other underlying constraints justifies the need for a food fortification strategy. The development of Somalia National Food Fortification Strategic Plan for 2019-2024 involved a desk review of background documentation on food security, health and nutrition and consultations with key stakeholders involved in nutrition programs in Somalia.

This document contains the goal of the Strategy including Strategic Objectives, priority micronutrient interventions that will be implemented in the next 5 years (2019-2024); and Strategic Areas of focus during the lifespan of the Strategy.

The goal of this Strategic Plan is therefore to: **"To improve nutritional status of people in Somalia, by combating micronutrient deficiencies through national food fortification for accelerated socio-economic development."**

Strategic objectives that will contribute to the attainment of the goal are:

1. *To create a favorable environment for food fortification by establishing policies and legislation to govern operations in food fortification.*
2. *To ensure adequate production, fortification and packaging by relevant commercial food industries in accordance to the Somali/East African regulations and provide vitamins and minerals for the segments of the rural population that use locally produced unprocessed food.*

3 *To ensure compliance to standards and regulations at industry and commercial levels.*

4 *To scale up consumer awareness and behavior change, ensure surveillance of food consumption and enhance production of high quality fortified food.*

i. The expected outcomes for this strategy will be:
ii. Development and adoption of food fortification policies, implementation and reinforcement of the policies by the government at the industry and market level.
iii. Commitment by the Somalia government to food fortification through formation of committees and increased stakeholder engagement.
iv. Support scale up of other nutrition policies and legal frameworks that advocate for food fortification.
v. Incorporation of food fortification in Government agenda and planning
vi. Sustainable production of fortified food; mainly through Public Private Partnership (PPP).
vii. Support milling and fortification industries.
viii. Fortification integrated into existing industries
ix. Identification of the right food fortification vehicle and respective fortificants.
x. Identification and engagement of qualified food processing industries.
xi. .
xii. Well-trained and performing staff who produce high quality fortified food that comply to recommended standards.
xiii. Development of food fortification handbook.
xiv. Establishment of bureau of standards body and quality assurance and control procedures.
xv. Compliance to set regulations by industries to ensure food safety.
xvi. Establishment of internal Quality Assurance and Control practices in industries.
xvii. Increase in consumption of fortified food across the country.
xviii. Embrace and ownership of fortification program by consumers.
xix. Regular assessment and surveillance on consumption of fortified food.
xx. Timely and accurate analysis of consumption patterns of fortified food.
xxi. Continuous research on areas that need improvement.
xxii. Regular improvement of quality in fortified food.

Awareness about the benefits of consumption of fortified foods to the general population through social marketing is created.

a) In order to achieve the goal and objectives of the strategy and effectively implement the program, the following four strategic areas are proposed as priority areas in the next five years:
b) Policy, governance and operations
c) Food processing, fortification and supplementation
d) Production regulation and staff capacity building

Consumer awareness and behavior change, consumption monitoring and quality enhancement

This Strategic Plan has a 5-year lifespan. In order to ensure continued relevance and usefulness, and to keep the stakeholders focused, a Mid-Term Review (at mid of 2nd year of implementation) and End-Term Review are recommended following a systematic process. The Strategy provides a framework for action to implement the commitments of the national government and partners whose plans and strategies will provide further technical guidance on programme implementation.

1 INTRODUCTION

1.1

The fight against food insecurity and malnutrition in Somalia has many development actors, among them Scaling Up Nutrition (SUN) movement. The aim is to end all forms of malnutrition by 2030. The country is spearheading efforts to make the 2030 vision a reality, by and has joined the global community to achieve Sustainable Development Goals (SDGs) and the World Health Assembly (WHA) targets for maternal, infant and young child nutrition by 2025.

Inadequate intake of micronutrient results in deficiencies which translate to cyclic episodes of poor health and undernutrition; and in turn human under-productivity. Micronutrient malnutrition has long-ranging effects on health, learning ability and productivity hence a major impediment to socio-economic development[1]. Most people in Somalia are facing multi-nutrient deficiencies; especially micronutrient deficiencies, a global public health concern with the likelihood of crippling human resource development in the country. Prolonged micronutrient deficiencies have adverse damaging effects such as increased risk of morbidity and mortality, impaired growth and poor cognitive development, increased susceptibility to infection and reduced productivity. Therefore, tackling micronutrient deficiencies is a crucial step towards achieving the aims of the Sustainable Development Goals of eradicating all forms of malnutrition, including micronutrient deficiency and achieving Somalia National Development Plan priority nine objective which aims to improve health outcomes such as reduced maternal and child mortality and reduced rate of malnutrition.

Somalia has faced the challenge of political instability for more than 20 years caused by civil war, conflict between clans and militias. This dire situation severely affects the livelihoods of the people in Somali through collapse of most systems. These include decreased agricultural productivity, damage of roads and bridges and failed food storage systems. Lack of national planning policy led to an increase in market inflation, diminished farming and limited access to markets resulting in limited supply of and access to food. This extended for a long period leading to severe food insecurity, undernutrition and micronutrient deficiencies. Currently, an estimated 2.6 million people across Somalia remain internally displaced.

In addition, most of the displaced people depend on external food aid which distorts the market dynamics. The humanitarian situation in Somalia remains fragile as evidenced by the national global acute malnutrition estimate varying between 12 to 19 per cent in the past 5 years (FSNAU 2018). Although nationally there has been progressive improvement in malnutrition (annual rate of reduction of 0.8 per cent between 2011 and 2015), the situation remains critical and unstable (FSNAU 2018).

However, all is not lost for Somalia, since 2012 the government has given hope to the people. While food fortification was not a government priority in 2012, the current government has put more focus on improving nutrition through food fortification and other interventions. The government has four roadmaps, the Social sector road map prioritizes nutrition and one of its milestones is food fortification. Scaling Up Nutrition (SUN) is spearheading the food fortification program hence helping the government achieve its agenda of improving nutritional status of the Somali people.

The 2008 Copenhagen Consensus ranks food fortification as one of the best approaches to tackle 'hidden hunger'. The Somalia National Micronutrient Study 2009 recommended the fortification of school meals with iron and other micronutrients, as well as the fortification of cereals distributed in general food distributions. Furthermore, the 2016 Somalia Infant and Young Child Nutrition Assessment recommended scaling up of home fortification with micronutrient powders to increase iron intake among children aged 6-23 months.

Currently, there is neither legislation nor food safety and quality regulation standards in place in Somalia to govern production, importation and marketing of fortified foods. This illustrates the need for introduction of fortification standards for both imported and locally produced foods. SUN, through existing strategies like the Social Mobilization Advocacy and Communication Strategy (SMAC 2019-2021), has so far established the Multi-sectoral Platform (MSP) that has brought together government ministries namely Agriculture, Livestock, Education, Planning, Commerce, Water resources, Gender and Human Rights, Health, Humanitarian and Disaster Management, Information, Finance, Fisheries and independent government institutions like Somali

1 Somali national micronutrient deficiency control strategy 2014 – 2016

National University (NSU), Commission for Refugees and IDPs, Directorate of Environment and the Office of the Prime Minister**.** The platform provides a good opportunity for the collaboration of sectors like SUN, commerce, planning, agriculture and finance to play their role in the food fortification strategy development and implementation. Once the strategy is implemented, it will result in establishment of regulatory bodies like bureau of standards to oversee local food production, safety and fortification, formulation of policies to govern ports authorities on import of good quality and fortified food, and formation of the National Food Fortification Alliance to which will bring together all food fortification stakeholders to drive the whole strategy. Furthermore, SMAC (2019-2021), can be incorporated in terms of inter-sectoral communication, promotion of the food fortification strategy to attract more support, also as a monitoring and evaluation framework for food fortification and common results framework (CRF) for nutrition-related programs in Somalia other sectors. SUN has also networked with UN, Donor, Civil Society, Business and Academia; this is yet another powerful tool whereby food fortification strategy can be implemented by integrating it into existing institutions and programs.

The two national development pillar working groups - Social Human Development Pillar (Health, WASH, Nutrition, Education and Youth) and Resilience Pillar (Environment, Social Protection, Food Security and Nutrition) have both included nutrition in their clusters, which demonstrates strong support and focus on nutrition. These groups provide an opportunity to strengthen food fortification strategies by integrating the strategic interventions into existing agenda. Positive progress in discussions has been noted so far concerning matters of food fortification in Somalia with the monthly technical consultative meetings by SUN through the MSP and quarterly meetings by the nutrition cluster with the networks. There has also been strong support from the office of the Prime Minister and WFP in the development of the Food Fortification Plan.

Even though food fortification is a new phenomenon in Somalia, production of cereals, which are good vehicles for micronutrient fortification has improved. The decrease in cereal production has been so dramatic over the past three decades that recent (pre-drought) food aid and food imports now exceed domestic production of grains. Before the recent drought, production levels were 60 percent below their peak 1989 level. Before the civil war, annual average cereal production was about 500,000 tonnes (1980–90), peaking in 1989 at 654,000 tonnes. The long-term postwar (1995–2006) annual average amounted to about 265,000 tonnes. Over the past decade (2007–2015), production of cereals remained unchanged, with high intra-annual variations as a result of erratic rainfall, dry spells, recurrent floods, pests and diseases. Maize production dropped by 63 percent in 1995–2015 to an average of about 120,000 tonnes. In more recent pre-drought years (2010–2015), average maize production decreased to about 110,000 tonnes, falling to 63,251 tonnes in 2016 as a result of below-average rains. In 1988–1990, sorghum production averaged 275,000 tonnes, peaking at 330,000 tonnes in 1989. During 2010–2015, annual production was only 110,000 tonnes, 60 percent less than in the late 1980s. It fell to 78,801 tonnes in 2016[2]. In recognition of these difficulties and the need to improve nutritional status of people in Somalia, it is inevitable that food fortification is one of the key strategies to be developed further. Therefore, this National Food Fortification Strategy (NFFS) aims to provide strategic direction and a framework for countrywide food fortification efforts.

The strategic location of the country and the entrepreneurial mindset of the Somali people could lead to more investment in farming activities and food processing industries which can be directly involved in food fortification programme. In addition, there has been development in telecommunications sector, such as Puntland, South central and Somaliland TV and radio stations, that has increased communication, sharing of information and exchange on variety of issues This can work well in advocacy for behavior change on consumption of fortified food. Availability of commercial banks and mobile telephones has enhanced money transfer and availability of loans for entrepreneurs interested in food processing and fortification (MOA strategic plan 2016-2020).

2 SOMALIA: Rebuilding Resilient and Sustainable Agriculture UN FAO 2018

2 BACKGROUND

2.1 Rationale for the National Food Fortification Strategy

Malnutrition in Somalia is multi-faceted affecting mothers, infants, young children, adolescent girls and women. It hinders inclusive development and overall prosperity of a nation and constitutes violation of basic children's rights to survival and development and as the highest attainable standard of health.

Malnutrition coupled with food insecurity, the presence of diseases like malaria, diarrhea, intestinal parasites, infections and other compounding factors such as poverty and illiteracy, the prevalence of cultural beliefs and barriers that hinder consumption of certain foods, and the limited awareness of the importance of consuming micronutrient rich-foods, are all contributing factors to multiple and concurrent micronutrient deficiencies.

According to the 2016 Somali Infant and Young Child Nutrition Assessment, the most common foods given to children aged 6-23 months are grains, roots and tubers (93.5%), dairy products (75.2%), vitamin A rich fruits and vegetables (52.8%), and meat- based foods (41.4%). The use of MNPs in children diets is not common with just 0.1% of children 6-23 months receiving MNPs the day and night preceding the day of the survey. Iron fortified foods are only consumed by 7.2% of children in the country, yet among children 6-59 months, prevalence of anaemia (<11g/dl) is as high as 68.7% while severe anaemia (<7g/dl) is 5.3% in South Central Somalia. Overall anaemia (<11g/dl) is 59.3% with moderate anaemia (9.9-7.0 g.dl) being the most common at 32.7% (National Anthropometric and Micronutrient Nutrition Survey, Somalia 2009).

Food fortification is an efficient and cost-effective strategy to prevent and manage MND, as it allows high population coverage. Fortification can lower the risks of MNDs in situations where existing food supplies and limited access fail to provide adequate levels of certain nutrients in the diet. The deliberate addition of essential micronutrients to staple foods during processing improves the quality of food supplies and provides nutritional benefits to the public with minimal risks to health. Furthermore, it does not require a change in eating habits; neither does it create an extra cost for industries. For those reasons, the Somalia National Micronutrient Deficiency Control Strategy (2014 – 2016) prioritized both home-based and commercial food fortification as the key intervention to addressing high levels of MND in Somalia.

Findings of the 2009 micronutrient survey conducted by UNICEF/FSNAU/Ministry of Health (MOH) indicate that there were high levels of micronutrient deficiencies among pregnant and lactating women and children <5 years. Iron deficiency among women of child bearing age was 41.5%, among children <5 years it was 59.3%, but significantly higher rates (73.7%) were observed among children <2 years. Similarly Vitamin A deficiency among children <5 years was 33.3%which is above the 20%WHO cut-off. Household utilization of iodized salt was 3.9%. The National Micronutrient Survey in 2009 reported median excessive urinary iodine concentrations of 325.1 µg/L among non-pregnant women and 417.1 µg/L among pre-school aged children in Somalia (normal range is 100–199 µg/l). Since the 2009 survey, some programmes have been put in place to combat micronutrient deficiencies in Somalia. However, coverage of Vitamin A for twice yearly supplementation has been less than 80% for all children aged 6-59 months. Coverage for Iron Folate and multiple micronutrient supplementations for women has also been poor (both less than 30% according to recent surveys).[3]

The survey recommended:

1. Fortification of school meals with iron and other micronutrients
2. Fortification of cereals distributed during general food distribution.
3. Targeted interventions such as home fortification programmes using micronutrient powders (MNPs)
4. Distribution of lipid based nutrient supplements.
5. Analysee specific types of local and imported fortified and un-fortified cereals consumed by the population in order to determine where fortification would be most effective.

3 UNICEF Somalia Nutrition Strategy 2018-2020

The 2016 Somalia Infant and Young Child Nutrition Assessment recommended:

1. The development of a home fortification strategy with micronutrient powders to increase iron intake among children aged 6-23 months and a scale up plan.
2. Procurement and distribution of MNPs or lipid based nutrient supplements to increase the intake of dietary irons and other micronutrients.

Notably, there is no commercial or industrial fortification of commonly consumed foods in the country. This is mainly due to lack of appropriate infrastructure to carry out fortification, that is, there are no large-scale food industries with the capacity to fortify these foods, no standards on how much of fortification to add, no quality control agency to enforce the standards and check for compliance.

There is only one company milling wheat in Somalia, with no fortification done, and no commercial milling industry for maize and rice. Small-scale manufacturing industries are emerging which include fish-canning and meat-processing plants in Burao area, as well as about 25 factories in Mogadishu area, which manufacture pasta, mineral water, confections[4]. There is also food production and processing in the Shabelle Valley and Banadir region. In the past few years, major agriculture products included banana, sugar, tomato and rice production and processing (Somalia MOA 2016-2020).

In line with the Sustainable Development Goal 2 to 'end hunger, achieve food security and improved nutrition, and promote sustainable agriculture,' Somalia food security and nutrition context will need to be thematically structured towards improvement of food access and ultimate reduction of micronutrient deficiencies.

2.2 Situational Analysis

2.2.1 Levels of Malnutrition and Micronutrient Deficiencies

Results from 38 separate nutrition surveys conducted by FSNAU and partners in November and December 2018 indicated that the overall nutrition situation in Somalia had improved, in comparison to previous years, due to better food security conditions, reduced outbreak of disease, and sustained humanitarian interventions. At the national level, acute malnutrition remains stable due to relatively low morbidity and sustained nutrition and health related interventions and support. The median prevalence of Global Acute Malnutrition (GAM) has remained Serious (10–14.9%) over the past three seasons (12.6% in 2018 Deyr, 14.0% in 2018 Gu and 13.8% in 2017 Deyr). However, a high level of acute malnutrition persists across Somalia due to a combination of factors, including food insecurity, high morbidity, low immunization and Vitamin-A supplementation, and poor care practices. A Critical (=4-5.6%) prevalence of Severe Acute Malnutrition (SAM) was observed in Bakool Southern Inland Pastoral livelihood zone. The Crude Death Rate (CDR) was Critical (1 to <2/10 000/ day) in West Golis Pastoral and northwestern Hawd Pastoral, while morbidity rates remain high (>20%) in half of the populations surveyed.

The nutrition situation in Sorghum High Potential Agro-pastoral livelihood zone of Bay and Southern Agro-pastoral livelihood zone of Hiiran are expected to deteriorate from Serious to Critical from February to April 2019. Urgent treatment and nutrition support is required for an estimated 903,100 children under the age of 5 years (total acute malnutrition burden) who will likely face acute malnutrition through December 2019, including 138,200 who are likely to be severely malnourished. Integrated support interventions should be sustained to support recovery and prevent deterioration in the nutrition situation.

Twenty five percent of the population in Somalia is at risk of being zinc deficient[5]. Zinc deficiency impairs immune function and is associated with an increased risk of gastrointestinal infections. Neural tube defect, which is a sign of Folate deficiency, was also reported in 22 cases per 100,000 births[6].

2.2.2 Food Insecurity

The economic livelihood of the Somalia population is largely comprised of pastoralists with majority of the population keeping goats, camel and a few sheep. Other livelihoods are the agro-pastoralist -a mix of agriculture and livestock production and agriculturalists - that are mainly found around the river regions. Agriculture is primarily rain fed making this livelihood extremely vulnerable to climatic hazards. The livestock is mainly reared for commercial purposes with very little available for consumption especially in rural areas. Cultivated crops mainly include cereals - sorghum and maize - with very little legumes, pulses, fruits and vegetables. The main diet of majority population comprise of rice and pasta accompanied with tea.

According to UN FAO, Somalia is a chronic food crop deficient country. Local production provides an average of 22% of per capita cereal needs. Food imports mainly cereals and sugar bridge the deficit.

According to FSNAU report of February 2019, following the harsh Jilaal (January-March 2019) dry season, the long-range forecast indicated a greater likelihood of normal 2019 Gu (April-June) rainfall across Somalia, except in coastal areas of Shabelle and Juba regions, which were to experience a dry spell in May. As a result, pasture and water availability, crop cultivation, livestock production, access to agricultural employment, and water and food prices were expected to improve. However, food security was expected to deteriorate in parts of northern and central Somalia from February to June 2019. Many northern and central agro-pastoral and pastoral livelihoods were to deteriorate to Crisis (IPC Phase 3) until May/June, when the onset of Gu rainfall I would lead to improved livestock productivity, livestock births increasing saleable animals, and increased agricultural labour opportunities. In the absence of assistance, food security outcomes were expected to deteriorate to Emergency (IPC Phase 4) in Guban pastoral livelihood zone and to Crisis (IPC Phase 3) in central Addun pastoral, Northern Inland pastoral, East Golis pastoral of Sanaag, north western Hawd pastoral, southern agro-pastoral of Hiiran and Bay-Bakool Low Potential agro-pastoral livelihood zones.

Additionally, more than 1.5 million people were to face Crisis or Worse (IPC Phase 3 or higher) through June 2019. An additional 3.4 million people were classified as Stressed (IPC Phase 2), bringing the total number of people in Somalia that would face acute food insecurity through mid-2019 to 4.9 million. Humanitarian assistance was projected through June 2019 to prevent further deterioration. People categorised as Stressed or worse (IPC Phase 2 or higher) would require livelihood support.

2.2.3 Regulatory Environment for Food Fortification

The Somali Nutrition Strategy 2011-2013 mainly focuses on emergency nutrition measures and interventions. Even though increased availability of fortified food and improved access and utilization of fortified supplementary foods by the vulnerable groups is mentioned in the fourth outcome, it does not target the entire population and fails to address the underlying causes of malnutrition. Food fortification should be prioritized as the primary focus since it provides preventive measures of curbing malnutrition. Food security and nutrition surveillance and early warning reports (FSNAU, FEWSNET and WFP) are key organizations providing quality information and analysis for the targeting of appropriate and timely responses to changing needs in country.

Due to inadequate governance structures in parts of Somalia, nutrition response programming is mainly undertaken by UN, international and national NGOs with full support from the government. Government ministries are developing more policies and taking up the task of driving the national building agenda with the help of UN and other bodies, which have been at the centre stage. The current national polices and frameworks in Somalia do not address the issues of food safety and quality regulation standards to govern production, importation and marketing of fortified foods. In an effort to regulate the quality of imported food, a Turkish company was contracted by the Somalia government to issue pre-shipment verification of conformance to all imports including food commodities coming to Somalia. This has not worked optimally and should be relooked. However, the state of Somalia under the FGS has put in place a bureau of standards to develop food safety legislations, thereby facilitating the introduction of fortification of both imports and locally produced foods.

Other nutrition-related ministries like agriculture, commerce and planning do not have focused strategies to realize better nutrition outcomes for the people. For a nation like Somalia, where levels of malnutrition are alarming, policies and sectoral strategies like health sector strategic plan, strategic plan for ministry of agriculture need to be nutrition-sensitive to ensure collective prioritization of nutrition.

SUN has made good efforts to bring together all sectors - MSP and monthly consultative meetings are ongoing to ensure nutrition is scaled up in the country. The two pillars in the national working groups have focused on nutrition. However, this should be strengthened through alignment of sector plans to National Development Plan, addressing nutrition targets in NDP chapter, utilization of data from FSNAU seasonal assessments and partner

4 Somali National Micronutrient Strategy in 2013

5 Wessells and Brown 2012

6 Dimes statistics 2012

assessments including SMART surveys, KAP, SQUEAC in policy and planning, updating of cluster matrices and mappings, National Monitoring and Evaluation Framework to align nutrition and other targets and commitments by government leaders and development partners

Positive steps towards better nutrition in Somalia are recommended in the Somalia National micronutrient Strategy, the Capacity Development Framework, National Development Plan and the SUN Social Mobilization, Advocacy and Communication strategy which has the common results framework (CRF) for the country. SUN has identified the need for policies to support nutrition programming in the nutrition sector.

2.2.3 Local Production and Processing Industries

Local production of food in Somalia has been increasing over the years. 2018 Deyr season cereal production in southern Somalia is estimated at 76,600 tons, including 4,500 tonnes of off-season harvests expected in late February/early March, which is 22%lower than the long-term average for 1995-2017. In the northwest, the 2018 Gu/Karan cereal production harvested in November is estimated at 11,000 tonnes, which is 76% lower than the 2010-2017 average due to poor and erratic rainfall and high levels of pest incidence and bird attacks.

Sum of Deyr + Gu Totals Production in MT

	Column Labels											
	2016				2017				2018			
Row Labels	Cowpea	Ground-nuts	Maize	Sorghum	Cowpea	Groundnuts	Maize	Cowpea	Cowpea	Ground-nuts	Maize	Sorghum
Awdal	0		1,020	7,500	0		0	810	0		0	2,000
Bakool	125		103	1,192	240		163	2,192	68		146	1,657
Bay	3,485	1,130	5,663	18,592	2,079	892	4,426	45,098	4,030	2,280	9,510	35,505
Galgadud	375		0	90	2,610		0	423	1,400		0	53
Gedo	113		4,866	2,092	133		5,936	3,140	63		1,457	3,175
Hiraan	0		1,780	1,548	0		1,483	4,434	0		1,070	2,945
Juba Dhexe (Middle)	524		3,556	1,600	2,406		11,440	3,560	990		4,960	2,820
Juba Hoose (lower)	200		2,224	18	703		3,747	252	565		5,454	150
Mudug	100		0	0	1,700		0	323	550		0	35
Shabelle Dhexe (middle)	500		10,275	3,223	952		15,122	3,240	883		8,630	5,963
Shabelle lower (hoose)	2,197		31,888	13,826	5,712		35,210	17,370	4,371		45,691	21,200
Togdeer	0		75	1,120	0		0	250	0		0	2,250
Wogooyi Gallbeed	0		1,800	26,000	0		90	14,800	0		440	6,350
Grand Total	7,618	1,130	63,251	76,801	16,535	892	77,616	95,892	12,920	2,280	77,357	84,102

Source: Food and Agriculture Organization (FAO) of the United Nations 2018

Agricultural imports have risen reaching almost $1.5 billion in 2015, up to an annual average of only about $82 million in late 1980s. The combination of increased domestic food demand (driven by rapid population growth and urbanization and largely supported by remittances) and the collapse of domestic crop production has led to a massive increase in food imports. [7]

7 SOMALIA: Rebuilding Resilient and Sustainable Agriculture UNFAO2018

Total cereals import through Berbera, Bossaso and Mogadishu Ports (tonnes)

Cereal	2013*	2014	2015*	2016*	2017	2018(January to May)
Rice	170,868	170,888	195,240	207,267	77,299	29,006
Wheat flour	183,058	284,230	318,868	207, 463	105,215	30,263
Pasta	134,311	176,951	155,360	78,113	38, 935	17,556

*Source: FSNAU Somalia 2018, Market Update May 2018(*Elman (Mogadishu) data is up to November 2015. Mogadishu data (Elman port) for 2013 includes January-March Imports. Berbera data is up to December 2016.*

Food industries in Somalia currently do not have adequate infrastructure with the capacity to support fortification of staple foods. However, according to the Food Fortification Initiative (FFI) database, small-scale manufacturing industries are emerging. They include fish-canning and meat processing plants in the north, and about 25 factories in Mogadishu, which manufacture pasta, mineral water and confections.[8] The industries that can be strengthened are an industrial mill which produces more than 20 tonnes of wheat flour per day and one maize milling facility in Mogadishu that produces about 90 Metric tonnes a day, though none of them is equipped with fortification equipment. Collaboration with the private sector can help identify any other industrial mills where fortification can be implemented.

Another industry is sesame oil micro-processors in Shabelle, middle Juba, northwest of Somaliland many parts of Somalia, even though it operates with old machinery that can produce 100 litres of oil per day and not adequate to produce high quality oil, this industry can also be strengthened and equipped to improve its capacity into a large industry that can process and fortify quality and high quantity oil. Interviews by WFP indicate that private sector entrepreneurs have expressed interest in fortification, provided that a market exists for the outlet of fortified products. This will avoid the shipment of most processed crop to Dubai or India for further processing, repackaging and resale under different trade names. Major constraints faced by these local industries include lack of credit (which could be caused by unstable economy), limited technical knowledge, poor storage, small market and weak enabling environment with regard to both security and government policies and regulations[9].

8 Somali National Micronutrient Strategy in 2013
9 SOMALIA: Rebuilding Resilient and Sustainable Agriculture UN FAO 2018

2.2.4 Existing Nutrition Policies (Supporting Fortification in Somalia)

a) The Somali Nutrition Strategy 2011-2013

The overall development goal of this strategy was to contribute to improved survival and development of Somali people through enhanced nutrition. The fourth expected outcome of the strategy was to increase availability of fortified food, improve access to and utilisation of micronutrient supplements and fortified supplementary food by vulnerable groups. Even though supplementary food is provided only to a small segment of the vulnerable groups, the Somali people are yet to realise availability of fortified food.

b) The Federal Government of Somalia Health Sector Strategic Plan II 2018-2021

The strategy aims at improving health status of the people for sustainable development. The Strategic Objective 1 in Section 4 of the Health Sector Plan is to increase access to and utilization of cost-effective, quality and gender-sensitive health services especially for women, children and other vulnerable groups by 2021. Some of the strategies are to scale up the High Impact Nutrition Interventions (HINI), which include food fortification, micronutrient supplementation, infant and young child feeding promotion and management of malnutrition. These could be achieved if the policy framework is strengthened and cooperation between the Somali Government and humanitarian sector is enhanced. Absence of fortification strategy has hindered systematic and impactful actions towards achieving adequate coverage of high impact nutrition interventions.

c) The Federal Government of Somalia's NDP 2017-2019 and the SDGs

This being the first NDP after 27 years of conflict, it serves as the overarching framework for accelerated development priorities in Somalia, one of the overall goals of the plans to make significant strides towards a society with an open and inclusive political system. The policy priority nine is to improve health outcomes such as reduced maternal and child mortality and reduced rate of malnutrition. The objectives of NDP in agriculture sector are to increase agricultural production and to develop and support effective agricultural output commodity or marketing systems across Somalia, ensure increase in cereal yield from 200,000 metric tonnes to 240,000 metric tonnes which will represent a 20% increment in cereal production by 2019. Increase in farm land under irrigated agriculture from 62000ha to 75000 ha, which will represent 1.2% of the land cover and 12% of area under production.

The mission of NDP in the nutrition sector is to improve access and scale up the delivery of essential nutrition services with a focus on children, women and other vulnerable groups and strengthen the national and local capacity to deliver evidence-based and cost-effective nutrition interventions. Mission statement of food security and nutrition sector, is that in the next three years, the most food insecure people should generate incomes required to feed their families, to improve food available and prices, particularly in times of crisis with improved food markets; and by helping the poorest parents ensure their children are well nourished.

In general, NDP has a strong focus on poverty reduction, social and human development that includes health, nutrition and education. The NDP outlines a plan to accelerate the socio-economic transformation of the country in order to reduce poverty. It is important to note that SDGs are mainstreamed throughout the NDP.

d) 2018 Humanitarian Response Plan (HRP) – Strategic Objective 2

Multi-sectoral, integrated approach is at the core of this yearly plan. It is crucial to ensure the involvement of multiple sectors in addressing malnutrition as the causes are complex and interconnected. Therefore, sustainable solutions require coordination and integration with Health, WASH and Food Security clusters as well as agriculture and social protection partners, among others. The objective of the Strategic Objective 2 is to reduce emergency levels of acute malnutrition through integrated, multi-sectoral response by enhancing the integration of Nutrition, WASH, Health and Food Security programmes in order to strengthen nutrition-sensitive programming. The activities will focus on basic life-saving and community resilience-building activities in prioritized geographical areas, including all locations with high prevalence of malnutrition (GAM/SAM), such as IDP settlements and host communities, as well as preventive nutrition programmes across the country.

e) Somalia Drought Impact and Needs Assessment (DINA)

The recent inadequate rainy seasons in 2016 and 2017 led to the establishment of an exercise to identify the root causes of drought and develop a strategy for immediate recovery and longer-term resilience building. This resulted in DINA, a comprehensive effort that mobilized over 180 national and international experts, to assess and quantify drought recovery and resilience building needs across 18 sectors.

Completed in January 2018, the DINA estimates over $3 billion in damages or losses due to drought, equivalent to 50% of annual GDP. Multi-sectoral recovery and resilience building needs were estimated at $2 billion. In comparison, since 2011 famine, some $5.4 billion has been spent on humanitarian responses to save lives. Thus, according to a recent USAID study[10], resilience building in Somalia would save an average of $53 million per year in humanitarian response and investing in early response and resilience measures would yield average benefits of $2.8 for every $1 invested.

f) Resilience and Recovery Framework (RRF)

Translating the DINA findings into action, the Ministry of Planning, Investment and Economic Development (MoPIED) led the development of the RRF to establish a collective vision and strategy for recovery and resilience building priorities. The RRF proposes a financing approach and institutional arrangements by which these can be addressed by FGS and its international partners. RRF is not a funding appeal.

The RRF prioritizes 653 interventions identified in DINA into three levels: High, Medium, and Low, based on the assessed contribution of each intervention. The financing framework calls for high priority projects and programmes to be subject to a government-led funding and investment planning and management process. Partners are meant to target their own investments in Somalia in support of the priorities set out in the framework.

The RRF is to be pursued alongside and build on HRP in order to support recovery and development interventions in a crisis setting. In an effort to ensure that the activities led under the RRF and HRP are coherent and complementary and in line with NWW, 'collective outcomes' have been defined by humanitarian and development partners along with a broad plan for how to ensure that activities will be appropriately layered and sequenced.

The intention has been that RRF will be supported through the Somalia Development and Reconstruction Facility (SDRF), which is both a coordination framework and a financing architecture for implementing NDP. Additionally, the PWGs are to be used for reviewing, prioritizing and validating sectoral needs within RRF. Nutrition is identified as an intermediate outcome indicator as follows: the percent of children under five with wasting for the strategic outcome 'Advanced durable solutions and recovery for previously displaced and affected communities'.

g) The Education Sector Strategic Plan (ESSP) 2017-2021

One of the priorities of ESSP is provision of nutritious school meals that include fortified blended food to school-age children, in order to foster greater educational attainment and retention.

h) Somalia National Micro Nutrient Deficiency Control Strategy 2014 -2016

The policy prioritizes food fortification as one of the key micro-nutrient interventions. Home-based fortification has not been practiced in the country in the past. However, in recognition of the role that home fortification can play in reducing and controlling anaemia especially in children, efforts have been made to identify opportunities for introducing the use of micronutrient powders (MNPs) and their acceptability at household level. MNPs are most appropriate for the poor or rural dwellers that cannot access nutritious food. Commercial fortification should also be initiated in the country. There is need for a Food Control or Food Safety Agency with the capacity to check the quality of food imports and provide minimum standards for production and marketing of foods available for human consumption. The agency should have reasonable capacity to conduct laboratory testing for analysis of safety and nutritional parameters in the foods.

i) SUN priorities for Somalia

The Somalia SUN Secretariat, which sits under the office of the Prime Minister has put up a strong multi-sectoral approach in scaling up nutrition, one of its objectives is creating an enabling political environment, with strong in-country leadership, and a shared space where multiple stakeholders align their activities and take joint responsibility for scaling up nutrition. It also aims at establishing best practices for scaling up proven interventions, including adoption of effective laws and policies. A Common Results Framework (CRF) has now been developed (November 2018) as an over-arching strategic document to improve nutritional status of the population through strengthening of integrated systems (workforce, supplies, finance and governance). SUN has selected as one of its priorities for 2018-19 the development of a food fortification strategy for the country. Somalia became a member of the SUN initiative in May 2014, and as such is at an early stage in the development of SUN processes. Signing up to SUN constitutes a valuable starting point for Somalia to explore discussions and processes which are important dimensions of governance for nutrition.

j) Somalia's Mutual Accountability Framework (MAF)

A New Partnership for Somalia (NPS), developed in July 2018 sets out how Somalia and the international community will work together to meet the most pressing political, security and economic needs and aspirations, as set out in NDP. Built around the key organizing principle of mutual accountability, the MAF was developed in the form of a scorecard providing light-touch, bi-annual updates of progress against the mutual undertakings that drive the agreement. The Somalia Development Reconstruction Facility (SDRF) Steering Committee leads the management of this score taking, supported by the monitoring and evaluation functions of the government. The milestones included in MAF are derived from PWGs, lead ministries and ongoing

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commitments. This will complement the more detailed and comprehensive results/monitoring and evaluation framework that has been developed for the NDP. The MAF is revised on a rolling, annual and iterative basis. Additionally, a social protection policy has been developed as part of milestones in MAF. Notably, SUN Focal Point for Somalia is a member of the sub-working group

2.2.5 Existing Regional Regulations

The East Africa Community (EAC) comprising of Kenya, Uganda, Tanzania and Rwanda, has established legislations and standards for the region. The table below shows EAC for food fortification of wheat flour, edible oil, fats and sugar.

Requirements for vitamin A in fortified sugar (fortified sugar specification-EAS 770:2012)[11]

Nutrient	Fortificant Compound	Recommended factory level mg/kg	Regulatory level mg/kg	
			Minimum	Maximum
Vitamin A	Vitamin A (Retinyl) palmitate	10±5	2	15

Requirements for Vitamin A in fortified edible oil or fat (Specification- EAS 769:2012)

Nutrient	Fortificant Compound	Recommended factory level mg/kg	Regulatory level mg/kg	
			Minimum	Maximum
Vitamin A	Vitamin A (Retinyl) palmitate	35±5	20	40

Requirements for levels of micronutrients in fortified wheat flour (Specification-EAS 767:2012)

Nutrient	Fortificant compound	Recommended factory level mg/kg	Regulatory levels mg/kg	
			minimum	maximum
Vitamin A[1]	Vitamin a (retinyl) palmitate, spray dried or equivalent,0.075percent retinol, min	1.0±0.4	0.5	1.4
Vitamin B_1[1]	Thiamine mononitrate, activity level, 81percent min	9.8±4.4	4.6	NA[2]
Vitamin B_2[1]	Riboflavin, activity level, 100percent, min.	6.6±3	3.3	NA[2]
Niacin[1]	Niacinamide, activity level,99percent, min.	60 ±30	30	NA[2]
Vitamin B_6[1]	Pyridoxine, activity level,82percent min.	6.5 ±3.5	3	NA[2]
Folate	Folic acid, activity level, 100percent, min.	2.3± 1	1.1	3.2
Vitamin B_{12}	Vitamin B_{12} (watersoluble), activity level, 0.1percent min.	0.02± 0.009	0.01	NA[2]
Zinc	Zinc oxide, activity level,80percent min.	60± 20	40	80
Total iron	Total iron	30 ±10	20	NA[2]
Added iron	NaFeEDTA[1,3], activity level, 13percent Fe, min.	30 ±10	20	40
	Ferrous fumerate[3], activity level, 32percent, min.	40 ±10	30	50

[1]The addition of these micronutrients is optional in Tanzania

[2]NA-Not applicable. The maximum limits for these nutrients are not necessary because the upper tolerance limits of these nutrients are very high

[3]The use of one of these would be considered

11 East Africa Standards 2012

The tables above show the recommended minimum and maximum levels of micronutrients in fortified flour, oil and sugar at the factory level, as well as the regulatory level once the product is in the market. At factory level, millers need to have internal quality assurance and quality control systems in order to ensure the addition of selected micronutrients does not exceed set limits for factory level standards. Factories must ensure their products conform to regulatory levels throughout the distribution chain, and that the fortificants used are sufficiently stable to ensure conformity at distribution level.

The understanding of the mainly consumed staple food in a given country, helps determine the type of foods to fortify more effectively. The choice of the vehicle will depend on the quantity eaten by the target population, as well as on the effects of the fortification process on colour, taste and price of the commodity. Numerous staple foods in Somalia are good candidates for being the vehicles for micronutrients supplementation. The most common are wheat flour, maize flour, sorghum flour, pasta, rice, sugar and oil.

2.3 Suggested Food Vehicles

Some parts of the country grow and locally mill maize. Flour fortification in such small scale is possible if premix of fortificants is given to households. Globally, the main micronutrients of public health concern are iodine, iron and Vitamin A. However, according to WHO the main concerns in Somalia are Iron, Vitamin A, Zinc and Folate, . The most critical deficiencies are Vitamin A, Iron and Folate. These micronutrients can be added to the right food vehicles, namely wheat, maize and sorghum flour, cooking oil, salt and sugar.

Of special consideration are condiments like sugar and salt, which are better vehicles since they are consumed in every household in Somalia, even the rural poor can afford the commodity. Packaged flour is considered food for the rich and may not be afforded by the larger population.

2.4 SWOT Analysis- Environment for Implementation of Fortification

Strengths

1. Established functioning system, food fortification falls under MoH's National Development Plan and the Social Sector Road Map milestones:
    - Each Federal Member State has sub-national focal points and champion offices for nutrition; and to some degree micronutrients deficiencies. In some points, public health officers and medical officers have been assigned at regional level to provide government support and functions in general health and nutrition. This existing platforms can be used to promote consumption of fortified food in the communities and reiterate the same messages at health facilities.
    - Existence of a functioning DHS and Micronutrient Malnutrition tracking system is a good platform for management of data from industries and communities on food fortification, also for establishment of a food fortification database.
2. Government and private sector willingness and support to nutrition and food fortification programming:
    - In all zones, the government authorities have embraced the contribution of donors and partners in provision of other MN interventions such as fortified supplementary food by WFP. Ideas like food fortification which whose aim is to improve and increase such services can be integrated to ongoing interventions.
    - There is political will in the country and through the SUN Movement initiative, the Somalia Prime Minister's office is spearheading the food fortification initiative in the county. This has led to acceptance and positive steps in ensuring improved nutrition. The SUN Movement has identified food fortification as critical in improving the micronutrient status of the country.

- There is prioritization and support by the government for the development of a food fortification Strategy as a blueprint to strengthening and improving program performance and effectiveness

3. Availability of strategies like the Somalia Nutrition Strategy that provide for implementation of food fortification.
    - National Nutrition and IYCF strategies and zonal action plans provide platforms for implementation of NFFS interventions. In the Nutrition Strategy, food fortification is a key expected outcome.
    - The overarching HSSP and Health Policy provide the platform on which other health-related strategies are premised, hence setting a strong basis for a food fortification strategy and infrastructure for its implementation.
4. CBOs and local partners that are fully engaged with international partners:
    - The extended networks of CBOs and other local organizations into communities coupled with their enhanced understanding of the culture and practices help cascade and tailor the food fortification program to enhance its uptake and ownership, thereby benefiting the communities. These organizations will be highly involved in decision-making on processing and packaging of fortified food.
    - In addition, availability of community volunteers provide a platform for scaling up behaviour change and attitude towards consumption of fortified food at the community level.
5. Nutrition stakeholders under the Cluster Nutrition Group:
    - Information sharing via cluster (among partners) which promotes planning and coordination during the implementation phase.
    - Food fortification will be integrated into existing nutrition programmes undertaken by partners; to enhance resource utilization and avoid programme overlaps or duplication.
6. Somalia Bureau of Standards, as a quality control unit, has been established. This will be a valuable resource in food fortification since the officers at the unit will be inducted on food fortification and food safety regulations and standards. The unit can also be expanded to cover the whole country through satellite offices or devolved quality control units.
7. In Berbera, there is a milling and fortification plant established by WFP. In addition, there are small-scale industries in Mogadishu and Puntland. This provides a starting point for the government and other funding agencies to support and strengthen the program in scaling up nutrition.
8. The country has a pool of human resource that can be trained and utilized, ranging from food technologist, economists, academia etc. These can form part of both strategic and non-strategic stakeholders in anchoring food fortification.
9. The Federal Government and states coordinate national activities together. This will ensure synchronization and decentralization of food fortification industries to equitably and equally serve the Somali people.
10. Major cereals produced, namely maize and sorghum are appropriate fortification vehicles. Small-scale farming sub-sector accounts for 80% of the total crop out-put. Farmers are gradually embracing appropriate technologies and inputs, which will increase agricultural production. UN FAO supporting farmers through provision of seeds and training and the formation of farmers' cooperatives to market their produce.

    Like-minded programmes like The Growth, Enterprise, Employment and Livelihoods (GEEL) promote inclusive economic growth throughout Somalia. Through GEEL, USAID accelerates Somalia's growing integration into the global economy through a combination of initiatives that improve the country's competitiveness, spur new investments, and increase market linkages and business partnerships. This programme aims to boost Somalia exports of quality agriculture and fish, increase dairy production, reduce reliance on imports, and increase jobs in regions recovering from years of conflict and recurrent natural disasters.

    In this initiative, GEEL are in the forefront working with the private sector in staring up food fortification plants in parts of Somalia or Somaliland. The profit-making industries will bring about the suitability aspect of fortification of local produce.

Weaknesses

1. Limited government resource allocation for general nutrition programmes and food fortification programme. Nutrition activities in Somalia are mainly implemented by humanitarian organizations.
2. Limited milling and fortification infrastructure. Small and medium scale maize millers encounter difficulties in accessing appropriate fortification technologies. Most of the equipment is imported. There are few local fabricators for specific parts of equipment. Their daily production of less than 20MT cannot serve the entire population.
3. Low capacity of food fortification. Small and medium scale industries – particularly in maize milling, have inadequate knowledge and skills for implementing food fortification. However, the same industries have a large consumer base. The law provides only for fortification of packaged flour, yet most of the small industries do not package their flour. This means there is need for strengthening enforcement if the law is to be effective.
4. Poor KAP among the population on micronutrients. There is low community awareness on the benefits of consumption of fortified food. There is need to overcome misconceptions associated with consumption of fortified foods. A common belief is that fortified food is meant for sick and poor people.
5. Preference by the people in Somalia is to consume imported food as opposed to home grown food. There is need to demystify the thought that consuming imported food is more sophisticated.
6. Existing sectoral linkages between ministries are weak. Planning and implementation of food fortification interventions require the participation of different sectors such as agriculture, commerce, finance, education, information and social welfare. Strengthening these existing linkages among government authorities enhances coordination and consistency of practices, thus improved effectiveness of interventions.
7. Delayed implementation of policies. Poor implementation of existing policies impedes formulation of new ones like the food fortification policy. Besides, there is poor and weak implementation of regulations in Somalia.
8. Lack of policy and government institutions that can steer the food fortification process, such as government laboratories, industries ad adequate bureau of standards.
9. Farmers in Somalia are still using traditional farming methods; while adoption of modern agricultural practices and farming technologies is limited.
10. Fortificants are expensive and they have to be imported. Most countries in East Africa do not have the capacity to extract micronutrients in large scale, thus they import tpremixes used in fortification.
11. Food fortification might render staple foods more expensive. Industries may increase prices of fortified food due to cost of production, processing and fortification technology.
12. Lack of technical capacity of local industries on food fortification. The few industries in Somalia are medium and small scale, hence lack adequate capacity to fortify and package food.
13. Lack of food fortification standards: The country needs to develop a Standardization, Quality Assurance, Metrology and Testing Act to make provisions for ensuring standardization, quality assurance, metrology and testing of products produced in the country. Before Somalia establishes its own country standard, it needs to adopt the EAC standards for food fortification, like other member countries. On the other hand, ECSA has developed technical manuals which can be adopted to kick-start the long-awaited food fortification in the country.
14. Government not subsidizing fortified food. Since the government doesn't have adequate resources, it cannot purchase and subsidize the fortified foods to a level accessible to the majority for the population.
15. Limited data or updated survey on micronutrient deficiency in Somalia. The first Micronutrient

survey was done in Somalia in 2009. There is need for an updated micronutrient survey data to inform the Food Fortification Strategy development.

OPPORTUNITIES

1. Recognized Government:
   - This attracts investments and trading from other countries that can set up milling and fortification industries.
   - It positions the country to tap into existing structural and development aid and funding. The NFFS roll out will require funding which maybe beyond the government's budgetary allocation.
   - Allows for participation in international discourse, hence providing a platform to lobby for food fortification program support.
2. The increasing prevailing peace in the country inspires confidence and trust from potential investors into Somalia. This enhances increased investment by existing milling industries to expand and meet the food fortification needs.
3. Willingness from International Community to provide humanitarian aid in the country in terms of funding, logistics, supply and capacity building despite the fragile security. Hence the NFFS is likely to attract funding and other forms of aid.
4. Increasing global interest and recognition on contribution of food fortification to socio-economic development
5. Returning professionals from abroad in health and non-health services that can be used to support the food fortification program
6. Active use of media and good communication coverage
   - Majority of the population has access to media especially radio which can be used to promote food fortification.
   - Mobile networks are available in most regions of the country and can be used as nutrition messaging platforms.
   - Increasing coverage and use of internet provides timely information to improve food fortification programming and eases sharing of reports as well as information among stakeholders within the programme
7. The private sector is growing, therefore private food industries, which are larger with fortification capacity are likely to emerge.
8. Existing Social structures: Availability of community social structures that can be used to champion for change and especially self-initiating change and improve consumption of fortified food e.g. the use of Imams and Sheikhs
9. Trade restrictions on imported products. A lot of food or flour is imported. The government can prescribe fortification requirements of all food and oil being brought into Somalia. This food can be subsidized to ensure affordability. A Turkish company previously contracted by Somalia government to issue pre-shipment verification of conformance or a new company can be contracted to ensure quality and fortification of all imported food.

THREATS

1. Insecurity in parts of the country including civil conflicts, threatens growth and expansion of food industries. This impedes mobility of potential personnel willing to work in fortification programmes. There are restrictions in certain areas such as those dominated by Alshaabab, thus implementation of NFFS is constrained.
2. Natural Disasters, namely recurrent floods, droughts and epidemics have potential to lower local production of grains, which could have boosted the production and fortification programme.
3. Weak governance can potentially lead to collapse of food fortification programme, if government efforts are not well coordinated.
4. Over-reliance on donor-funding:
   - Revenue collected in Somalia cannot sustain the government's agenda.
   - Most nutrition interventions in Somalia are implemented and externally funded by NGOs.
   - Decline in funding to NGOs would compromise nutrition programming including food fortification, hence threaten nutrition and health status of the people.
   - Donor funding may not be aligned with food fortification as a priority.
   - Independent mandates of donors, which at times are not congruent with current nutrition priorities in the country, may limit their involvement in food fortification programme.
   - Changing donor mandates and weak cooperation amongst stakeholders of food fortification programme (international offices and government offices) can limit options for implementation of the food fortification programme.
5. Cultural practices and pressure: Pregnant mothers do not take certain foods due to cultural inhibitions. Enhanced uptake of fortified food must be accompanied by a strong behavioural change communication strategy.
6. Poor economic status of the community (high poverty and illiteracy levels). Understanding the importance of food fortification remains a challenge, and purchase of fortified food is not a priority.

2.5 Stakeholder analysis

This section highlights key stakeholders who have some level of control, influence and interest in all or some aspects of food fortification in Somalia. They may act as individual organizations or groups and coalitions.

Table below, is a brief on the actors, their roles, responsibilities and inter-relationship.

Stakeholder	Action required	Stake	Method
Federal states SUN Government Network	✓ Create enabling political environment, with strong in-country leadership, where multiple stakeholders align their activities and take joint responsibility in food fortification ✓ Allocate more budget to food fortification ✓ Establish food fortification best practices from others countries, including the adoption of effective laws and policies. ✓ Aligning actions around high quality and well-costed country plans, with an agreed results framework and mutual accountability	✓ More resources channelled to food fortification ✓ All sectors focusing on food fortification ✓ Vibrant industry network of food fortification ✓ Healthy and productive Somali people ✓ Stable and peaceful country that attract investors in food fortification industry	✓ Policy advocacy to ensure national ideals are incorporated into the development processes ✓ Outsourcing for resource

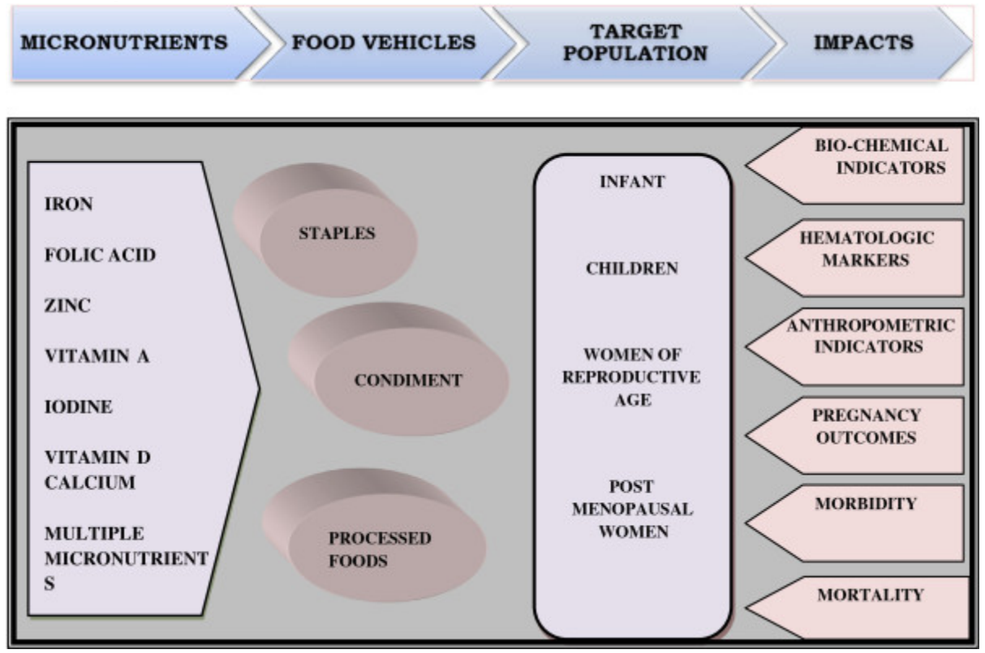
MSP, NDP representative	✓ Support SUN Multi-stakeholder Platform's role in development of policies, legislations and guidelines to improve nutrition interventions through food fortification. ✓ Strengthen food fortification in humanitarian and donor programmes. ✓ Integrating and implementing food fortification in nutrition chapter in National Development Plan (NDP), Health sector strategic plan (HSSP) 2018 – 2021 and Common Results Framework (CRF)	✓ Joint efforts in all sectors to promote food fortification. ✓ More actors in food fortification sector ✓ Improved nutrition status among Somalis Commitment by key ministries to promote food fortification	✓ Roadmap for social human development with food fortification indicators ✓ Food fortification milestones for 2019-2024 ✓ Lobbying and advocating for food fortification ✓ Information sharing
Ministry of commerce and SUN business network	✓ Partnering with all players of food fortification ✓ Establishing Memorandum Of Understanding nsuring fortified food variety in the market ✓ Fortified food stock in food stores	✓ Sustainable fortification of food by relevant commercial food industries	✓ Supporting food industries ✓ Supporting development and quality assurance of fortification standards. ✓ Provision of financing options
Ministry of Health	✓ Lab services to analyse fortified food samples ✓ Ensuring food safety ✓ Ensure compliance of fortified foods at market and household levels to the required standards ✓ Market surveillance of fortified foods	✓ Quality food in the market ✓ Fortified food safe for human consumption Quality test results	✓ Lab analysis and reporting ✓ Continuous surveillance

Ministry of Agriculture & Ministry of Fisheries and marine resources	✓ Support farmers to embrace appropriate technologies in agriculture to improve production ✓ Take part in the creation of know-how on Food fortification ✓ Work closely with Local farmers and industries in the adoption of Food Fortification whilst maintaining Quality ✓ Work closely with the communities in understanding and uptake of Fortified Foods ✓ Partake in the in country research in line with Fith Key stakeholders make sure Quality of Food Fortification is maintained	✓ Ensure Quality and Quantity in the Market is upheld ✓ All citizens benefit from Fortified Foods.	✓ Supporting the non-technical Ministries in Maintaining a robust environment for Food fortification and its uptake
Ministry of Livestock			
SUN Donor network	✓ Provide financial assistance to support food fortification broadly in the country ✓ Support the Government in capacity building of all the stakeholders ✓ Support the Government to undertake research in all aspects of fortification programme ✓ Support the Government in developing behavior change communication messaging	✓ The assistance provided is put to good use by all recipients. ✓ All citizens benefit from the development assistance provided.	✓ Mobilization of resource for research and development work ✓ Establish partnership for coordination of fortification programmes
Somalia Bureau of Standards (SBS)	✓ Develop and enforce national standards for food fortification ✓ Offer testing services and help in creating awareness ✓ Carry out industry level surveillance of fortified foods	✓ Compliance with standards ✓ Industry capacity for quality assurance and control	✓ Policy development and implementation ✓ Regulatory levels

Ministry of Education	✓ Develop and train on the right nutrition education ✓ Be part of the champions of Food fortification and Good nutrition within the relevant communities and gender groups	✓ Enhanced knowledge on good nutrition from early years ✓ Maintained positive knowledge in the community on Nutritious diet as well as food fortification	✓ Curriculum development embed in Primary, secondary and tertiary levels
Somali National University (NSU) and other SUN Academia network	✓ Research, generation of evidence and training of food fortification professionals and to educate the community on food fortification ✓ Analyze biomarkers for national surveys for impact assessment of interventions ✓ Facilitate scientific research and knowledge on food fortification ✓ Technological innovations and trials ✓ Human resource development	✓ Evidence-based planning and decision making with practice to make knowledge generation demand driven and relevant ✓ Fortification programme is scientifically developed and assessed	✓ Adaptive research ✓ Impact monitoring levels ✓ Generation and dissemination of scientific knowledge ✓ Training stakeholders
Sun UN network, Nutrition cluster Consumer groups/ associations, Civil societies	✓ Community mobilization and education on the importance of fortification and benefits of consuming fortified foods ✓ Build capacities at Sub-nationals and nutrition champions to provide health education and messages on fortification to communities ✓ Undertake research and information management and documentation	✓ Fortified foods reach and improve micronutrient uptake for all ✓ Empower communities to take charge of their nutritional status	✓ Establish partnership for execution of programmes in all aspects of fortification ✓ Networking and information sharing with various actors
Media	✓ Disseminate information ✓ Educate the population on benefits of consuming fortified foods	✓ Informed and enlightened population that can appreciate fortified foods ✓ Community that holds its leaders accountable	✓ Strategic Packaging and Dissemination of right information.
SUN civil society networks/ sub-national nutrition champions	✓ Regulatory monitoring ✓ Impact assessment ✓ Create consumer awareness ✓ Monitor consumption	✓ All residents have access to fortified food ✓ Fortification programmes standardized	✓ Lobbying and advocating for services for all. ✓ Information sharing

Food industries both small scale and large scale mills and industries.	✓ Produce and distribute adequately fortified foods to the consumers ✓ Mobilize resources to invest in fortification equipment, premixes and human resources ✓ Create consumer awareness ✓ Access to credit	✓ Production and distribution and fortified food to all ✓ Improved corporate image and profit making	✓ Resources mobilization ✓ Collaboration and partnerships in business community
Consumers	✓ Demand and consume fortified foods in the households, and in public and private institutions	✓ Increased uptake of essential micronutrients	✓ Consultation and inclusion in fortification programmes
Social sector coordinator	✓ Coordinate development of advocacy tools and messages to be disseminated by food fortification stakeholders. ✓ Secretariat to NFFA ✓ Coordinate monitoring of fortified foods at household level ✓ Programme monitoring and Evaluation ✓ Promote ownership of SUN by all stakeholders in Somalia. ✓ Support the achievement of a Common Results Framework in scaling up nutrition and fortification.	✓ Informed consumer ✓ Informed stakeholder ✓ Fortification programmes and activities for the selected food vehicle are coordinated, harmonized and provided to the same standards	✓ Lobbying and advocating for services ✓ Information sharing

2.6 Conceptual Framework



Das et al. Systematic Reviews 2013, 2:67

http://www.systematicreviewsjournal.com/content/2/1/67

This conceptual framework analyses the impact of micronutrient fortification strategies, implemented as single, dual or multiple, on various outcomes. Micronutrients can be administered through one of the three food vehicles (staples, condiments or processed foods) to reach the population targeted. This concept can be simulated in Somalia where food fortification can be used to create a positive impact on various outcomes in the entire community, like child morbidity, pregnancy outcomes, mortality rates, micronutrient deficiencies, social and human resource development. Locally produced or imported staples like wheat, rice and maize are the right food vehicles or condiments which are widely used in Somalia such as sugar and salt or processed food like cooking oil and pasta.

3 STRATEGIC FRAMEWORK

3.1 Overall goal

To improve nutritional status of people in Somalia, by combating micronutrient deficiencies through national food fortification, for accelerated socio-economic development towards achieving the World Health Assembly (WHA) targets for maternal, infant and young child nutrition by 2025 and the Sustainable Development Goals (SDGs).

3.2 Strategic pillars

a) Policy, governance and operations

There are key issues that need to be put in place so as to ensure good governance and operations. One, is creation of conducive policy environment to guide fortification; this can be done through development of facilitative policies, regulations, guidelines and plans. This should reflect the government's commitment in resources, to legislate and enforce broad food safety and quality aspects. Two, sustainability of the fortification programme is required. This calls for creation of an environment for an effective multi-sectoral, joint planning, implementation, supervision and evaluation of food fortification strategy. The buy-in and leadership of the government and its commitment to financial, human and other resources, for food fortification is paramount for the success of the strategy. This component also entails coordination with civil society organizations, donors and community-based organizations that are more accessible to the targeted population for fortified foods.

b) Food processing, fortification and supplementation

For the sustainable production and processing of adequately fortified foods, it is crucial that industries have the right technical and infrastructural capacity in terms of finance and human resources, technology and sustainable premix procurement plans. This calls for development of technologies, to all the players in the production chain, which are facilitative to provide fortified food. More importantly, access and distribution of premixes to food producers is critical for the success of the program. The government should organize with the local banks and other micro-finance facilities to offer credit services to entrepreneurs interested in food fortification. Industries need to have in place commercial distribution systems for fortified foods to reach the consumers across the country. All small-, medium- and large-scale industries should be incorporated. On the other hand, government and/or non-government organizations (NGO) must increase the awareness of the benefits of fortification among the population. In a country like Somalia, although supplementation with micronutrient powders is already given to vulnerable groups, it needs to be replicated to the entire population, especially because most of the population produce and locally mill their own grains and may hardly consume condiments like sugar.

c) Production regulation and staff capacity building

Commercial fortification requires availability of trained staff, SOPs, production regulations and quality standards. For this to happen, there is need for a QAQC body, operations guidelines or handbook and staff training manual. All these will ensure food quality and safety for all foods consumed by the general population. Food quality control and safety is fundamental if food fortification is to be successful. This can be done internally by the industry and monitored externally by regulatory agencies (external monitoring). In general, regulatory monitoring consists of four steps: certification of premix, internal monitoring (quality control and quality assurance) by the industry, external monitoring (inspection and auditing) in factories and importation sites by government officers, and commercial monitoring (verification of compliance to standards) at distribution centres and retail stores by Food Safety Unit.

d) Consumer awareness and behavior change, consumption monitoring and quality enhancement

The quintessence of food fortification is its level of uptake and consumption of the fortified food across the country. Increasing consumer awareness and knowledge of fortified foods through Behavioural Change Communication (BCC) can influence the demand and

consumption of fortified foods. Awareness and positive change in perception towards consumption of fortified foods affects the preference for fortified foods. Therefore, communicating the benefits of consuming fortified foods, to all age groups from children to the elderly, is crucial. This communication should be paired with information on the burden of micronutrient deficiency in Somalia. Most appropriate communication channels are radio, TV, social media, religious groups, billboards, support groups and village *barazas*. Consumption monitoring is the periodic assessment of the household coverage and consumption of adequately fortified foods. Feedback from consumers is a good way of identifying gaps in the food fortification program hence improving quality of fortified food.

3.2.1 Policy, Governance and Operations

In the Somalia Micronutrient Strategy and SUN priorities, food fortification has been identified as one of the key strategies for reducing micronutrient deficiencies. However, there is no specific legal and regulatory framework to implement food fortification in Somalia.

STRATEGIC OBJECTIVE 1

To create a favorable legal, business and political environment for food fortification in large and medium scale industries.

Specific Objectives	Expected outcomes	Strategic interventions
Specific objective 1: **To advocate for development of food fortification policies by policy makers at national level**	**Expected outcome 1** Development, adoption and application of a food fortification policy	✓ Developing national legislation and standards for mandatory fortification in line with regional/international requirements ✓ Developing policy briefs for high level national government leaders on action expected from government ✓ Conducting sensitization/advocacy meetings with policy-makers ✓ Working with political bodies to advocate for policy change in support of the FF
	Expected outcome 2 Commitment by the Somalia government to food fortification through formation of committees, resource allocation and increased stakeholder engagement e.g. scientific community, consumers and marketing specialists.	✓ Recruitment of membership in National Food Fortification Alliance (NFFA) to include all potential stakeholders ✓ Formulation and dissemination of Terms of References for NFFA ✓ Develop operational work plan for NFFA coordination and monitoring activities to be integrated into MoH-NDU plans and budgets ✓ Strengthening capacity of National Fortification Alliances through constant research and training ✓ Organizing for meetings with all stakeholders for dissemination of information, suggestions and feedback ✓ Engage marketers and consumers in development of packaging and branding guidelines ✓ Integrate fortification programme into the national government planning and budgeting

Specific objective 2: **To enhance policy environment to strengthen coordination of food fortification program**	**Expected outcome1** Increased advocacy with industries to comply with legislation and regulations	✓ Develop advocacy briefs targeting potential industries to fortify their food ✓ Conduct sensitization and awareness creation meetings with industry leaders on the benefits of fortification, regulations and standards
	Expected outcome 2 Incorporation and prioritization of food fortification in Government agenda and planning	✓ Developing a National Nutrition Action Plan that incorporates food fortification ✓ Developing and disseminating specifications for premixes ✓ Strengthening of functional and technical capacity of National Fortification Alliances through constant training and research; ✓ Providing technical and financial support to small scale industries and programme coordination from government, private sector and development partners; ✓ Enforce mandatory legislation and integrating monitoring activities/human resource in the national budget.

3.2.2 Food processing, Fortification and Supplementation

This pillar aims at ensuring production of fortified food like salt, maize, rice and wheat flours, vegetable oil and fats. It also aims at construction of new and strengthening existing industries to improve their capacity to fortify food.

STRATEGIC OBJECTIVE 2

To ensure adequate production and fortification at relevant packaging commercial food industries in accordance to the Somali/East African regulations and provide vitamins and minerals for the segments of the rural population that use locally produced unprocessed food.

Specific objectives	Expected outcomes	Strategic interventions
Specific objective1: **To strengthen and support food industries to use of appropriate technology in food processing and fortification to make program effective and sustainable.**	**Expected outcome 1** Sustainable fortification of food by relevant commercial food industries	✓ Ensuring that mills operate with defined standard operating procedures; ✓ Organising meetings for the mill owners about fortification and its importance and create awareness among stakeholders ✓ Adopting good governance principles of involving stakeholders in decision making ✓ Make fortification database to monitor the quantity of fortified foods and amount of premix used at industry level in a given period of time ✓ Encouraging research institutes to develop cost effective and appropriate technology for fortification at small hammer mills ✓ Design technologies adaptable by potential small and medium scale industries ✓ Pilot testing of the improved technologies with selected small and medium scale maize millers ✓ Develop sensitization messages/manuals/advocacy briefs to industries and distributors of fortified foods ✓ Disseminate the innovative technologies to scale up fortification across the country
	Expected outcome 2 Support milling and fortification industries and subsidize production cost	✓ Tax free importation of fortificants ✓ Sourcing for funds from partners to support industries in the initial purchase of fortificants ✓ Developing innovative models for procurement and financing of fortificants ✓ Establishing associations for sourcing premix, feeders and other equipment ✓ Linking purchase of fortificants with existing purchasing models ✓ Provide credit/loan services to local industries
	Expected outcome 3 Construction of large scale milling industries equipped with appropriate technology	✓ Writing proposals for funding aimed at construction of large scale industries and modern technology ✓ Involving stakeholders in the development of suitable alternative technology; ✓ Development of affordable and effective feeder technology for milling industries ✓ Identifying construction sites to set up milling industries
Specific objective 2: **To identify the right food vehicles and map out the existing food processing industries that can implement food fortification**	**Expected outcome 1** Identification of the right food fortification vehicle and respective fortificants.	✓ Use existing data to identify the most suitable food vehicles; culturally accepted and highly consumed staple food. ✓ Try new fortification combinations especially for wheat products like pasta which is highly consumed in Somalia ✓ Sample and test the fortified food for micronutrient levels and possible nutrient interactions
	Expected outcome 2 Identification and engagement of medium and large scale industries that have the capacity to fortify food.	✓ Develop tools for assessing status of industries producing the selected foods ✓ Conduct a study to assess location, size and fortification status of industries producing wheat flour, rice flour, oil and fats, maize flour. Also those processing and packaging sugar and salt in Somalia ✓ Through existing resources such as health inspectors Identify and map all smaller scale commercially operating packaging hammer mills. ✓ Listing which flour mills are packaging and which are just toll mills/fee for service mills ✓ Establishing a registry of these industries and a Somali specific mechanism for reaching out to the mill owners ✓ Organising meetings for the industry owners about fortification and its importance and create awareness among stakeholders; ✓ Involving stakeholders in decision making;
Specific objective 3: **To provide vitamins and minerals for the segments of the rural population that grow their own food and do not have access to fortified, packaged commercially processed food.**	**Expected outcome** Food fortification that has to reach the Somalis who depend on home grown food	✓ **Strategic Interventions** ✓ Providing supplements to entire population ✓ Providing of multiple micronutrient powder sachets (“sprinkles”); ✓ Use of other suitable measures to provide essential vitamins and minerals like zinc, folate ✓ Undertaking counselling on dietary diversification.

3.2.3 Production Regulation and Staff Capacity Building

This pillar seeks to improve compliance to standards and regulation at the factory and commercial levels through improving internal QA/QC practices. It also aims at improving quality of produced fortified food through capacity building of staff in the food industries. The Somalia Bureau of Standards is expected to provide active monitoring to the industries to ensure adherence to desired food quality, safety and specifications of the Country.

STRATEGIC OBJECTIVE 3

To ensure compliance to standards and regulations of food fortification at industry levels and building capacity of staff

Specific objectives	Expected outcomes	Strategic interventions
Specific objectives 1: To develop clear framework and guidelines on safe fortification and quality monitoring	**Expected outcomes 1** Development of food fortification handbook	✓ Involve research institutions and institutions of higher learning to develop a food fortification handbook ✓ Develop and communicate the fortification objectives to the institution developing the handbook
	Expected outcome 2 Establishment of bureau of standards body and quality assurance and control procedures	✓ Ensure a functional national bureau of standards board is in place ✓ Develop TORs for the board of the national bureau of standards to ensure a good mix of qualifications to ensure efficiency of the board. ✓ Develop compliance enforcement mechanisms with clear rules on how enforcement will be applied for non-compliance
Specific objective 2: **To ensure adherence to quality standards at industry level**	**Expected outcome 1** Compliance to set regulations by industries to ensure food safety	✓ Regular supervision and mentoring visits to industry managers and production staff ✓ Train industry players on developing and maintaining sustainable QA/QC systems ✓ Monitor the quality of premix along the supply chain from production to the user ✓ Compile compliance data/records from routine market surveillance ✓ Conduct market surveillance to determine level of compliance for each food vehicle ✓ Share information on compliance levels with relevant stakeholders ✓ Sensitize investors and businessmen and their organizations on fortification regulations and their roles and responsibilities in increasing access to fortified foods
	Expected outcome 2 Establishment of internal Quality assurance and control practices in industries	✓ Developing and disseminating country QA and QC protocols for industries and regulators; ✓ Training of the food inspectors in inspection of fortified foods;
Specific objective 3: **To build production capacity in industries so as to scale up fortification**	**Expected outcome 1** Training package for food fortification workers and stakeholders	✓ Involve training institutions in the development of modules for training staff ✓ Conduct training of industry leaders and technical staff
	Expected outcome 2 Well trained and performing staff who produce high quality fortified food that comply to recommended standards	✓ Training of small and medium scale millers on SOP's, GMP and food safety ✓ Undertaking routine and periodic training of millers on QA/QC practices including premix addition and usage reconciliation. ✓ Draft strategies for capacity improvement ✓ Develop curriculum/modules for training industry leaders and technical staff ✓ Develop quality management tools for the national public health laboratory ✓ Train regulatory officers such as public health officers, police officers and officers in the Judiciary

3.2.4 Consumer Awareness and Behavior Change, Consumption Monitoring and Quality Enhancement

This pillar takes care of consumer behaviour and attitude towards consumption of fortified food and low levels of awareness and knowledge on importance of fortification among the population. It also aims at improving quality of fortified food through identifying areas of improvement from consumed feedback.

STRATEGIC OBJECTIVE 4

To scale up consumer awareness and behavior change, ensure surveillance of food consumption and enhance quality production of fortified food

Specific objectives	Expected outcomes	Strategic interventions
Specific objective 1: **To ensure consumer awareness on availability and change of behavior towards consumption of fortified food**	**Expected outcome 1** High consumption of fortified food across the country	✓ Collaborate with implementers of current behavioural change strategy in Somalia (Social mobilization, advocacy and communication strategy 2019-2021) ✓ Develop and review existing IEC materials to incorporate food fortification ✓ Disseminate the IEC materials and consumer awareness strategies across the county ✓ Involve local leaders and Sheiks to demystify cultural practices that are against consumption of fortified food ✓ Organize promotional activities for fortified foods ✓ Hold advocacy and awareness creation meeting with consumer associations to include messages on benefits of fortified foods to their members ✓ Identify champions to promote culture of consumption of fortified foods
	Expected outcome 2 Embrace and Ownership of fortification program by consumers	✓ Strive to bring together the public, politicians, and all actors in nutrition and marginalised groups to support efforts to embrace consumption of fortified food. ✓ Stir up commitment of leaders from district, state to national level. Their actions will inspire the public to embrace food fortification. ✓ Involve elected leaders, influencers and celebrities in nutrition issues ✓ Use husbands as head of household to influence consumption of fortified food at household level ✓ Involve community groups, leadership forums in decision making
Specific objective 2: **To conduct periodic monitoring of household consumption of fortified food**	**Expected outcome 1** Regular assessment and surveillance on consumption of fortified food	✓ Monthly data collection and documentation on consumption of fortified food at household levels ✓ Develop and include fortification specific assessment indicators such as consumption indicators in HMIS ✓ Periodic accurate updating of the food fortification database by all stakeholders
	Timely and accurate analysis of consumption patterns of fortified food	✓ Conduct quarterly analysis of reports of monitoring, testing and food fortification in the database ✓ Engage appropriate and qualified institutions to conduct research and analysis
Specific objective 3: **To conduct research seeking feedback from consumers that will help improve on quality of food fortification**	**Expected outcome 1** Continuous research on areas that need improvement	✓ Ensure continuous collection of data
	Regular improvement of quality in fortified food	✓ Identify areas of improvement in the analysis report ✓ Reorganize strategies and plan to improve the food fortification program

4 STRATEGIC APPROACHES

This section gives more detailed guidance for actions to be done in order to implement NFFS under each pillar. The strategies are presented logically to ensure that every strategic objective is met.

4.1.1 Policy, Governance and Operations

Outcome	Actions
Development, adoption and application of a food fortification policy	✓ Adoption, validation and launch of the National Food Fortification Strategy ✓ Developing national legislation and standards for mandatory fortification in line with regional/international requirements ✓ Conducting sensitization/advocacy meetings with policy-makers ✓ Working with political bodies to advocate for policy change in support of the FF ✓ Interpretation of guidelines and protocols to Somali language and dissemination to all food industries
Commitment by the Somalia government to food fortification through formation of committees, resource allocation and increased stakeholder engagement e.g. scientific community, consumers and marketing specialists.	✓ Integrate fortification programme into the national government planning and budgeting ✓ Organizing for meetings with all stakeholders for dissemination of information, suggestions and feedback e.g. engaging marketers and consumers in development of packaging and branding guidelines ✓ Formation of a national food fortification committee/alliance and increased stakeholder's engagement around food fortification.
Increased advocacy with industries to comply with legislation and regulations	✓ Develop advocacy briefs targeting potential industries to fortify their food ✓ Conduct sensitization and awareness creation meetings with industry leaders on the benefits of fortification, regulations and standards
Incorporation and prioritization of food fortification in Government agenda and planning	✓ Advocate for allocation of appropriate financing of food fortification program ✓ Develop a National Nutrition Action Plan and integrate food fortification ✓ Strengthen, planning and coordination for effective convergence of intervention in geographical areas as appropriate for increasing food fortification outcome. ✓ Incorporate food fortification objectives into nutrition programs for development and humanitarian assistance.

4.1.2 Food processing, Fortification and Supplementation

Outcome	Actions
Sustainable fortification of food by relevant commercial food industries	✓ Strengthen private sector partnerships that channel inputs, services and technology to millers and enhance food production and marketing systems to increase access to safe and nutritious foods. ✓ Organising meetings for the mill owners about fortification and its importance and create awareness among stakeholders ✓ Increase the availability of and access to high quality fortified products and develop sensitization messages/manuals/advocacy briefs to industries and distributors of fortified foods on sustainable food production and storage systems ✓ Encouraging research institutes to develop cost effective and appropriate technology for fortification at small hammer mills ✓ Make fortification database to monitor the quantity of fortified foods and amount of premix used at industry level in a given period of time
Support milling and fortification industries and subsidize production cost	✓ Tax free importation of fortificants and sourcing for funds from partners to support industries in the initial purchase of fortificants or developing innovative models for procurement of fortificants. ✓ Establish associations for sourcing premix, feeders and other equipment and train industries in food fortification to ensure high quality, food safety, as well as appropriate storage and logistics processes, ✓ Assess and strengthen managerial competencies at all levels within the key programs and systems.
Construction of large scale milling industries equipped with appropriate technology	✓ Writing proposals for funding aimed at construction of large scale industries and modern technology ✓ Involving stakeholders in the development of suitable alternative technology; ✓ Development of affordable and effective feeder technology for milling industries ✓ Identifying construction sites to set up milling industries
Identification of the right food fortification vehicle and respective fortificants.	✓ Use existing data to identify the most suitable food vehicles; culturally accepted and highly consumed staple food. ✓ Try new fortification combinations especially for wheat products like pasta which is highly consumed in Somalia ✓ Sample and test the fortified food for micronutrient levels and possible nutrient interactions
Identification and engagement of medium and large scale industries that have the capacity to fortify food.	✓ Develop tools for assessing status of industries producing the selected foods ✓ Conduct a study and mapping to assess location, size and fortification status of industries producing wheat flour, rice flour, oil and fats, maize flour. Also those processing and packaging sugar and salt in Somalia ✓ Establishing a registry of these industries and a Somali specific mechanism for reaching out to the mill owners ✓ Prepare and sign contracts with industry owners for implementation of fortification plan
Food fortification that to reach the Somalis who depend on home grown food	✓ Providing supplements; ✓ Providing of multiple micronutrient powder sachets (“sprinkles”); ✓ Undertaking dietary diversification through the provision of other nutritious crops such as legumes.

4.1.3 Production regulation and staff capacity building

Outcome	Actions
Development of food fortification handbook	✓ Involve research institutions and institutions of higher learning to develop a food fortification handbook, also bench mark with other neighboring countries for food fortification manual ✓ Put in place a national food fortification manual
Establishment of bureau of standards body and quality assurance and control procedures	✓ Constitute a government institution charged with the responsibility of ensuring adherence to national standards and guidelines for food fortification ✓ Promote the development of food standards and regulations to ensure food safety and quality assurance and quality control
Compliance to set regulations by industries to ensure food safety	✓ Regular supervision and mentoring visits to industry managers and production staff ✓ Conduct spot checks and market surveillance in industries to ensure adherence to regulations and compile compliance data/records. ✓ Share information on compliance levels with relevant stakeholders ✓ Sensitize traders and their organizations on fortification regulations and their roles and responsibilities in increasing access to fortified foods
Establishment of internal Quality assurance and control practices in industries	✓ Ensure all industries develop and use an internal quality standards manual to promote accountability and transparency within the food fortification program. ✓ Train industry players on developing and maintaining sustainable QA/QC systems, train food inspectors in inspection of fortified foods
Training package for food fortification workers and stakeholders	✓ Involve training institutions in the development of modules for training staff ✓ Do market assessment for best food science curriculum
Well trained and performing staff who produce high quality fortified food that comply with recommended standards	✓ Training of small and medium scale millers on SOP’s, food safety and QA/QC practices including premix addition and usage reconciliation, where possible through their associations.

4.1.4 Consumer awareness and behavior change, consumption monitoring and quality enhancement

Outcome	Actions
High consumption of fortified food across the country	✓ Collaborate with implementers of current behavioural change strategy in Somalia (Social mobilization, advocacy and communication strategy 2019-2021) ✓ Develop and review existing IEC materials to incorporate food fortification and disseminate the IEC materials and consumer awareness strategies across the county ✓ Involve local leaders and sheiks to demystify cultural practices that's against consumption of fortified food and identify other champions to promote culture of consumption of fortified foods ✓ Hold advocacy and awareness creation meeting with consumer associations to include messages on benefits of fortified foods to their members ✓ Support periodic broadcast of messages on importance of fortified food and influence the private sector to create socially responsible advertising in order to increase demand for fortified food products.
Change of behavior, embrace and ownership of fortification program by consumers	✓ Strengthen behaviour change interventions based on formative research on consumer and household preferences, needs and barriers to changing behaviours. ✓ Strive to bring together the public, politicians, and all actors in nutrition and marginalized groups to support efforts to embrace consumption of fortified food. ✓ Use husbands as head of household to influence consumption of fortified food at household level, also consider cultural values in processing and packaging of fortified food ✓ Involve community groups, leadership forums in decision making and engage the consumers in all steps from inception of food fortification program to instill ownership
Regular assessment and surveillance on consumption of fortified food	✓ Monthly data collection and documentation on consumption of fortified food at household levels, strengthen food fortification component in other nutrition surveys to ensure data is collected ✓ Develop and include fortification specific assessment indicators such as consumption indicators in DHS Revise of the monitoring and evaluation framework for food fortification ✓ Strengthen research and timely dissemination of findings to decision makers and enhance national information, surveillance, periodic accurate updating of database by all stakeholders ✓ Strengthen monitoring and reporting system in the community.
Timely and accurate analysis of consumption patterns of fortified food	✓ Conduct quarterly analysis of reports of monitoring, testing and food fortification in the database ✓ Engage appropriate and qualified institutions to conduct research and analysis ✓ Allocate funds and plan for continuous monitoring and assessment ✓ Synthesize and translate research findings for non-research audiences
Continuous research on areas that need improvement	✓ Identify key areas that need research and carry out formative or operational research to improve food fortification ✓ Conduct research every quarter of the program to identify gaps
Regular improvement of quality in fortified food	✓ Establish performance indicators and system strengthening. ✓ Use information from continuous research to strategize on better quality of fortified food

Food fortification is the most cost-effective intervention to address micronutrient deficiencies at population level. The reduction of micronutrient deficiencies needs to be considered as one of the national priorities by the Government, while the various government entities and line ministries should collaborate to achieve this common goal.

5 CONCLUSION AND RECOMMENDATIONS

Most countries in the region are already implementing food fortification of staple foods, and lessons learnt from their experience can be used to inform the Somalia strategy, while the guidelines and standards they have adopted can serve as a reference. Although Somalia does not have a specific policy yet, it benefits from an enabling environment, with nutrition being at the center of several national strategies and priorities, with fortification being one of the focus areas of SUN Somalia.

Food fortification in Somalia should be done both through targeted interventions, to population groups at risk, and through home fortification. With support from specialized nutrition agencies; as well as through the development of commercially fortified foods by the private sector. At the same time, behaviour change communication will raise awareness among the Somalia population about the importance of consuming nutrient-rich foods.

This draft is the first step in a larger process to bring the fortification agenda forward in the country, while further government and stakeholder engagement will be needed to develop a strong strategy for staple food fortification in Somalia.

RECOMMENDATIONS

- There is need for strong national policies that address food fortification as a key public health intervention in the fight against micronutrient malnutrition and contributes positively to food and nutrition security. Additionally, existing policies should also incorporate food fortification since there is no specific national policy for food fortification.
- Adopt, through the Somali Bureau of standards, the ECSA regional guidelines on fortification developed by ECSA Regional Technical Working Group on Regulations and Standards, these guidelines have been adopted by some African countries.
- Adopt the WHO general guidelines on fortification by adjusting to fit the Somalia context.
- Borrow the advocacy materials including messaging materials on food fortification developed by ECSA Secretariat in collaboration with other Partners in Africa.
- Develop a national logo for fortified foods
- Bench mark with countries which have implemented food fortification program and borrow their experts who can provide technical assistance in the different components of food fortification programs.
- Borrow and contextualise ideas from the 17 food Regulations Standards and food Control manuals on internal and external monitoring of fortified foods and training, developed by ECSA Technical Working Group.
- It is important to use of quality and safe fortificants and/or premixes during production of fortified foods
- Fortification is Science based; therefore there is need for accurate baseline information and monitoring data for planning and designing food fortification programs.
- Outsource for funding from potential partners, the need to solicit sustained financing from government and partners for planning, implementation and monitoring of programme activities cannot be overemphasized.
- Ensure that all stakeholders are on the course in implementation of the strategic plan and that it remains largely relevant to the Somali people
- The implementation of food fortification should focus on one potentially effective food vehicle, and then it can be expanded to include other important foods.
- The program and projects may be implemented by a variety of actors or stakeholders in the community and can be acted upon by individual stakeholders or in collaboration with the other stakeholders and/or government.
- The government should ensure that industry owners voluntarily fortify food; they can be supported by providing

fortificants, milling technologies and marketing of their products through government media.

- Make use of local human resource by training them on food processing, milling and fortification procedures. Capacity of those already working in existing industries should be strengthened to enhance their performance.
- The strategic plan also provides a framework for developing different programmes in line with the strategic objectives. Develop other concrete programs to support this strategy i.e behaviour change and communication strategy and resource mobilization strategy.
- Government to form a program coordination structure to implement food fortification strategy
- Ensure continuous monitoring and periodic evaluation at the mid-point and end-point of the plan. Based on the experiences and lessons learned, a new NFFSP must be developed after every five years.

6 MONITORING AND EVALUATION PLAN

Outcome	Indicator	Means of verification	Frequency	Responsibility
Development, adoption and application of a food fortification policy	Number of policies NFFS launch documents Interpreted guidelines and protocols	Policy documents Policy meeting minutes NFFS launch documents Somali language guidelines and protocol	Annually	SUN secretariat OPM / Social sector coordinator NFFS focal person NDP representative Federal states Sub-National Nutrition champions Social sector representative
Commitment by the Somalia government to food fortification through formation of committees, resource allocation and increased stakeholder engagement e.g. scientific community, consumers and marketing specialists.	Number of meetings Memorandum	Memorandum of understanding documents Analysis reports	Quarterly	NFFS focal person, NDP and social sector representatives, Sub-National Nutrition champions
Increased advocacy with industries to comply with legislation and regulations	Number of meetings Legal documents Agreements	Meetings minutes Signed legal documents Signed agreements	Annually	NFFS focal person, NDP and social sector representatives Sub-National Nutrition champions
Incorporation and prioritization of food fortification in Government agenda and planning	Budget MOH / Ministry of commerce/ Ministry of Agriculture plans	Government budget document of the Ministries yearly plan of activities	Annually	NFFS focal person, NDP and social sector representatives, Sub-National Nutrition champions
Sustainable fortification of food by relevant commercial food industries	Partnership reports Quantity of fortified food varieties Quantity of food	Partnership MOU documents, Fortified food variety in the market Fortified food stock in food stores	Monthly	NFFS Focal Person SUN Secretariat Ministry of commerce

Subsidized food processing and fortification cost.	Fortificants delivery report Import reports Tax exemption documents	Industry food fortification report Verified tax exemption documents	Monthly	SUN secretariat /NFFS focal person, NDP and social sector / ministry of commerce representatives, Sub-National Nutrition champions
Construction of large scale milling industries equipped with appropriate technology	Number of industries constructed Construction plans Construction contracts Number and type of technologies	Already constructed, industries, signed construction contacts, Construction budgets and expenditure receipts	Quarterly	NFFS focal person, NDP and social sector representatives, Sub-National Nutrition champions
Identification of the right food fortification vehicle and respective fortificants.	Food vehicle selection process	Choice of food vehicle and rationale report	Annually	NFFS focal person, MOH, Academia representatives
Identification and engagement of medium and large scale industries that have the capacity to fortify food.	Number of industry assessments Number of contracts signed	Industries assessed for food fortification capacity Signed contracts	Annually	NFFS focal person, NDP and social sector representatives, Sub-National Nutrition champions
Food fortification to reach the Somalis who depend on home grown food	Number of micronutrient powder sachets Number of vitamins and minerals supplements Amount of nutritious crops issued	micronutrient powder sachets delivery records supplements delivery records records of nutritious crops issued	Monthly	NFFS focal person, NDP and social sector representatives, Sub-National Nutrition champions
Development of food fortification handbook	Number of handbooks Number of countries consulted in bench marking	Handbook document Handbook benchmarking and development report	Annually	NFFS focal person, NDP and social sector representatives, Sub-National Nutrition champions
Establishment of bureau of standards body and quality assurance and control procedures	The national bureau of standards Number of quality protocols Availability of means of verification (stickers)	Bureau of standards in operation Quality control protocol document, availability of stickers	Annually	NFFS focal person, NDP and social sector representatives, Sub-National Nutrition champions

Compliance to set regulations by industries to ensure food safety	Regular spot checking National bureau of standards logo of fortified product	Spot check report Availability of bureau of statistics logo on fortified products in the market	Monthly	NFFS focal person, NDP and social sector representatives, Sub-National Nutrition champions
Establishment of internal Quality assurance and control practices in industries	Level of accountability by industries Internal quality assurance manual	Industry assessment reports Quality assessment manual	Quarterly	NFFS focal person, NDP and social sector representatives, Sub-National Nutrition champions
Training package for food fortification workers and stakeholders	Training manual Number of meeting Needs assessment report	Training curriculum Staff needs assessment report Curriculum consultative reports	Annually	NFFS focal person, NDP and social sector representatives, Sub-National Nutrition champions Academia
Well trained and performing staff who produce high quality	Training manual Number of meeting Needs assessment report	Training curriculum Staff needs assessment report Curriculum consultative reports	Quarterly	NFFS focal person, NDP and social sector representatives Sub-National Nutrition champions Academia
Fortified food that comply to recommended standards	Diverse fortified food Media broadcast clips on promotion of consumption of fortified food Report from local leaders on consumption rates	Diversity of fortified food in the market Regular broadcasting in media houses to promote consumption of fortified food Local leaders report	Monthly	NFFS focal person NDP and social sector representatives Sub-National Nutrition champions
High consumption of fortified food across the country	Stakeholder involvement in NFFS implementation Awareness creation on importance of food fortification Cultural values in processing and packaging of food	NFFS report Awareness strategies Cultural values incorporated in food processing	Monthly	NFFS focal person, NDP and social sector representatives Sub-National Nutrition champions
Change of behavior, embrace and ownership of fortification program by consumers	Information in community reports Information in food consumption patterns Information in KAP report	Community reports Food consumption patterns KAP report	Monthly	NFFS focal person NDP and social sector representatives Sub-National Nutrition champions

Regular assessment and surveillance on consumption of fortified food	Research and analysis funding records Type of institution conducting analysis and reporting Number of consumption analysis	Analysis report Institutions analyzing report Analysis feedback	Quarterly	NFFS focal person NDP and social sector representatives Sub-National Nutrition champions Research institutions
Timely and accurate analysis of consumption patterns of fortified food	Number of areas in need of research Research report	Research report	Annually	NFFS focal person , NDP and social sector representatives Sub-National Nutrition champion Research institutions
Regular improvement of quality in fortified food	Number of quality performance indicators Trends in quality of fortified food	Availability of performance indicators Improvements on quality of fortified food in the market Consumer feedback	Quarterly	NFFS focal person, NDP and social sector representatives, Sub-National Nutrition champions Research institutions

Appendix 1: IMPLEMENTATION PLAN (to be improved on)

SO 1: Policy, Governance and Operations (Cost in USD)			Years				
No.	**Outcome**	**Actions**	**2019**	**2020**	**2021**	**2022**	**2023**
1	Development, adoption and application of a food fortification policy	Adoption and launch of the National Food Fortification Strategy	33000				
		Developing national legislation and standards for mandatory fortification in line with regional/international requirements (reviews)	50,000	20,000	20,000	15000	15000
		Conducting sensitization/advocacy meetings with policy-makers	30,000	30,000	30,000	30,000	3,0000
		Working with political bodies to advocate for policy change in support of the FF	35,000	20,000			
		Interpretation of guidelines and protocols to Somali language and dissemination to all food industries (plus printing)	35,000			25,000	
2	Commitment by the Somalia government to food fortification through formation of committees, resource allocation and increased stakeholder engagement e.g. scientific community, consumers and marketing specialists.	Recruitment of membership in Somalia National Food Fortification Alliance (SNFFA) to include all potential stakeholders / meetings	10,000	16,000	16,000	16,000	16,000
		Formulation and dissemination of Terms of References for SNFFA	20,000				
		Develop operational work plan for SNFFA coordination and monitoring activities to be integrated into OPM-NDP plans and budgets	24,000	20,000	20,000	20,000	20,000
		Quarterly meetings/ Dissemination of research and trainings for the NFFA	24,000	20,000	20,000	20,000	20,000
		Stakeholders meetings with the SUN lead and NFFAs for dissemination of information, suggestions and feedback	13,000	13,000	13,000	13,000	13,000
		Engage marketers and consumers in development of packaging and branding guidelines	10,000				
		Disseminate the guidelines	30,000				
		Integrate fortification programme into the national government planning and budgeting(lobbing)					
3	Increased advocacy with industries to comply with legislation and regulations	Develop advocacy briefs targeting potential industries to fortify their food	10,000	5,000	5.000	5,000	5.000
		Conduct sensitization and awareness creation meetings with private sector on the benefits of fortification, regulations and standards (2 activities will be under one workshop)	16,000	16,000			
4	Incorporation and prioritization of food fortification in Government agenda and planning	Advocate for allocation of appropriate financing of food fortification program (SUN secretariat will carry out the lobbying)					
		Develop/ Revise the National Nutrition Action Plan and integrate food fortification	30,000				
		State meetings for food fortification planning and coordination and effective and appropriate outcomes.	14,000	14,000	14,000		
		Incorporate food fortification objectives into nutrition programs for development and humanitarian assistance. (Funds to facilitate the SUN secretariat movement)					
Total			**370,000**	**326000**	**229000**	**116000**	**141000**

SO 2: Food processing, Fortification and Supplementation (Cost in USD)			Years				
No.	**Outcome**	**Actions**	**2019**	**2020**	**2021**	**2022**	**2023**
1	Sustainable fortification of food by relevant commercial food industries	Conduct Formative research (Baseline and Mid-term Evaluation) on Food Fortification in Somalia by Region	30000	20000			
		Conduct visibility and Design technologies adaptable by potential small and medium scale industries in Somalia context	20500				
		Pilot testing of the improved technologies with selected small and medium scale maize millers	50,000				
		Develop sensitization messages/manuals/advocacy briefs to industries and distributors on better nutrition and fortified foods on sustainable food production and storage systems (will done within the development of IEC material)	30,000				
		Organizing meetings for the mill owners about fortification and its importance and create awareness among stakeholders (Initial and follow up meetings)	15000	15000	15000		
		Make fortification database to monitor the quantity of fortified foods and amount of premix used at industry level in a given period of time (Training Bi- Annually) (M & E staff)	30,000	30,000	10,000	10,000	10,000
2	Support milling and fortification industries and subsidize production cost	Advocacy and Sourcing for funds from partners to support industries in the initial purchase of fortificants or developing innovative models for procurement of fortificants. (SUN advisor)	100,000	80000	80000	80000	80000
		Establish associations for sourcing premix, feeders and other equipment and train industries in food fortification to ensure high quality, food safety, as well as appropriate storage and logistics processes.	20000				
3	Construction of large scale milling industries equipped with appropriate technology	Writing proposals for funding aimed at construction of large scale industries and modern technology (SUN secritariate and staff)					
		Involving stakeholders in the development of suitable alternative technology;	16500				
		Development of affordable and effective feeder technology for milling industries	80000	80000			
		Identifying construction sites to set up milling industries	60000				
4	Identification of the right food fortification vehicle and respective fortificants.	Use existing data to identify the most suitable food vehicles; culturally accepted and highly consumed staple food. ((SUN advisor and staff))	12000				
		Sample and test the fortified food for micronutrient levels and possible nutrient interactions (SBS)	25000				
5	Identification and engagement of medium and large scale industries that have the capacity to fortify food.	Develop tools for assessing status of industries producing the selected foods	20000				
		Establishing a registry of these industries and a Somali specific mechanism for reaching out to the mill owners (ICT)	30000				
		Prepare and sign contracts with industry owners for implementation of fortification plan	20000				
6	Food fortification that to reach the Somalis who depend on home grown food	Purchase and provide supplements(stakeholder to facilitate)					
		Providing of multiple micronutrient powder sachets (“sprinkles”)UNICEF and WFP					
		Undertaking dietary diversification through the provision of other nutritious crops such as legumes.	12000				
Total			**571000**	**155000**	**105000**	**10000**	**10000**

SO3: Production regulation and staff capacity building (Cost in USD)			Years				
No.	**Outcome**	**Actions**	**2019**	**2020**	**2021**	**2022**	**2023**
1	Development of food fortification handbook	Development of food fortification Manual and handbook (Review)	30,000				
		Dissemination and Training of food fortification handbook (Refresher training)	36000	15000	46000		24000
		Translate manual and handbook to Somali	35000				
2	Establishment of bureau of standards body and quality assurance and control procedures	Constitute a government institution charged with the responsibility of ensuring adherence to national standards and guidelines for food fortification (SBS)					
		Support the SUN staff to ensure food standards and regulations are adhered to	13500	18000	18000	18000	18000
3	Compliance to set regulations by industries to ensure food safety	Regular supervision and mentoring visits to industry managers and production staff (funds to support line below)	6000	8000	8000	8000	8000
		Conduct spot checks and market surveillance in industries to ensure adherence to regulations and compile compliance data/records.	3000	4000	4000	4000	4000
		Share information on compliance levels with relevant stakeholders (SUN staff)					
		Sensitization meetings with traders and key organizations	13000	13000	13000	13000	13000
4	Establishment of internal Quality assurance and control practices in industries						
		Assist in the development of internal quality standards manual for factories/ millers (expert to consult)	22,000				
		Training of small and medium scale millers on SOP’s, food safety and QA/QC practices	36000				
5	Training package for food fortification workers and stakeholders	Involve training institutions in the development of modules for training staff					
		Market assessment for best food science curriculum (to be done the formative research stage)	10000				
Total			**192500**	**70000**	**91000**	**43000**	**67000**

SO4: Consumer Awareness and Behavior Change, Consumption Monitoring and Quality Enhancement			Years & Cost (USD)				
No.	Outcome	Actions	2019	2020	2021	2022	2023
1	High consumption of fortified food across the country	Collaborate with implementers on current behavioral change strategy in Somalia (Social mobilization, advocacy and communication strategy (2019-2021)					
		Develop and review existing IEC materials to incorporate food fortification	36000				
		Disseminate the IEC materials and consumer awareness strategies across the county	72000				
		Identify and train champions to promote culture of consumption of fortified foods	30000	24000	24000	24000	24000
		Hold advocacy and awareness creation meeting with consumer associations (5 states)	72000	72000	72000	72000	72000
		Support periodic media broadcast of messages on importance of fortified food	27000	27000	27000	27000	27000
2	Change of behavior, embrace and ownership of fortification program by consumers	Strengthen behavior change interventions based on formative research on consumer and household preferences, needs and barriers to changing behaviors.(use media and food fortification champions)					
		Collaborative and sensitization meetings (with public, politicians,) (community members and marginalized groups)	120000	60000	60000		
		Identify and train community volunteers and community champions	39000	39000			
3	Regular assessment and surveillance on consumption of fortified food	Monthly data collection and documentation(SUN Secretariat)					
		Revise and update the DHS indicators to include FF indicators	16000				
		Strengthen monitoring and reporting system in the community.					
4	Timely and accurate analysis of consumption patterns of fortified food	Conduct quarterly analysis of reports of monitoring, testing and food fortification in the database	12000	12000	12000	12000	12000
		Allocate funds and plan for continuous oversight, monitoring of FF (Staffing)	20000	20000	20000	20000	20000
		2 year review of the FF implementation progress		24000			
5	Continuous research on areas that need improvement	Identify key areas that need research and carry out formative or operational research to improve food fortification(SUN Secretariat)					
		Engage appropriate and qualified institutions to conduct research and analysis	20000	20000	20000	20000	20000
6	Regular improvement of quality in fortified food	Establish performance indicators and system strengthening. (stakeholder workshop) (Review)	2000	2000	20000	20000	20000
		Use information from continuous research to strategize on better quality of fortified food (meeting to discuss above activity)	12000	12000	12000	12000	12000
Total			**496000**	**330000**	**267000**	**207000**	**207000**