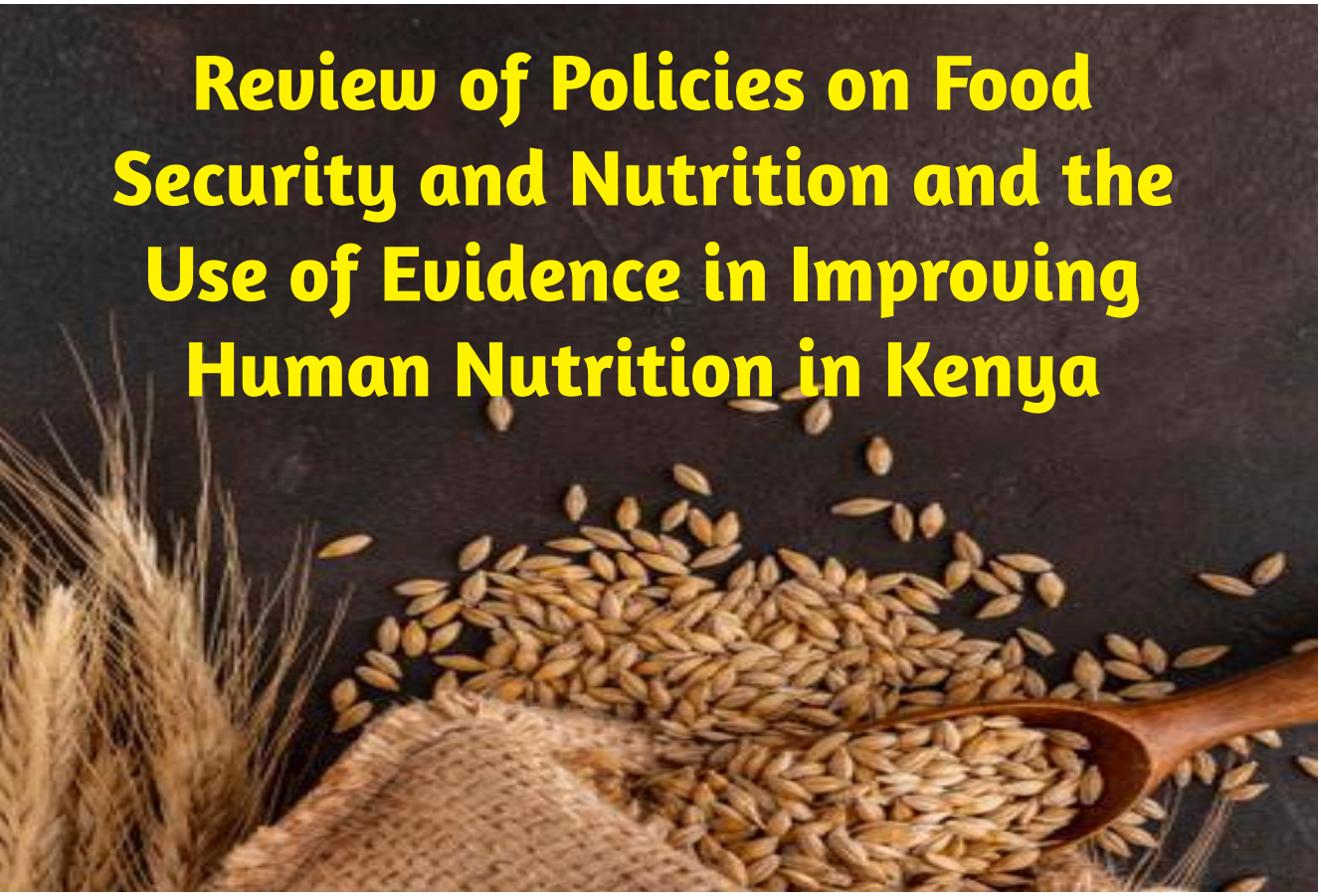
REPUBLIC OF KENYA

NIPFN
National Information Platform for Food Security and Nutrition

Review of Policies on Food Security and Nutrition and the Use of Evidence in Improving Human Nutrition in Kenya



MARCH 2021

Foreign, Commonwealth & Development Office

BILL & MELINDA GATES foundation



Review of Policies on Food Security And Nutrition and the use of Evidence in Improving Human Nutrition in Kenya

2021





Foreign, Commonwealth
& Development Office

BILL & MELINDA GATES *foundation*

This study and report was produced by the National Information Platform for Food Security and Nutrition (NIPFN) project team operating under the Kenya National Bureau of Statistics (KNBS) and the Kenya Institute of Public Policy Research and Analysis (KIPPRA).

This report was produced with the financial support from the European Union. The views expressed in this report are those of the authors and do not necessarily represent the views of European Union.

Copyright

© 2020 KIPPRA

All rights reserved. No part of this publication may be reproduced, stored in any retrieval system or transmitted in any form or by any means electronically or oth-erwise without prior approval by the Kenya Institute for Public Policy Research and Analysis.

Contents

Definition of terms ..... **iv**

Acronyms ..... **v**

Foreword **vi**

Executive Summary ..... **vii**

1 Introduction **1**

2 Methodology **2**

3 Status of Food Security and Nutrition **5**

3.1 Overall trend in nutrition indicators 5

3.2 Distribution rural versus urban and across counties 6

3.3 Distribution across age groups 7

3.4 Evidence on relationships that influence nutrition levels 9

4 Food security and nutrition policy issues and gaps **10**

4.1 Food production and availability 10

4.1.1 Food production 1

4.1.2 Food availability 13

4.1.3 Policy gaps in food production and availability 14

4.2 Access to Food 15

4.2.1 Policy environment with access to food 15

4.2.2 Policy gaps in access to food 17

4.3. Food Safety Standards and Quality Control 17

4.3.1 Food safety standards and quality issues addressed by policy 17

4.3.2 Policy gaps 19

4.4 Nutrition awareness, promotion, improvement, and environment 19
4.4.1 Nutrition awareness 19
4.4.2 Nutrition promotion 20
4.4.3 Nutrition improvement 20
4.4.4 Nutrition and environment 21
4.4.5 Policy gaps 22
4.5 Vulnerable Groups 22
4.5.1 Policy gaps 23
4.6 Coordination 24
4.6.1 Coordination issues addressed by policy 24

5 Conclusion and recommendations 26
5.1 Conclusion 26
5.2 Recommendations 28

References 30

APENDIX I: template for review of policies on food security and nutrition 32

List of Tables

Table 2.1: Scope of coverage of the policy framework 4
Table 3.1: Targets on nutrition indicators and country achievements 6
Table 3.2: Overall County stunting rate distribution in rural versus urban areas 7
Table 3.3: Distribution of undernutrition among age groups in 2015 8
Table 3.4: Stunting distribution in percentage of children 6-59 months 9
Table 4.1: Chronology of food production and availability policies 12

Definition of terms

Food security is achieved when all people at all times have physical and economic access to adequate or sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

Malnutrition is a state in which the physical function of an individual is impaired to the point where he/she can no longer maintain adequate bodily performance processes such as growth, pregnancy, lactation, physical work and resisting and recovering from disease.

Stunting is the impaired growth and development that children experience from poor nutrition, repeated infection and inadequate psychosocial stimulation.

Nutrition is the science that interprets the nutrients and other substances in food in relation to maintenance, growth, reproduction, health and disease of an organism.

Evidence refers to a state where users of nutrition outputs consider credibility of analyses that are communicated to inform nutrition interventions by policy /program implementers for nutrition improvement.

Policy is a deliberate system of principles based on government mandate to guide decisions and actions in the achievement of rational outcomes.

Acronyms

NIPFN	National Information Platform for Food and Nutrition
CAADP	Comprehensive Africa Agriculture Development Program
NIPN	National Information Platform for Nutrition
SDGs	Sustainable Development Goals
UNICEF	United Nations Children Emergency Fund
KIPPRA	Kenya Institute for Public Policy Research and Analysis
KNBS	Kenya National Bureau of Statistics
EAGC	East Africa Grain Council
EAC	East African Community
FBSs	Food Balance Sheets
GDP	Gross Domestic Products
NCDs	Non -Communicable Diseases
UHC	Universal Health Coverage
ASAL	Arid and semi- arid Lands
NARIGP	National Agricultural and Rural Inclusion Growth Project
KCSAP	Kenya Smart Agriculture Project
SIVAP	Small scale Irrigation and Value Project
RLACC	Rural Livelihoods Adaptation to Climate Change
COMESA	Common Markets for Eastern Southern Africa
NCPB	National Cereals and Produce Board
MTPs	Medium Term Plans
KRMNCAH	Kenya Reproductive Maternal Newborn Child Adolescent Health
CIDP	County Integrated Development plans
NFNSIF	National Food and Nutrition Security Implementation Framework
NFSNP	National Food Security and Nutrition Policy
HACCP	Hazard Analysis Critical Control Points
KEBS	Kenya Bureau of Standards
NNAP	National Nutrition Action Plan
OSBPs	One Stop Border Posts
ICD	Inland Container Depot
ICN 2	International Conference on Nutrition 2

Foreword

Kenya is a signatory to several nutrition related global agreements and mechanisms that include the World Health Assembly 2025 nutrition targets, Scaling up Nutrition, Sustainable Development Goals, the United Nations (UN) Decade for Action of Nutrition 2016-25 and the ICN 2 Declaration and Plan of Action. Article 43 of the Constitution of Kenya assures the right to the highest attainable standard of health, freedom from hunger and access to adequate quality food.

In realizing this, the government has enacted various policies and legislative frameworks for coordinated implementation of nutrition interventions. The National Food Security and Nutrition Policy 2011 is the overarching framework for multi sector interventions. The National Food Security and Nutrition Implementation Framework 2017-22 provides for synergised implementation of activities. In addition, the Kenya National Nutrition Action Plan 2018-22 provides a roadmap nationally and the counties are expected to develop County Nutrition Action Plans to guide interventions in all sectors influencing nutrition. Many other policies in sectors influencing nutrition have been put in place. Despite these efforts the prevalence of undernutrition, micronutrient deficiencies, is high.

This review of policies finds gaps in implementation of policies on food production and availability as there are inadequate facilities to adequately pre-process and store produce. Further, is inadequate access to food due to insufficient resources to obtain food for the low income rural households and urban informal settings households. Most food is produced in informal settings that do not have structured quality assurance systems to ensure safety of consumers. The technical officers with quality assurance roles including nutritionists and dieticians, agricultural extension officers and public health officers are inadequate. Nutrition awareness, promotion, improvement and nutrition environment cannot be attained unless there are adequate technical staff to undertake nutrition education awareness and communication. Inadequate coordination in convening of meetings for progressive evaluation of interventions made by sectors hampers nutrition improvement.

In accelerating progress to curb malnutrition, synergised multisector interventions are necessary to address the socio determinants of malnutrition. This calls for increased budgetary allocations and investments to increase production and facilitate access to safe water and basic sanitation, and engagement of adequate workforce in the nutrition sector and other sectors with roles in food safety assurance to promote nutrition for improved health. It is in this perspective that multi sector and multistakeholder dialogue is provided for through the National Information Platform for Food Security and Nutrition (NIPFN) to synergize nutrition interventions and inform decision making for sustainable nutrition improvement.



Dr. Rose Ngugi

Executive Director

KIPPRA

Executive Summary

The National Information Platform for Food Security and Nutrition (NIPFN) is aimed to strengthen nutrition information systems for availability of data that can be generate evidence to inform nutrition interventions. In this regard, a review of policies was undertaken to identify gaps in food security and nutrition with the objective to refine nutrition interventions for better outcomes and strengthening coordination of multi sector actions for nutrition improvement. A desk review of 48 policies, and 14 legislative and 7 regulatory frameworks on food security and nutrition was done covering from 1980s to the current period. A framework was developed and used guide the thematic areas of- food production and availability, food access, food standards quality control and safety, nutrition awareness, improvement and environment, vulnerable groups and coordination.

There are policies in place to promote food production and availability through enhanced research and development of hybrid varieties of crops, livestock and fish to increase production. This has seen inclusion of nutrition commodities inclusion in essential supplies by ministry of health in promotion and consistent implementation of interventions. The Agri Nutrition Implementation Strategy provides for coordinated implementation of nutrition sensitive interventions. There have been initiatives of availing of good quality farm inputs at affordable prices with a view of incentivizing farmers to increase production. Policies on production are not specific in addressing food losses in the value chain through provision of storage, and preservation facilities. This affects stability in the supply thus leading to increased market prices of food.

The review of policies on access to food revealed inadequate access to food by households due to insufficient resources to obtain food especially in urban areas where people have to purchase food. Most of the time, people living in urban areas rely on markets for food while in rural areas poverty in households is a deterrent to food access. Improvement of on and off-farm employment with a view of generation of income for households to meet basic needs like purchase of food is necessary. For enhanced access, stability in the supply is important and can be attainable by setting food strategic reserves and maintaining prices through waiver of import duties when there are shortages of classified strategic food items.

The safety of food is critical as it determines the utilization by the body for nutrition improvement. At production level, plant health inspectorate services are available that are complemented by public health measures in ensuring food is not grown in polluted environments. The food is inspected to ensure its safety for consumption. At the industry, there are internal quality assurance mechanisms that are complemented by inspections and testing to ensure produce complies with national and international standards. There is continuous monitoring of food by market surveillance and periodic sampling is done for testing though the capacities of the workforce are inadequate. At household level, there are no structures for community engagement for dissemination of food safety measures to avoid introduction of hazards and contaminants to food. Measures are put in place at Points of Entry, airports, seaports, One Stop Border Posts to regulate imports of foods that include infant foods and premixes and breast milk substitutes. Inspection of food need to be strengthened by increasing nutritionists and dieticians, and public health officers to ensure early detection of hazards for safe foods and nutrition improvement.

Nutrition awareness, promotion, improvement and nutrition environment requires strengthening for sustained nutrition improvement. Scaled up nutrition education provides for awareness that can impact behavior in the adoption of positive health dietary practices that promote nutrition. There was limited access to fortified foods for the rural and urban poor households in informal settings. Initiatives of fortification targeting small scale millers and at household levels envisage increasing access to fortified foods. There is no nutrition specific

communication strategy for visibility and dissemination of nutrition interventions. There is inadequate financing of advocacy communication and social mobilization in designing of nutrition specific education messages for vulnerable groups including food fortification messages developed that are not communicated for public consumption through the media.

Counties are at different levels of development with inadequate supporting infrastructure for vulnerable groups to participate in food production and facilitating their access to foods. Improved access to food by people with disability particularly during emergencies like the current covid -19 pandemic require a risk management component integrated into service delivery. Vulnerable groups that include children, women, rural and peri-urban poor, and orphans are likely to suffer adverse effects in the event of food insecurity and the effects are worse in the event of a disaster like the current covid-19 pandemic. Policies have provided for social safety nets with a view of cushioning the vulnerable from consequences of food insecurity and thus be able to buy foods using the money given.

The National Food and Nutrition Security Policy provides an overarching framework for coordinated implementation of nutrition interventions and investments. Coordination as a governance function determines the synergized operation of the other interconnected components of nutrition interventions for better outcomes. The nutrition sensitive focus is on linkage with sectors that influence nutrition including scaling up nutrition in agriculture and food security, strengthening nutrition in health sector strengthened, promoting nutrition in education and early childhood development, Water, Sanitation and Hygiene (WASH) and social protection. In addition is the strengthening of nutrition enabling environment for advocacy, social mobilization and communication, capacity development, research and learning and governance and increasing visibility of nutrition interventions through dialogue using existing data and information in developing as well as refining policies and programs.

1 Introduction

Policies developed have contributed to the nutrition progress made by Kenya being among 8 countries globally that met 4 of the WHA targets. Despite this progress, the Global Nutrition Report (2020) estimated greatest levels of disparity in wasting in Kenya among other countries. A review of the policy environment was to identify gaps on food security and nutrition policies with the objective of refining nutrition interventions for better outcomes and strengthening coordination of multi sector actions for nutrition improvement. The review captured policies from 1980s to the current with the view of how malnutrition was addressed, and programmatic interventions prioritized for nutrition improvement. A framework was developed and used for review on thematic areas of food production and availability, food access, food standards quality control and safety, nutrition awareness ,promotion, improvement and environment, vulnerable groups and coordination.

Nationally and at counties, there has not been consistent tracking of prevalence on undernutrition. Anthropometric analysis reflects a vicious cycle of poverty with micronutrient deficiencies in reproductive age women that is passed in giving birth to low birth weight children. Trends analysis performance in reduction of stunting based on national average is carried out to aid prediction of sustainability in attainment of global nutrition targets. Further examination of the association of poverty with stunting would help address the factors that need to be fixed to realize reduction of nutrition indicators.

National Information Platform for Food Security and Nutrition (NIPFN) links policies and programs through availability of data to monitor progress in nutrition interventions and using available information for prioritization of nutrition interventions. This coordinated approach would ensure access to safe nutrition commodities for nutrition improvement. Initiatives of visibility has led to Scaling Up Nutrition Civil Society Alliance mobilizing 44 organizations at national and 30 at county level to join the networks advocating for nutrition.

Evidence from studies indicate the need of multi sector approach in addressing malnutrition for sustainable development. The National Information Nutrition Platform for Food and Nutrition (NIPFN) is aimed to provide a data repository for nutrition investments to enhance coordinated multi-sector approach to implementation of nutrition specific and nutrition sensitive interventions. The monitoring and evaluation of program interventions as provided in the sectoral policies provides linkage to the nutrition information platform for monitoring of progress of national nutrition indicators .Data analyzed would inform dialogue by policy makers and program managers to embrace evidence-based decision making in nutrition interventions and investments for sustainability.

2 Methodology

The review was to identify gaps on food security and nutrition policies with the objective of refining nutrition interventions for better outcomes and strengthening coordination of multi sector actions for nutrition improvement. A desk review of 48 policies, and 14 legislative and 7 regulatory frameworks on food security and nutrition was undertaken. A framework was developed (annex 1) and used for review. The thematic areas covered include - food production and availability, food access, food standards quality control and safety, nutrition awareness, improvement and environment, vulnerable groups and coordination.

Content analysis and examination of linkages was done by examining planned activities implemented on nutrition interventions to meet nutrition targets. Using NIPFN approach, policies in the prioritized sectors of health, agriculture, livestock, fisheries and cooperatives, water sanitation and irrigation, education, social protection, treasury, planning and Arid and semi-arid lands were reviewed. Programmes, studies and surveys undertaken on nutrition trends informed the review on possible areas prioritized by policy makers and programme implementers. Secondary data from Kenya Integrated Household Budget Survey was analyzed to inform on anthropometric measurements e.g. stunting which are nutrition outcomes at individual levels. Anthropometric indicators measured nutrition outcomes to have a view of trends over time.

The review considered dimensions of availability, access, stability and utilization of food. Regulatory frameworks were examined on how they ensured access to safe and quality foods through the value chain. Also considered was legislative frameworks provision for quality and nutritious foods reaching the markets. The content was examined for evidence in addressing nutrition interventions through institutionalized capacity building of nutrition managers and program implementers. Also, examined were the capacity building plans for monitoring and evaluation for progressive improvement of nutrition indicators.

Food security is influenced by financial, physical and social access to food as distinct from its availability. Nutrition outcomes are influenced by aspects beyond availability and access to food, these being prerequisites for nutrition security. Food security is sustainable access to safe food of sufficient quality and quantity of energy, protein and micronutrients for adequate intake and a healthy life for all members of the family. Reliable access to food in sufficient quantity and quality at household and individual level require urban households to have sufficient money to buy food from the market while rural households require productive resources and accessible markets ,labor and tools and an income to buy diverse foods that they do not produce. Food quality, safety and standards are critical for food need to be safe for utility by individuals. Nutrition and environment require prerequisites of a sanitary environment, adequate health services and knowledge on nutrition and care for all household members by proper nutrition for a healthy life.

Nutrition improvement efforts need to be consistent as agricultural productivity varies with seasonality thus requiring innovation to enhancing keeping quality of food. Vulnerable groups

are considered by governance in promoting access to foods. Coordination provides for collaboration for synergized nutrition interventions. Table 2.1 summarizes the scope of the policy framework.

Table 2.1: Scope of coverage of the policy framework

Period	**Policy Documents**	**Legislative Framework**	**Regulatory Framework**	**Institutions**	**Programmes**
1981	Sessional Paper No.4 of 1981 on National Food policy. Kenya First National Food Policy	Agriculture Act	Agriculture regulations	Agriculture	Small scale farming increasing productivity
1994	Sessional Paper No. 2 of 1994 on Kenya second National Food policy)	Agriculture Act	Agriculture regulations	Agriculture	Improved seed and animals and technology in production initiatives
2004	Strategy for revitalizing Agriculture (SRA) 2004	Agriculture Act	Agriculture development regulations	Agriculture	kitchen gardens initiative
2008	National Livestock policy,2008	Livestock Act	Livestock regulations	agriculture	Improved breeding, disease free zones
2008	National Oceans and Fisheries Policy ,2008	Fisheries Act 2012	Fisheries quality regulations	Agriculture	Economic stimulus eat fish &farming
2011	Kenya National Food and Nutrition Security Policy 2011	Health Act 2017	National Nutrition Action Plan 2018-2022	Health, agriculture	Vitamin supplementation
2011	Kenya National Social Protection Policy,2011	The Children Act 2001	Child protection framework	Social protection	Expanded school feeding, Njaa Marufuku Kenya program
2012	The National Agricultural Sector Extension Policy (NASEP)2012	Agriculture Act	Dairy industry regulations	Agriculture	Improved breeds production
2012	Implementation Framework for securing breastfeeding friendly environment	Breast milk substitutes Act,2012	Marketing and distribution of Breast milk substitutes (Control regulations)	health	Point of use fortification training manuals, biofortification

2013	National Maternal, Infant and Young Child Nutrition Policy ,2013	Health Act	Implementation Framework for securing a breast-feeding friendly environment at the workplaces 2020-2024	health	Vitamin A Supplementation and Micronutrient Deficiency Control
2014	Kenya Health Policy 2014-2030	Health Act,2017	Kenya Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCAH) Investment Framework,2016	Education, health, agriculture, social services	Expanded school feeding, Njaa Marufuku Kenya program
2017	ECD National Pre-Primary Education Policy 2017	Education Act,2016	Kenya policy Framework for Education,2012	education	Home grown feeding program
2017	Food nutrition security policy implementation framework 2017-22	Health Act,2017	Kenya National Nutrition Action Plan 2018-2022	health	Beyond Zero First Lady Initiative

3 Status of Food Security and Nutrition

3.1 Overall trend in nutrition indicators

Kenya has committed to improve on nutrition indicators as set out in the World Health Assembly 2025. The target is to reduce the prevalence of stunting of under 5 children by 40 percent, increase rate of exclusive breastfeeding in first 6 months by 20 percent and above, reduce anemia in women of reproductive age by 30 percent and maintain childhood wasting at less than 4 percent and no increase in child overweight/obesity. These targets are set with prediction that if the nutrition indicators are reduced by an estimated average rate and all conditions maintained, results achieved would near attaining the global targets. In the KDHS 2014, Kenya recorded significant progress in reducing prevalence of stunting, underweight and wasting from 35,16,7 to 26,11, 4 respectively for the period 2009-2014 but overweight and obesity was on the increase. There were increased rates of exclusive breastfeeding and improvement of micronutrient status of children 6-59 months. Nutritional status of women of reproductive age showed increase of overweight or obesity. Comparing 2009 and 2014, the proportion of thin women with Body Mass Index (BMI) below 18.5 declined from 12 percent to 9 percent. Body mass index is an indicator of state of nutrition and those below 18.5 are not well nourished for productive and healthy lives. Table 3.1 shows targets on nutrition indicators and country achievements.

Table 3.1: Targets on nutrition indicators and country achievements

	Targets by 2014	Targets in SDGs	World health Assembly by 2025	decade before MDGs 1990	2000 (beginning of MDGs	KNAP 2022	2015 (beginning of SDGs	KHIBS 2016
Reduce stunting child 0-59 months by 40%	26	26	17	39	35.3	17	26	26.7
Prevalence of anemia women 15-49 yrs	27	27	17	33	29	17	27	nc
Prevalence low birth weight of <2.5 kg	8	8	5	5	5	5	8	nc
Prevalence obesity (W/A >2SD) child 0-59 mths	<4	<4	4	11	9	<4	<4	nc
Prevalence exclusive b / feeding 0-6 mths %	50	61	82	10	13	75	56	nc
Wasting prevalence 0-59 mths(<2SD)	4	7	<4	11	7	<4	<4	6.5

Note: *nc -not computed

3.2 Distribution rural versus urban and across counties

The Kenya Integrated Household Budget Survey (2015) revealed that 29.3 percent of stunted children live in rural while 20.9 percent live in urban areas. KDHS 2014 reported stunting to be at 26 percent nationally with variations across counties. There were disparities across counties with some having stunting more than twice the national average. Among the 21 counties with stunting rate above the national average are Bomet, Bungoma, Meru and Tharaka Nithi that receive rains for agricultural production while 26 counties have stunting below the national average.

Distribution across counties is influenced by state of food security of households, care practices and socio-cultural factors. For example, most areas that do not produce their own food are food insecure and households that do not have adequate income to buy diverse foods are inadequately nourished.There are efforts to increase access to fortified foods in the rural and informal urban settings where incomes of households are low with the view of bioavailability of micronutrients for nutrition improvement. Table 3.2 shows stunting distribution overall and rural versus urban areas.

Table 3.2: Overall County stunting rate distribution in rural versus urban areas

County stunting	Rural	Urban	Total	County stunting	Rural	Urban	Total
Baringo	25.8	2.5	28.3	Marsabit	29.6	6.8	36.4
Bomet	27.3	2.1	29.4	Meru	33.7	1.1	34.8
Bungoma	28.9	2.6	31.5	Migori	23.3	1.9	25.2
Busia	23.0	2.2	25.2	Mombasa	0.0	19.7	19.7
E/Marakwet	25.4	4.1	29.5	Muranga	16.3	0.2	16.5
Embu	24.7	3.7	28.4	Nairobi	0.0	22.8	22.8
Garissa	6.4	4.2	10.6	Nakuru	19.9	6.2	26.1
Homa bay	26.3	4.9	31.2	Nandi	24.5	2.3	26.8
Isiolo	9.8	11.5	21.3	Narok	33.5	1.8	35.3
Kajiado	15.5	9.2	24.7	Nyamira	13.8	2.8	16.6
Kakamega	22.8	1.8	24.6	Nyandarua	31.8	5.1	36.9
Kericho	17.4	7.5	24.9	Nyeri	14.4	5.2	19.7
Kiambu	7.8	14.4	22.2	Samburu	25.8	5.3	31.1
Kilifi	18.9	9.0	27.9	Siaya	22.9	2.1	25.0
Kirinyaga	20.8	4.6	25.4	T/Taveta	19.2	5.4	24.6
Kisii	22.9	3.4	26.3	T/River	18.8	4.5	23.2
Kisumu	8.6	10.0	18.6	T/Nithi	26.9	3.9	30.8
Kitui	26.8	1.8	28.6	T/Nzoia	29.9	3.2	33.1
Kwale	25.5	4.8	30.3	Turkana	14.4	5.6	20
Laikipia	28.0	1.6	29.6	Uasin Gishu	14.0	5.6	19.6
Lamu	21.5	3.8	25.3	Vihiga	14.5	5.9	20.4
Machakos	13.5	17.8	31.3	Wajir	18.0	3.6	21.6
Makueni	21.0	1.4	22.4	West Pokot	33.7	2.6	36.3
Mandera	36.3	6.9	43.2				

Source: KIHBS 2015

3.3 Distribution across age groups

Distribution across age groups shows that increasing stunting levels after 24 months when children do not benefit from breast feeding. Children in the age groups of 6-11,12-17,18-23 months are the most affected with stunting with disparities across counties. Further, the prevalence of stunting in boys is higher at 30 percent compared to girls that was at 22 percent. Different age groups have different malnutrition outcomes and the nutrition action plans have specified actions for these high-risk groups.

Table 3.3: Distribution of undernutrition among age groups in 2015

Stunting	Wasting	Underweight	Stunting
6-11	6.8	6.4	15.4
12-17	8.7	9.5	32.1
18-23	4.7	10.8	36.7
24-35	5.6	13.0	31.9
36-47	6.6	13.0	24.7
48-59	6.8	13.4	20.9
National average	6.5	11.8	26.7

Kenya Integrated Household Budget Survey,2015

There are significant disparities from the mean across the counties in the age groups of 6-11 months with higher percentage of stunting reported in Kirinyaga (16.7),Tharaka Nithi(14.3),Lamu (15.7)Nairobi (13.0) and Kajiado (12.1) .Table 3.4 shows stunting distribution among age groups.

Table 3.4: Stunting distribution in percentage of children 6-59 months

County stunting/ Age (months)	6-11	12-17	18-23	24-35	36-47	48-59	County stunting/ Age (months)	6-11	12-17	18-23	24-35	36-47	48-59
Baringo	1.6	7.8	8.0	31.1	36.4	15.1	Marsabit	5.0	9.0	9.0	39.2	21.8	16.0
Bomet	7.3	8.3	10.6	23.1	24.8	26.0	Meru	7.0	18.1	5.9	28.2	16.5	24.4
Bungoma	4.5	9.2	25.4	23.5	27.5	9.9	Migori	9.7	32.4	18.9	15.2	16.0	7.2
Busia	6.2	7.9	20.1	36.2	19.8	9.9	Mombasa	0.0	0.0	29.2	31.7	19.1	20.1
E/Marakwet	7.0	7.7	23.8	20.5	21	19.9	Muranga	11.3	21.5	5.0	24.7	27.0	10.4
Embu	6.5	19.4	3.2	33.6	25.1	12.1	Nairobi	13.3	5.8	9.0	22.0	39.2	10.6
Garissa	5.6	3.8	10.7	26.2	32.5	21.2	Nakuru	4.1	19.9	12.0	26.0	11.8	26.2
Homa-bay	9.0	7.1	16.6	24.9	19.7	22.7	Nandi	3.3	4.7	17.9	35.3	22.0	16.9
Isiolo	10.3	11.1	11.2	26.6	24.3	8.5	Narok	3.1	13.6	12.3	31.5	20.4	19.2
Kajiado	12.1	3.4	19.8	19.4	32.7	12.7	Nyamira	9.8	20.9	30.0	18.9	12.6	7.8
Kakamega	1.8	12.2	8.8	31.0	24.9	21.4	Nyandarua	8.2	20.1	18.6	21.5	19.8	11.8
Kericho	2.0	7.6	12.2	29.2	28.4	20.6	Nyeri	0.0	15.4	0.0	36.0	13.8	34.8
Kiambu	0.0	12.2	32.7	16.4	26.2	12.4	Samburu	5.4	13.5	7.6	40.1	12.4	21.0
Kilifi	0.0	12.4	14.9	31.9	19.6	21.2	Siaya	5.4	12.2	24.1	20.7	22.0	15.5
Kirinyaga	16.7	34.9	13.3	14.7	19.2	1.3	Taita Taveta	9.3	7.9	16.4	30.0	20.2	16.2
Kisii	11.8	23.8	7.7	19.6	20.3	16.8	Tana River	3.1	12.9	5.2	30.1	26.9	21.9
Kisumu	0.0	5.4	3.4	29.2	41.4	20.7	TharakaNithi	14.3	7.2	20.0	18.0	17.2	23.4
Kitui	4.0	30.8	18.8	18.9	13.2	14.3	Trans-Nzoia	5.2	6.6	14.8	35.9	17.3	20.2
Kwale	9.1	15.4	20.9	23.6	17.4	13.6	Turkana	7.3	12.1	17.6	24.4	24.2	14.4
Laikipia	0.0	10.5	11.6	13.4	30.0	34.6	Uasin Gishu	11.9	20.0	25.3	17.1	11.5	14..2
Lamu	15.7	20.1	10.5	27.0	17.5	9.3	Vihiga	1.3	22.2	10.8	27.2	14.5	24.0
Machakos	0.0	9.8	41.0	16.8	19.1	13.4	Wajir	4.4	20.5	8.9	24.4	26.1	15.6
Makueni	3.0	11.8	5.7	19.1	6.7	31.8	West Pokot	3.7	16.4	11.1	36.1	21.8	10.9
Mandera	0.8	12.3	4.5	32.8	21.8	27.9							

Source: Kenya Integrated Household Budget Survey,2015

3.4 Evidence on relationships that influence nutrition levels

It is important to understand the immediate determinants of young child nutrition to come up with intervention in improving dietary intake and health status. For example, the UNICEF (1990) framework on undernutrition explains the relationship between immediate and underlying determinants of child undernutrition. The interplay between immediate causes of malnutrition that include inadequate dietary intake and illness creates a vicious cycle. A malnourished child with compromised resistance to illness gets sick worsening the malnutrition. Infections cause loss of appetite and malabsorption and metabolic and behavioural changes. The framework has been revised to include maternal child health as a determinant of the nutrition state of the child in consideration of the first 1000 days from conception to age 2 that determines health of the child.

Further, FAO (2012) emphasises that to achieve nutrition security, one needs to have access to appropriate care giving practices, hygienic environments and adequate health care services, in addition to a diet that meets nutritional needs for a healthy and active life. Insanitary environments may expose children to repeated infections leading to poor absorption or utilization of the nutrients consumed. The determinants of undernutrition are socio cultural factors that shape how communities accept and utilize foods that culturally may be prohibited to specific groups of people, yet they are the ones available locally. The availability of diverse foods from the different food groups also influence the choice of foods consumed by households as well as the income levels of households.

In a study Kabubo-Mariara et. al., (2009) found that reducing undernutrition of under 5 children to attain Millennium Development Goals target from 28 percent in 2003 to 16.2 percent in 2015 required policies and strategies for poverty alleviation, promotion of presecondary education for women and provision of basic preventive health care. In a review of key infectious diseases associated with sanitation as nutrition and wellbeing outcomes study by World Health Organization and UNICEF(2019), there is evidence of a protective effect of sanitation on infectious diseases and nutrition outcomes and suggests greater impacts when the entire community coverage of sanitation is attained. Preventive health care of deworming of children under 1 year was found to be protective of undernutrition. Shally A. et. al., (2008) found substantial weight gain among children who were dewormed. This is due to nematodes effect on absorption of micro and macro nutrients that are vital for growth. Also important is nutrition awareness that the frequency and continuity of breastfeeding need to be 8-12 times per day for healthy growth. Children breastfed up to 2 years have faster linear growth than those whose breastfeeding is stopped earlier. This underscores the significance accorded to breastfeeding by policy in the provision of workplace lactating stations.

Studies have been done to help understand the factors that drive malnutrition, and these have been picked by policy in terms of targeted high impact nutrition interventions to reduce the inequities in malnutrition across regions. Strengthening the thematic areas identified in this review would ensure available and accessible food for nutrition improvement. Evidence not taken up for adequate investment on access to safe water and sanitation owing to their significant contribution on how individuals are able to access quality food that is safe for nutrition improvement.

4 Food security and nutrition policy issues and gaps

Food security can be attained by ensuring national availability of food that can be accessed by households for nourishment. Food production and availability initiatives require adequate budgets to provide infrastructure including preservation facilities that would reduce post-harvest losses. Further, small holder farmers access to farm inputs and scaling up of value addition through pre-processing food will enable better prices to improve household incomes.

4.1 Food production and availability

4.1.1 Food production

Food production is the ability to generate food from animal rearing, fishing and cultivated crops. Overtime, the government has put in place policy framework to ensure there is adequate production of food. The key issues include; enhancing production in agriculture sector, providing for access to inputs, enhancing investments, improving management of livestock, and marketing of agriculture produce.

Production does not equal demand hence food sufficiency is not yet attained. There are deficits for example in cereals, maize rice, wheat, fruits among other foods. In the mid-1990s, imports of wheat exceeded domestic production for the first time. Imports of wheat have increased from close to zero in the late 1960s to 1998.9 metric tonnes in 2019. In 2019, productivity of the following foods increased: bananas to 4 million tonnes, irish potatoes to 2.9 million metric tonnes and cowmilk to 5.2 billion litres. The production of 39.8 million bags of maize and 320,000 tonnes of wheat did not meet the demand of local consumption. Rice production was 160.6 metric tonnes with imports of 612 metric tonnes. Maize and legumes have estimated yield gaps of 50 and 70 percent respectively. Per capita food supply declined for sorghum and products, sugar crops, milk and milk products, egg and egg products, fruits, vegetables, groundnuts and nut products. Production of fruits that include, mango, passion fruits, tomato also reduced.

Incentivizing young people to engage in agricultural production has been a strategy to promote production. Youth and women have barriers to venture into agriculture due to their low access to land and capital. Increased access by youth and women to low interest loans and credit facilities envisages empowerment for participation in production. In addition, initiatives of promoting small holder farming with incentives on access to farm inputs and better marketing strategies has structural operationalization challenges. Further, introduction of fruits in forest areas as part of the forest cover trees to enhance production and availability of fruits is an innovation by government for increasing access to nutritious foods. Upscaling this is expected to fill the gap occasioned by inadequate supplies of fruits leading to high market prices.

Policies on gender mainstreaming in agriculture have objective of empowering women, youth and boys and girls by increased awareness and promotion of their participation in agricultural

production. In evaluating the Agriculture Sector Development Strategy (ASDS) implementation, the Household Asset Index increased for women, youth and vulnerable groups. This providing more access to production factors like land and credit facilities and participation particularly of youth and women for increased production. Table 4.1 summarises policies promoting food production and availability.

Table 4.1: Chronology of food production and availability policies

Policy	Objectives	Expected outcome
Sessional Paper No.4 of 1981 on National Food policy. Kenya First National Food Policy	To maintain broad self -sufficiency in major foodstuffs and equitable distribution of food of national value to all citizens.	Increased production and availability
Sessional Paper No. 2 of 1994 on Kenya second National Food policy) Recovery and sustainable Development to the year 2010	Promote market driven approach of agriculture, market access of inputs	Increased production with access to inputs
Strategy for revitalizing Agriculture (SRA) 2004	To increase infrastructure and institutional support to promote sector growth	Improved agriculture performance into large scale mechanized for increased production
National Livestock policy, 2008	To promote emergency livestock off take, strengthen and institutionalize early warning systems and mitigate effects of all disasters that affect livestock	Improved management of livestock for increased production
Kenya National Food Security and Nutrition Policy, 2011	Focus on life cycle approach to nutrition improvement	Multi sector nutrition interventions including actions of hunger eradication and improved nutrition
Health Policy 2014-2030	Right to access adequate nutritious safe food and healthy life to be free from hunger, provision of structures for safe food	Defines structures for improved nutrition and food safety throughout life course, for access to safe quality food such as right of child to access basic nutrition and health care,
Agriculture Sector Development Strategy, 2010-2020	To enhance access to farm inputs, storage facilities, cooperatives for value addition, better prices for produce	Streamline agricultural institutions, training and research for service to farmers. Producers, processors marketers employ technology, shift from subsistence to market-oriented production
National Agriculture Investment Plan 2019-2024	To promote commercial and modern agricultural sector that sustainably support economic development in the context of devolution	Coordinated implementation of agriculture investments

Food production issues in policy are explained below under production technology and inputs, and price stability and marketing .

i) Production technology and inputs

Policy frameworks have supported increased access to production enablers that include farm inputs and hybrid quality seed that are accessible with quality assured to prevent pest and disease management through research to promote production. Use of modern technology and innovation would contribute to efficiency in agricultural production. Equally in livestock sector, high and improved breeds of animals are availed through continuous research and breeding.

Small holder farmers produce an estimated 73 percent of food. This is produced by 70 percent of household living in rural areas. The small holder farms increased from 2.22 million to 7.63 million in 2015/16. Farms that were 10-hectares and above reduced from 92498 to 6714 making agricultural intensification the option for sustainable food production.

Policies have not had focus of promoting crop biodiversity particularly traditional leafy vegetables. There has been little focus on production of traditional vegetables that are nutrient rich but counties like Busia have developed biodiversity policy that has provided for promotion of indigenous foods and vegetables. This has improved availability of these foods locally enhancing access to diversified food for nutrition improvement. It is advantageous as these foods can be produced even when there is declining rainfall and are often resistant to drought. Production of indigenous foods that are highly nutritious would promote availability of diverse foods. The National Agriculture and Rural Inclusive Growth Project (NARIGP) that supports community driven development through strengthening community level institutions ability to identify and implement investments that improve agricultural productivity, food security and nutrition status. Strengthening producer organizations and value chain development to build their capacity to support vulnerable and marginalized groups to develop selected value chains in targeted rural communities improves their livelihoods. The project targets to support 200,000 households. There will be additional 171992 beneficiaries across 24 counties under Kenya Smart Agriculture Project (KSAP)and 1500 beneficiaries in Small Scale Irrigation and Value Addition Project (SIVAP).

Nutrition sensitive production systems are required to improve the quality of foods available to the community to provide for healthy soils and ecosystems for farming in the future. Even as technology is adopted to increase productivity, the methods embraced need to be proven to have no adverse effects on health. Effects of climate change are mitigated by enabling local communities to adapt to change and reduce impact on food and nutrition security. Risk management approach that is anticipatory and preventive to mitigate effects to cushion negative impacts on development need to be integrated into policies. This calls for capacity building programs on drought preparedness at all levels to enhance food production.

ii) Price stability and marketing

Market stability for food products is assured by proper management of subsidy to allow importation of deficits while ensuring that local producers benefit from good prices for sustainable food production. Waiver of duty on imported food need to be well managed to deter abuse and only applied to balance demand and supply. Policies of stabilizing the market by regulating imports envisage to promote local production by offering farmers good prices as incentive and viewing agriculture as a reliable business. Government strategically purchases maize thus stabilizing prices for farmers for enhanced incomes and improved livelihoods for producers.

Policy documents intend to ensure that production is supported for farmers to get good prices through value addition of specific products. These include marketing vegetables and fruits through cooperatives where some have gone further to pre -process to enhance keeping quality of the produce. However,Kenya's traditional fresh fruit and vegetable marketing system is characterized by fragmentation at both the producer and the retailer ends of the supply chain. The challenge is that market power resides with the wholesalers with little quality control and little or no product innovation and there are small inventories (Neven and Reardon 2004).

4.1.2 Food availability

Food availability is by local production and imports when there are food deficits. Import Dependency Ratio (IDR) is used as an indicator in assessing extent of reliance on imports. There have been initiatives of promoting local production over time though production is still not meeting the demand. The (IDR) that defines the extent to which county's supply of commodities is from imports has increased over time. The IDR increased from 15.4 percent in 2018 to 16.4 percent in 2019.IDR for vegetables and animal products increased from 18.9 percent and 2.9 percent in 2018 to 19.4 percent and 4.2 percent, respectively in 2019.This implies increased reliance on imports of vegetables and animal products.

In shifting from reliance on imports, there are measures of increasing Self Sufficiency Ratio (SSR) for the country to rely on own food production resources. The SSR increased by 0.7 percentage points and 1.5 percentage points for vegetables and fishery products. Per capita daily carolic supply from vegetable products decreased by 2.8 percent from 1982.4 thousand calories in 2018 to 1926.9 thousand calories in 2019.

Food availability issues in policy are explained further under post-harvest losses, measuring availability, situation of food balance sheet and marketing systems.

i)Post -harvest loses

Post-harvest losses occur along the value chain from the farm through consumption and vary across different types of foods. The losses are estimated to be between 20-30 percent of the production and vary depending on type of food. Maize that is lost post-harvest is 12 percent while 7.8 percent of milk is lost at farm level due to inadequate preservation facilities for small scale farmers. Government developed post-harvest losses strategy that intend to halve the losses by 2025 through increased access to preservation facilities and by pre -processing initiatives. Constraints in addressing post-harvest losses include inadequate budgetary allocation for implementing policies, inadequate capacity and training on post-harvest loss management, inadequate technologies to reduce losses, and inadequate agricultural extension services on post-harvest losses prevention. Management of post-harvest losses will significantly reduce the gap in food supply.

ii) Measuring availability

Planning and achievement of targets in keeping country's food security require timely data and information that meets criteria for international comparison as consumption demands are partly met by imports. The government has initiatives of promoting sustainable production and increased diversified foods that are affordable and meet minimum nutrition requirements of its people. Maintaining strategic reserves of food and cash stocks and planning for emergency nutrition requirements demonstrate the available foods for enhancing food security.

iii) Situation of Food Balance Sheet (FBS)

The food balance sheet (FBS) reflects the pattern of a country's food supply in a specified reference period providing information on food availability in relation to supply and utilization requirements. In 2005, Central Bureau of statistics currently Kenya National Bureau of Statistics (KNBS) established FBS using methods and international standards that have since been reviewed. New guidelines for balancing of supply and utilization of food consumption in the country were developed. A new FBS compilation tool was developed and customized to Kenya necessitating review and upgrade of FBS compilation system to new standards. The new tool was to capture fishery products. At sub-national level, the necessary statistics on food production and consumption are lacking. There has not been consistent use of FBS for informed food security decisions.

iv)Marketing systems

Marketing systems require to be efficient facilitating delivery of fresh quality and diverse produce to the markets. Highly processed foods are available cheap and intensively marketed with their sales growing fast in upper middle and lower middle-income countries. This require to be countered by all sectors mainstreaming nutrition into all elements of the food system. Implementation f regulatory and policy frameworks to promote healthier diets at national, community and across sectors through the food value chain from production to consumption.

Though Eastern Africa Grain Council (EAGC) captures trade information, the porous borders and political interests may interfere with consistency in tracking food supply. EAGC is one of the few regional organizations that try to capture and monitor food data and trade. Only scanty statistics is collected by the grain council and the available information facilitates East Africa Community (EAC) countries to project and make provisions for strategic stocks to be requisitioned to cushion the population from shortages. Tracking food available would be easier if EAC governments officially adopted Food Balance Sheet as national food security planning tools that are integrated to information systems by EAGC.

4.1.3 Policy gaps in food production and availability

Policies on pricing of farm inputs have not cushioned farmers from high production costs and often stability of market is not ensured to avoid over importation that leads to local produce fetching poor prices. When enforcement of import duties is not well done, processors take advantage to maximize on profits at the expense of farmers.

Policies are focused on boosting production and there are inadequate efforts in addressing losses along the food value chain. The missing link for increasing production is participation of workforce that have prerequisite skills to apply modern technology and innovation in production.

Financing of food production and availability initiatives has been inadequate hence the need to increase budget for sustainable production in the endeavor to attain food sufficiency. Initiatives of promoting small holder farming with incentives on access to farm inputs and better marketing strategies to enable increased incomes from farming has operationalization structural challenges. There are challenges in consistent implementation of initiatives of value addition through the food chain that is intended to offer better prices to improve incomes of farmers.

Further, introduction of fruits in forest areas as part of the forest cover trees to enhance production and availability of fruits is an innovation by government of increasing access to nutritious foods. Upscaling this is expected to fill the gap occasioned by inadequate supplies of fruits leading to high market prices.

Among the areas that require improvement are marketing of produce to ensure sustainable and reliable incomes to agricultural investments. Also, structures facilitating transportation of farm produce through institutionalized systems are required.

4.2 Access to Food

Food access refers to a state where households and individuals in those households have adequate resources to obtain diverse foods for proper nutrition. Access of food can be physical or economic. Physical access requires mobility to move to markets while economic access requires empowerment particularly of women as often, they are responsible for decisions of choice of what families feed on. Access is a critical factor in determining, acquiring and utilization of food.

4.2.1 Policy environment with access to food

Since 1980's there were undernutrition challenges despite having per capita availability of nutrients in the country exceeding that recommended by World Health Organization. Sessional paper no. 2 of 1986 on Economic Management for Renewed Growth intended to enhance access to food by improvement of infrastructure and provision of incentives to farm business with a view of economic management for renewed growth. This Sessional paper was reviewed and the second National Food policy (Sessional Paper no.2) of 1994 on Recovery and Sustainable Development to the year 2010 promoted market driven approach on agriculture and access to inputs. Market access of raw materials was envisaged to increase productivity for accessible diverse foods.

Access is still a challenge as 19.5 million people are food insecure with 14 million ,1.3 million and 4.2 million living in rural areas, peri urban areas and core urban and informal settlements respectively (NDMA,2019). Its estimated that 7o percent of households in Nairobi experience food insecurity, a quarter of which are severely food insecure.The urban poor are not able to access food in informal settings of Nairobi, Kwale, Kilifi and Nakuru among other areas particularly during the covid -19 pandemic period. Many eat for survival but cannot afford a variety of quality food items. Sometimes they are not able to eat for an entire day, due to lack of money or other resources (WFP,2010).National Food Security and Nutrition policy provides framework for achieving good nutrition for optimum health of all and increase the quantity and quality of accessible and affordable food to the vulnerable and all the population. Even though there are efforts to increase access to food by households, there have been insufficient resources to obtain food in urban areas where people have to purchase food while in rural areas poverty was a deterrent to food access. Promoting diverse sources of food in the different regions of the country would inform protection of local sources to enhance safe food supply. Poverty led to inadequate access to the desired quantities of food for improved nutrition. Efforts to increase incomes of rural communities while improving access to resources needed for production will promote access to foods.

Food accessibility has not been attained as the country depends on food imports (30-40 percent) to bridge national deficits (MALF 2019). Declining per capita food production, reducing self-sufficiency, urbanization, globalization trends and changing habits are impediments to access to food. For enhanced access, stability in the supply would be attained by setting food strategic reserves and maintaining prices through waiver of import duties when there are shortages of classified strategic food items.

The country perennially faces supply deficits in most of its food sectors. The country continues to use instruments under the Common Market for Eastern and Southern Africa (COMESA) and the East African Community (EAC) agreements to limit food imports. Both agreements

provide for high non-member tariffs on sensitive commodities including meat, dairy poultry, maize, rice, wheat, and beans. Waiver of import duties for maize and wheat are sanctioned by the Cabinet Secretary to ensure adequate strategic food reserve in the country. On exports, balancing trade by reducing levies for exports particularly in the region would increase foreign exchange earned.

In stabilizing market for cereal, National Cereals and Produce Board (NCPB) advises the government on strategic cereal imports to cushion citizens from hunger. Reforms in the sector led to dissolving of Strategic Food Reserve Agency becoming a department in the NCPB. This would streamline operations to rid conflicts as the agency will be fully responsible for strategic projections of cereal deficits as well as ensuring procurement and availability of adequate cereals for local consumption.

In addition, there are important considerations that are necessary to ensure that an environment where food is accessible is achieved for utility and nutrition improvement. Food access is influenced by manufacturing, transport and distribution, household demographics, and diets and culture of the consumers. The effect of these dimensions of food access are explained below.

i) Manufacturing

Manufacturing is among the big 4 Agenda of government and contributes in promoting food security. Food processing is a key pillar in food security as the keeping quality of processed food is enhanced so that there are supplies when the food crops are out of season. With increased urbanization, the demand of food may not be met by fresh produce thus manufacturing promotes access to foods.

ii) Transport and distribution

Improved road infrastructure, operational standard gauge railway and the availability of transport services are effective ways of increase food security and curb hunger as it allows farmers to sell their produce to a larger market at competitive prices. Goods and services that support farming are delivered efficiently at a less cost. Accessing the farm inputs and raw materials at good prices would ensure that the ultimate prices of the food produce are low and affordable.

iii) Household demographics

Prevailing economic conditions and the market stability of food prices affect household access to food. Households consumption behaviour is shaped by state of food security and income levels to enable access to foods. Economic development and improving incomes of households increase purchasing power for diverse food choice that is significant for adequate nutrition. Household with low incomes have competing interests on how to prioritize their expenditure to meet basic utilities. Inadequate access to basic water and sanitation services perpetuate a cycle of poverty thus reducing household resources and opportunities to access nutritious foods.

iv)Diets and culture of the consumers

Culture influence intra household food access. Different counties in the country have cultural practices that influence the access and utilization of food. Some practices are taboos associated with specific foods and some groups prohibited from consumption of some foods. The cultural issues need to be addressed through socio - behaviour change designed messages with a view of embracing diversified diets including the high nutrient foods that may be prohibited for specified groups, yet they are readily available. Women often have

inadequate access to improved technology and other food production resources. They often have less control of farm incomes and yet they contribute to over 75 percent of agricultural labour.

4.2.2 Policy gaps in access to food

The areas that require strengthening were equity in increasing access to credit facilities and empowerment of women and youth to be innovative in increasing productivity. Nutrition education for women for improved care practices anticipates achieving consumption of diversified foods thus attaining improved nutrition. Appreciating the diverse sources of food in the different regions of the country would inform protection of sources for safe food supply.

Inadequate investment in infrastructure to enable preservation and storage of perishable foods -fruits, vegetables and fish leads to unreliable supplies to markets thereby increased prices of food experienced due to scarcity. Gains and cost savings would be attained if adequate investments were made in transport infrastructure and technology acquisition and measures taken to eliminate illegal levies and excessive profits of intermediaries due to monopolistic behaviour. Policies need to support predictable and transparent state involvement in markets and setting up of sale and purchase prices for strategic commodities by institutions to cushion the population from food insecurity particularly when climatic conditions do not favour food production.In addition, integrating cultural social considerations in nutrition strategies and interventions would contribute to practices that support nutrition improvement.

4.3. Food Safety Standards and Quality Control

Food safety are all measures applied through the food value chain from production, processing, distribution, storage, processing, display to ensure it does not harm the consumer when it is prepared and/ or eaten according to its intended use. Food safety is critical in ensuring the body derives nutrients from diet. For this to be realized, handling and storage of food through the value chain need to comply with appropriate conditions of keeping or storage that is free from contaminants.

4.3.1 Food safety standards and quality issues addressed by policy

Initial polices were statements in policy documents that did not have monitoring and evaluation frameworks. Food safety was not of major focus in earlier sessional papers and policy statements. However quality assurance and inspections were in place though the population was low with less polluted environments for food production. The increased demand for food particularly in urban areas has led to innovation through processing to extend keeping quality of the surplus. Industry have adopted quality management systems that track undesirable deviations in food processing to ensure safety of food.

There have been quality assurance systems through the food production value chain by structured controls in government realized during periodic inspections and sampling for testing. Reference laboratories exist that include National Public Health Laboratory and Government Chemists that gives public analyst advisory. Standardization and certification are distinguished in terms of their mandatory nature. In demonstration of meeting minimum safety and quality criteria, and as a requirement to access formal markets, all products, systems, processes, and services are required to comply with Kenyan national standards and regulations and other legislation. National standards increasingly draw from international standards to facilitate greater accessibility to local and international markets. In promoting

access to formal markets, businesses and producers must meet required standards. Product and service standardization is essential to reach adequate levels of replicability and quality.

In the new Constitution of Kenya (2010) health and agriculture were devolved with national government giving policy guidance and staff capacity building while counties plan, finance and ensure efficient service delivery. Food safety standards and quality control and enhancing nutrition environment were incorporated into the Food Security and Nutrition Policy as the overarching national framework for multisector interventions. The policy takes cognizant of the 12 regulatory ministries/government departments and 20 Acts of Parliament governing food safety and quality in the Country. These addresses safe handling and processing of foods through the value chain from the farm to folk. Innovation in manufacturing by embracing food quality control would provide safe and market competitive products. A processing environment with sanitary controls and having portable water supply would promote nutritious and safe food.

There are policies at various levels of safety and standards control that are put in place by several departments and agencies in government. The various levels of safety and quality control are production, industry production, market surveillance, household or consumption and border control or Points of Entry levels. The safety and quality control actions in the various levels are explained below.

i) Production level

Kenya Plant Health Inspectorate Service Act provides for plant health, quality seed for production of food. Sanitary and Phytosanitary measures enhance quality enabling market access locally and internationally. KEPHIS has mandate of regulating plant and plant materials for compliance to phytosanitary requirements both of local and produce for export. They follow production from farm to ensure absence of contaminants in the food production process and certify quality. Public health carries out environment monitoring and inspections to ensure food is not grown in polluted environments and it is safe for consumption.

ii) Industry level production

Manufacturing is a key pillar in government Big 4 Agenda. Production of food that meets international standards would promote exports of food items. Kenya Bureau of Standards (KEBS) is mandated to ensure standardization of industrial production and trade products. Facilities are provided for examination and testing commodities for compliance with standards. Public health department ensures safety of food by inspecting food through the value chain to ensure sanitary controls are in place in processing plants.

iii) Market level surveillance

The Food drugs Chemical Substances Act, cap 254 emphasizes hygiene and safe handling of food from farm to folk. It stipulates sanitation measures through the value chain in storage, transportation and manufacturing processes for safe foods. The Public Health Act emphasizes production of food in environments that are free from contaminants and nuisances. It provides for requirements of safe handling and protections of foodstuff from contamination. Ministry of health through public health officers carrying out food safety roles inspect and sample food articles for analysis to secure the health of consumers. These are analyzed at National Public Health Laboratory (reference laboratory) in the event of legal measures to ensure compliance. KEBS is responsible for market surveillance of fortified foods and testing of pre -mixes and are custodian of standards with set up regional offices to scale up services delivery.

iv) Household level/consumption

The Ministry of health through Division on Nutrition and Dietetics have role of training on household /point of use fortification. Public health officers inspect and advise on quality of food for home consumption though there is no structured way of executing this. Cereals that are poorly handled/stored particularly when harvesting is done during rainy seasons and the produce is not adequately dried, are prone to fungal growth that cause mycotoxin food poisoning to consumers. In event that the responsible departments assuring quality and safety are not able to intercept these foods at household level, they cause ill health.

v) Border control (Points of Entry)

The port health officers regulate imports and exports of food into the country at international airports, seaports, dry ports, Inland Container Depots (ICD) and One Stop Border Posts (OSBPs). These include infant foods and raw material for food production that include premixes.

4.3.2 Policy gaps

Policies have guidance on number of technical officers that include public health officers, agricultural extension officers, and nutritionists and dieticians required to ensure food safety and nutrition improvement but actual financing and recruitment to fill the capacity gaps are required. In ensuring safety of cereals, sustained strategy for promoting cereals drying even among small scale farmers through education and awareness of safe storage would increase access to quality cereals for consumption.

4.4 Nutrition awareness, promotion, improvement, and environment

Nutrition awareness and promotion is a deliberate continuous engagement of the population that include nutrition actors in the value chain to adopting healthy nutrition practices and choices and ensuring safe handling of food from production through preparation and consumption to promote health. Awareness that can influence social -cultural and behaviour change to adoption of healthy nutrition practices require to be integrated into service delivery programs based on lifecycle approach and targeting all ages starting from school nutrition education and engaging communities when they seek services and through social groups. Capacity of officers working at operational levels in all sectors that impact nutrition needs to be enhanced to be change agents for improved nutrition. Coordination and capacity building of frontline field staff, teachers, extension agents and health workers to incorporate nutrition and food safety considerations and messages into their routine work will improve nutrition. Nutrition issues addressed in policy are considered under nutrition awareness, nutrition promotion, nutrition improvement and nutrition and environment.

4.4.1 Nutrition awareness

In earlier policies like sessional paper no. 2 of 1994, there was limited nutrition information and not much focus on micronutrients. There was inadequate structure of nutrition awareness creation in the sessional paper of 1981 and 1986 with little mention of nutrition improvement initiatives. Subsequent policies in the sectors that influence nutrition have highlighted awareness aspects. The Early Childhood Development pre -primary policy promotes nutrition education through curriculum development and training to learners, caregivers and parents. It provides standardized framework for counties to provide quality childcare. Nutritional needs

of children in Arid and Semi-Arid Land (ASAL) areas are supplemented through school feeding programs.

In addition, nutrition and physical activity education awareness among the population to change their lifestyles to adopt healthy nutrition practices is important to address increased obesity and overweight. Community engagement on nutrition awareness require strengthening particularly with the current covid -19 pandemic for maximize on benefits of uptake of appropriate nutrition for healthy productive lives. The role of culture and diets based on the regional disparities affect the way communities utilize food for nourishment. This too require sensitization of communities in adopting good nutrition practices .

4.4.2 Nutrition promotion

Advocacy communication and social mobilization in the Kenya Nutrition Action Plan (KNAP) is cognizant of political goodwill for increased investments and raising population level awareness to realize nutrition improvements. There have been social mobilization and behaviour change communication activities that include dissemination of infant and young feeding materials at national and county levels. Guidelines have been developed for national vitamin A supplementation, iron and folic acid supplementation, Maternal Infant and Young Child nutrition and food fortification strategies with a view of scaling up nutrition awareness. Nutrition stakeholders continue using national health days or weeks such as Malezi bora (good nurturing) weeks, world breastfeeding weeks, world diabetes day as platforms for

The Food and Nutrition Security policy embraces a lifecycle approach to improvement of human nutrition. The policy provides an over-arching framework that addresses the national ambition of 'the right to food'. It acknowledges several factors associated with food insecurity including chronic and poverty-based food insecurity and persistent cycles of acute food insecurity owed to recurring emergencies. It also acknowledges chronic and acute malnutrition as outcomes of food insecurity. Health policy captures and emphasizes nutrition awareness but does not specify micronutrient requirements. It envisages development of nutrition policy to provide structured implementation of nutrition interventions. In addition, the Social protection policy builds on social protection initiatives, school feeding programs, orphaned and vulnerable children program among others. The policy endeavors to give children benefits that facilitate access to nutrition. Further, the policy enhances capacity of the poor and vulnerable to improve and sustain their lives, livelihoods and welfare.

4.4.3 Nutrition improvement

Nutrition improvement refers to all measures of nutrition education promotion that are geared towards making appropriate choices on food for improved nutrition and include enriching foods that are largely accessible by majority of the population during processing with micronutrients with a view of availing essential nutrients to curb malnutrition. Nutrition education measures are affected for behavior change to adoption of healthy feeding practices for sustainable nutrition outcomes.

There have been initiatives of food fortification for improved nutrition. Salt iodization as part of food fortification on voluntary basis was started in 1972 and made mandatory in 1982. The reduction of goitre through the initiative made some industries to voluntary fortify wheat and maize flour. Kenya enacted food fortification legislation in 2012 through Gazette Notice No. 62 of June 2012 that amended the Food Drugs and Chemical Substances Act (Cap 254). This provided for addition of vitamin A to oils and fats, wheat and maize flour. Gazette Notice No. 157 of 2015 amended Cap. 254 to include food fortification standards and Kenya adopted East African Community (EAC) standards developed in 2006.

In implementation of the legislation, Kenya National Food Fortification Strategic Plan 2018-22 was developed to provide for structured production of fortified foods by industry with a view of reducing micronutrient deficiencies. Fortification of flours with vitamin A became a legal requirement since they form most of the staple food in the country. Large scale millers have since complied with this requirement but not all small-scale millers are fortifying their flour. Despite these initiatives, micronutrient deficiencies (hidden hunger) are still prevalent with vitamin deficiencies and anaemia rated particularly high. The micronutrient deficiencies for Zinc for under- fives, pregnant women and women of reproductive age in 2018 were 83.3 percent ,68 percent and 82.3 percent respectively.

There are micronutrient improvement initiatives of strengthening health systems structures and ensuring they are functioning optimally to realize improved coverage, improved knowledge on appropriate use and ultimately micronutrient intervention impact. This is a shift from the evidence in earlier policies like sessional paper no. 2 of 1994, had limited nutrition information with little focus on micronutrients. As populations increased micronutrient deficiencies were visible owing to change in feeding habits that include preference for fast foods.

Almost 99.6 percent of all salt is iodized, over 80 percent of the oils and approximately 50 percent of the flours in the market are fortified (MALF,2020). Despite the efforts of food fortification, the initiatives have not ensured access of the fortified foods. Households with low incomes rely on local milling hence the need to target the small-scale millers with a view of having their flour fortified. There have been initiatives of forming groups of small and medium millers through which partners can build capacities for fortification and support them with dossiers. Supporting the small and medium millers embrace fortification would increase access to the fortified foods. Fortification of foods would be sustainably available particularly to the people who prefer unsifted maize flour in informal settings if small scale millers are supported and have access to premixes. Subsidies on dossers and milling equipment by government such that they are affordable or alternatively enhancing capacity for production of Juakali fabricated dossers through support to local artisans would facilitate uptake of fortification. Alternatively, millers would procure equipment on soft loans including premixes for which they can pay gradually. Even with all these initiatives being in place, it's important that citizens are economically empowered to be able to buy diverse foods that include fortified flour for better nutrition outcomes.

4.4.4 Nutrition and environment

Nutrition is the process of providing or obtaining the food necessary for health and growth. How the food affects the health of the body is inseparable from the environment where man exist and the conditions under which the food is produced. Environmental contaminants may compromise people's nutritional status and health either directly or through changes in diet. This occurs when the food they feed on is contaminated as a result of polluted production environment. The state of health determines utility of nutrients. This interconnectedness and interaction make it necessary to design policies that would influence better nutrition outcomes. The shift towards more urban living has led to drastic changes in food environments for most people, and what food is available, affordable and accessible to them. This is contributing to fast shifting patterns of malnutrition among and between different income groups. Urban areas pose unique challenges and opportunities around diets and nutrition.

The significance of access to adequate portable water and sanitation for enhanced hygiene is identified as critical for better nutrition outcomes in the health policy. Evidence-based research in informing and providing the foundation and rationale for implementation of multi-sectoral strategies geared towards reduction of child undernutrition in Kenya is required. Successful partnership and strategic investments in nutrition actions by the national and county governments, development partners, private sector and other non-state actors is

required to curb malnutrition. Investment on water and sanitation requires political goodwill and buy in by County governance. Learning from covid-19 pandemic experience, the effect of sanitizing and handwashing in reduction of diarrhea diseases requires commitment of investment for sustainability. Access to wholesome water and safe excreta disposal options reduce diarrhea related diseases and contribute to improvement of nutrition outcomes.

In the spirit of realizing Universal Health Coverage (UHC) where no one is left behind systems thinking approach is required where underlying factors of malnutrition are addressed by all ministries in collaboration with private sector and development partners. Nutrition is often regarded as a health issue, disregarding the ripple social and economic effects it has on other areas of development. If populations were fed with produce irrigated by sewage, we would be achieving feeding the people but on the other hand spend money to treat the people from chronic diseases. This emphasizes the need to address food safety for the country to be food secure. The Ministry of Water and Sanitation initiatives of increased wholesome water supply will minimize diarrhea diseases contributing to better nutrition. Safe excreta disposal reduce helminth infections hence optimum outcomes are likely to be attained from what communities feed on. Environments where food are produced have inadequate sanitary requirements and often regulators assure quality of only 20 percent of the food produced. The rest of the food is produced in informal settings and safety controls are not ensured through the food production chain. Increased access to wholesome water and adequate sanitation would ensure minimized illness thus enhancing food utilization by the body for better nutrition outcomes. In addition, proper waste management ensures food is produced in sanitary environments and thus safe for human consumption.

4.4.5 Policy gaps

Although there are institutionalized education programs on educational curriculum and structured community sensitizations, there is inconsistent implementation of these interventions. In addition, there has not been an evaluation of how nutrition education has been rolled out to care givers, parents, school children and community groups. Studies narrowing to the specific diverse foods consumed by people across regions are key to inform policy of national feeding practices. Traditional food diversification would be important for contribution of the rich indigenous foods to nutrition improvement. This requires nutrition education and sensitization for adoption of indigenous foods farming. Comprehensive policies are required to address supply and demand side of food as well as the food environment where consumers engage with a food system to make their food related decisions. Improving the food system requires actors in the various food value chains to develop capacity through training of farmers and agricultural extension service providers.

4.5 Vulnerable Groups

Vulnerable groups are people who are likely to suffer adverse effects in the event of food insecurity in comparison to the general population and may include children, pregnant women ,elderly and /or people with disability among others .This can be through inability to physically access foods particularly for people with disability or children who are dependent on caretakers or mothers to determine what they are fed on.

Policies have attempted to bridge the inequities across countries in provision of nutrition to the vulnerable that would be due to gender, age, geographical locality, education level or employment status. Regional frameworks prioritizing food and nutrition for vulnerable groups include African Union policy framework and plan of action of ageing (2002). The framework is cognizant of rights to adequate food and nutrition legally constituted and guaranteed for elderly and vulnerable persons. This includes access to means of food production and

marketing and

The partial lock downs effected in some counties during the covid -19 pandemic affected mobility of people and particularly people with disability. Measures were put in place through social safety nets for orphaned children, elderly and people with disability to ensure access to food. There was evident reduction on utilization of nutrition services by children who required micronutrients and expectant mothers who required iron and folate supplements but efforts of strengthening community health units enabled access to these commodities.

Child protection policy ensure access to rights of child. Vulnerable, orphaned and children with disability are also provided social safety nets to access basic needs that include food. In the social protection safety nets, households with people with disability are given money to cater for food. These targeted reaching out to children in informal settings who benefited from school feeding programmes to cushion them from hunger during the covid -19 pandemic period when schools were closed. This contributes to addressing the unique needs of children and people with disability's high nutritional requirements.

The Food security and nutrition policy is deliberately broad in scope to encompass the actions of all actors and government sectors that contribute to long-term food security goals. The dimensions of food security in its theoretical framework are food availability, accessibility, stability, and meeting nutritional requirements. The policy embraces life cycle approach and addresses vulnerable group's needs, the peri urban poor, women and children. Health policy identifies vulnerable groups needs that require to be addressed to improve on nutrition.

There is a global focus of empowering women for sustainable nutrition improvement. Key to economic security that enhances food security in Africa is empowering the women. Investment in the nutrition of women improves household nutrition and overall health and development of the people. Gender inequality contributes to inadequate nutrition and food insecurity among women and children. Increasing incomes of women have ripple effect that can benefit the entire community. There have been initiatives of empowering women and youth to access productive resources and adopt innovation to increase productivity. Empowered women with knowledge practice appropriate infant and young child feeding as well as ensuring families are well nourished through diversified diets for improved nutrition.

Programmes like the school feeding programs were affected during the covid 19 pandemic as a result of closure of schools. In view of emergencies, programmes need to integrate risk management measures in their activities to cushion the population from food insecurity and hunger for sustainability. Nutrition Improvement through Cash Health Education programmes (NICHE) enrolled families in the social safety net who had children under 2 years or expectant woman to benefit from atop up of Shs 500 per month.

National nutrition plans have lifecycle approach to nutrition improvement with specified nutritional requirements of all age groups. In addition, nutrition advocacy social mobilization strategy has not been attained to scale up and promote nutrition needs of the vulnerable.

4.5.1 Policy gaps

There are initiatives of increasing access of the vulnerable to food that need to be strengthened to ensure sustainability of access under normal conditions and in the context of pandemics.

4.6 Coordination

Coordination requires that governance that have an oversight role invest in structural transformation to improve livelihood and socio-economic opportunities in the rural areas to enhance incomes of households and reduce poverty. With increased incomes, households are likely to make appropriate diet diversity choices to bridge the gap on nutrition indicators between the rural and urban populations (COHA,2019). Linking nutrition relief with long-term development efforts helps mitigate the potential impact of future emergencies in food insecure areas. The evident contribution of nutrition to sustainable development calls for governments to increase resources and intensify investments in community nutrition education and awareness to create demand for good nutrition. The Treasury has created a revenue code for nutrition to ensure that counties allocate budgets in the County Integrated Development plans for sustainable nutrition improvement.

4.6.1 Coordination issues addressed by policy

Coordinated implementation of activities have had priority interventions in school feeding programs, vaccination programs, crop diversity programs, livelihoods promotion programs that directly or indirectly impact nutrition .Often government's intervention has been reactive rather than integrating risk management in strategies for anticipating the adverse events and building resilient systems for sustainable food supply.

Early policies like Sessional paper no. 4 of 1981 and Sessional paper no.2 0f 1994 did not specify nutrition interventions. These policies had no implementation frameworks with a clear coordination mechanism and commitment to fund implementation of nutrition activities for optimum and structured tracking of progress in nutrition investments. In the Food and Nutrition Security Policy (FNSP) coordination framework, a multi -sectoral approach is embraced and provided for at all levels of government. The policy is deliberately broad in scope to encompass the actions of all actors and government sectors that contribute to long-term food and nutrition security goals.

Review of food and agricultural policies in Kenya 2005-2011 was done with the objective of analysis of public incentives and disincentives faced by farmers and consumers for ten agricultural commodities that formed a significant share of agricultural production, imports, exports and diet and, analysis of the composition and level of expenditure in support of agriculture and rural development. Agriculture budget is still below Maputo requirement of allocating 10 percent of national budget to agriculture and little investment in improving inspection and marketing with government policies and interventions to food shortages being reactive as opposed to proactive. Consumers were adversely affected by tariffs particularly of wheat and rice imports .The review revealed cost savings if necessary investments on infrastructure and technology were in place with measures taken to reduce illegal taxes and fees, and excessive profits of intermediaries as a result of monopoly .

The Kenya National Nutrition Action Plan (KNAP) is aligned to government's Medium-Term Plans (MTPs) to facilitate mainstreaming of the nutrition budgeting process into national development plans guides implementation of interventions. Reducing malnutrition requires political goodwill to acknowledge the integral role that nutrition plays for a healthy population and productive workforce. For a long time from health, the political priority has been High Impact Nutrition Interventions while agriculture focuses on 'food first', not considering safety and nutrition aspects. The framework provides for multisector coordination of nutrition interventions by government and nutrition stakeholders for optimum outcomes at all levels.

The context of devolved governance was to bring services closer to the people and promote equitable, efficient and prudent utilization of public resources. The national government

provides policy guidance, capacity building and technical assistance while county governments plan and budget to ensure service delivery to the people. This requires collaboration for synergy in nutrition interventions. Successful partnership and strategic investments in nutrition interventions by the national and county governments, development partners, private sector and other non-state actors is required to curb malnutrition. Financing of nutrition interventions is critical considering the processes through implementation of activities that lead to the desired nutrition outcomes. Considerations on counties allocation of budget for nutrition should be reflective of the levels of malnutrition prevailing in the respective counties. Some counties have prioritized nutrition and developed County Nutrition Action Plans to guide consistent implementation of nutrition interventions while others have not.

The Social Protection policy is coordinated by National Social Protection Council developing systems to improve research, analysis and targeting. The council reports to parliament on progress of social protection interventions. There are gaps in reporting mechanism by committees in the county governments. Analysis and determination of right beneficiaries to rid corruption in safety nets requires to be informed by evidence. Kenya Agriculture Smart Strategy 2017-2026 envisions to conduct research by development partners through targeted funding as opposed to demand driven funding.

Nutrition improvements can only be realized with proper coordinated multisectoral interventions. Ensuring food security calls for a coherent approach among stakeholders that cannot be achieved without sound governance structures provided for in policies. Breaking down the silos that separate nutrition sector players is a key challenge in overcoming inconsistencies and promoting cross-sectoral synergies for achieving food security. Economic development cannot be realized without addressing the determinants of malnutrition. The application of a policy coherence lens to global food security shows that the main challenge of ensuring food security is to raise the incomes of the poor, and that both agricultural development and rural diversification are needed to foster economic growth.

Population surveys that include Kenya Demographic Health Survey(KDHS), Kenya Integrated Household Budget Surveys, Nutrition Monitoring Surveys, Standardized Monitoring and Assessment in Relief and Transition (SMART) surveys among other surveys are done to generate information that is used for planning for nutrition services. KDHS is done after 5 years, period which is long and sometimes its extended beyond the scheduled time based on national priorities. The latest survey was done in 2014 as no survey was undertaken in 2019.

The frequency of conducting the surveys and the methods are not standardized and sometimes the policy makers are faced with the challenge of conflicting results. Sometimes the surveys are delayed beyond their scheduled time making it difficult to make nutrition policy and intervention decisions that are anchored on evidence. Examining the frequency with which national nutrition surveys are done require to be reviewed to provide for timely evidence-based interventions for sustainable nutrition improvement. The standardization of methods and frequency would be useful in guiding development of the next Kenya Nutrition Action Plan.

There is inadequate evidence-based research in informing and providing the foundation and rationale for implementation of multi-sectoral strategies geared towards reduction of child undernutrition. Further, there is inefficiency in management of agricultural research information and low public expenditure on research. Additionally, the private sector has limited participation in research. There is little research investment to evaluate the impacts of policies and program implementation across all sectors.

Although Food Security and Nutrition policy embraces multisector approach, there is limited coordination for convening sector multi agency meetings. This calls for re-examining the governance aspect if malnutrition issues are to be fixed using the systems thinking approach by the sector players.

5 Conclusion and recommendations

The review of policies was carried out with the view of identifying implementation gaps that would inform refining of policies and nutrition interventions through analysis of data to generate policy outputs for intervention of policy makers and program implementers.

5.1 Conclusion

The following thematic areas are captured including: food production and availability, food access, food safety standards and quality control, nutrition awareness, promotion, improvement and environment, vulnerable groups and coordination.

Food production and availability

Financing of food production and availability initiatives are inadequate hence the need to increase budget for sustainable production in the endeavor to attain food sufficiency. Food production require to be strengthened in pre-processing and provision of preservation facilities. There is lack of structured progressive improvement of storage and preservation facilities that would lead to the reduction of post-harvest losses as a result of few shore storage and processing facilities.In addition, initiatives of promoting small holder farming with incentives on access to farm inputs and better marketing strategies to enable increased incomes from farming has operationalization structural challenges. There are challenges in consistent implementation of initiatives of value addition through the food chain that is intended to offer better prices to improve incomes of farmers. Further, initiatives like introduction of fruits in forest areas as part of the forest cover trees to enhance production and availability of fruits is an innovation by government of increasing access to nutritious foods. Upscaling this is expected to fill the gap occasioned by inadequate supplies of fruits leading to high market prices.

Access to food

Access to food by households is mainly influenced by insufficient resources to obtain food especially in rural and urban informal settings. Introduction of incentives in agriculture and transforming it from subsistence to commercial with a view of involving youth and improving employment opportunities in rural areas contributes to increasing household's income. Increase of access to credit facilities and production enablers by women and other initiatives of economic empowerment particularly of women in rural households and urban households in informal settlements would ensure diversified diet uptake by families.

Food safety, standards and quality control

The safety of food is critical as it determines the utilization by the body for nutrition improvement. At production level, plant health inspectorate services are available that are complemented by public health measures in ensuring food is not grown in polluted environments. The food is inspected to ensure its safety for consumption. At the industry, there are internal quality assurance mechanisms that are complemented by inspections and testing to ensure produce complies with national and international standards. There is continuous monitoring of food by market surveillance and periodic sampling is done for testing though the capacities of the workforce are inadequate. At household level, there are no structures for community engagement for dissemination of food safety measures to avoid introduction of hazards and contaminants to food. Measures are put in place at Points of Entry, airports, seaports, One Stop Border Posts to regulate imports of foods that include infant foods and premixes and breast milk substitutes. Inspection of food need to be strengthened by increasing nutritionists and dieticians, and public health officers to ensure early detection of hazards for safe foods and nutrition improvement.

Nutrition awareness, promotion, improvement and, nutrition and environment

Nutrition awareness, promotion, improvement and nutrition environment requires strengthening for sustained nutrition improvement. Scaled up nutrition education provides for awareness that can impact behavior in the adoption of positive health dietary practices that promote nutrition. There was limited access to fortified foods for the rural and urban poor households in informal settings. Initiatives of fortification targeting small scale millers and at household levels envisage increasing access to fortified foods. There is no nutrition specific communication strategy for visibility and dissemination of nutrition interventions. There is inadequate financing of advocacy communication and social mobilization for design of nutrition specific education messages for vulnerable groups including food fortification messages developed that are not communicated for public consumption through the media.

Vulnerable groups

Counties are at different levels with inadequate supporting infrastructure for vulnerable groups to participate in food production and facilitating their access to foods. Improved access to food by people with disability particularly during emergencies like the current covid -19 pandemic require a risk management component integrated into service delivery.

Coordination

There is inadequate multi sector coordination and convening of meetings for accountability and progressive monitoring of national interventions. There is inadequacy in addressing of social determinants of malnutrition that include access to safe water and sanitation through poverty alleviation initiatives and improving of incomes of households. Further is the low frequency of surveys on nutrition to guide the policy priorities for timely corrective interventions for improved nutrition.

5.2 Recommendations

Food production and availability

- Curbing post-harvest losses particularly of perishable foods to stabilize supply for availability and affordable food.
- Strengthening initiatives of increasing smallholder incomes

Food access

- Increased promotion of smallholder agriculture to improve incomes of rural households.
- Structured improvement of market functions to raise on and off farm income activities.
- Increase of preservation facilities for perishable foods

Food safety, standards and quality control

- Increased technical officers to increase capacity for inspections of food produced to assure safety for nutrition improvement.
- Increased monitoring of food quality by sampling and ensuring food is not Produced in polluted environments

Nutrition awareness, promotion, improvement and, nutrition and environment

- Increased access to safe water and adequate sanitation to promote availability of safe nutritious foods.
- Nutrition education integrated in service delivery initiatives.
- Structured awareness creation to communities to create demand for nutrition services.
- Economic empowerment particularly of women for improved access to diversified diets uptake by households.
- Increased support of small-scale millers with incentives to access premixes to fortify flour for access by households with low incomes in rural and urban informal settings.

Vulnerable groups

- Provision of enabling infrastructure to vulnerable and people with disability for participation in food production and improve their access to food.
- Integrating risk management is service delivery to address needs of the vulnerable.

Coordination

- Provision of a regulatory framework for coordinated multisector interventions.
- Nutrition services need to be included in the County Integrated Development Plans for sustainability and continuity in nutrition improvement.
- Counties need to allocate nutrition budget using the code assigned by the National Treasury.
- Provide for standardized methods and frequency of conducting nutrition surveys.

- Coordinated research and learning for evidence-based nutrition interventions.
- Counties without plans to develop County Nutrition Action Plans.
- Develop nutrition advocacy and social mobilization and communication strategy.
- Strengthen community health units for increased uptake of nutrition services even in pandemics for sustainability.

References

Alila Rosemary et al. Agricultural policies in Kenya. Issues and processes,2006

Ariga J.et al. Staple Food Prices in Kenya- Presentation at COMESA Policy,2010

Ballard T.J., Kepple A.W.& Cafiero C. 2013.et al. The food insecurity experience scale: development of a global standard for monitoring hunger worldwide. Technical paper, Rome: FAO (available at https://www.fao.org/economic/esss-fs/voices/en/)

Benson, T.2004. Africa Food and nutrition security situation -Where are we and how did we get here, Discussion paper no.37,2003 Washington, DC: IFPRI

Economics of health and nutrition in Kenya. Social Science and Medicine,2018

FAO. Food security information for action. Practical guides. Rome: EC - FAO Food Security

Gitau, R.et al. *Trade and Agricultural Competitiveness for Growth, Food Security and Poverty Reduction: A Case of Wheat and Rice Production in Kenya, Tegemeo Institute of Agricultural Policy and Development, WPS, 2011, 45*

International Institute of Tropical Agriculture (IITA),2010

Jane Kabubo- Mariara, Godfrey K. Ndenge &Domisiano M. Kirii, 2009.Determinants of child's nutritional status in Kenya. Evidence from demographic and health surveys. Journal of African Economies.

Kenya Economic Report, Boosting Investments for Delivery of Kenya Vision 2030. Kenya Institute of Public Policy Research and Analysis ,2018

Kenya Economic Report: Creating an enabling Environment for inclusive growth in Kenya. Kenya Institute of Public Policy Research and Analysis,2020

Kenya Integrated Household Budget Survey. Kenya National Bureau of Statistics,2016

Kenya Urban - Comprehensive Food Security and Vulnerability Analysis (KU-CFSVA) and Nutrition Assessment, WFP,2010.

MAFAP, 2013.Monitoring African Food and Agricultural Policies, Country report

National Drought Management Authority ,2019 Integrated food security phase classification

National Food Security and Nutrition Framework,2011

National Food Security and Nutrition Implementation Framework, 2018

Neven D. et al. *The Rise of Kenyan Supermarkets and the Evolution of their Horticulture Product Procurement Systems. Development Policy Review, 22: 669-699 2008.*

Pee S, Taren D, Bloem MW. Nutrition and health in a developing world. New York: Springer; 2017. p. 705–35.

Radimer KL et al. Development of indicators to assess hunger. The Journal of nutrition. 1990; 120:1544-8.

Ruel M. Food Security and Nutrition: Linkages and Complementarities. The Road to Good Nutrition: Basel, Karger; 2013.

Ruel MT et al. Urbanization, food security and nutrition.

Seligman HK, Laraia BA, Kushel MB. Food insecurity is associated with chronic disease among low income NHANES participants. The Journal of nutrition. 2010;140(2):304-10

Shally A. Peto R, &Pande V, 2008.Effects of deworming malnourished pre-school children in India. PLos Neglected Tropical Diseases

State of food and agriculture (SOFA)2010-2011

United Nations Children Emergency Fund Report ,2016

WHO &UNICEF 2019. Position paper: Implications of recent WASH and nutrition studies for WASH policy and practice,2019

World Bank Report, 2o10

APENDIX I: TEMPLATE FOR REVIEW OF POLICIES ON FOOD SECURITY AND NUTRITION

	Production and Availability (Production Storage Processing)	Access to food and Food Stability (Marketing Trade Income)	Food safety, standards and quality control	Nutrition awareness and promoting nutrition	Nutrition improvement and Food Utilization (Micronutrients – vitamins, minerals)	Nutrition and environment (Water, sanitation)	Vulnerable groups (Elderly, children)	Coordination
Policy documents/Sessional papers on Food production and availability								
National Food Policy (SP # 4 1981-National Food Policy of Kenya(Sessional paper no.4)	Enablers- farm inputs, incentives and storage, preservation facilities	Improve infrastructure, food of national value, incentives to farm business	Limited safety considerations	no structured system of nutrition awareness creation	Not indicative of micronutrients	No focus on nutrition and environment	General population	Enabling farm environment with provision of farm inputs, incentives, preservation facilities and distribution of food to all
Sessional Paper # 1 1986 on Economic Management for Renewed Growth	Set up of grain prices, monopoly of input distribution by state	Equitable sharing of benefits of growth	Limited safety consideration	Provision of basic needs for all	Micronutrients not specified	Sanitation aspects not mentioned	All population	Revised SP no.4 of 1981, focused on access to food by improved infrastructure and incentives for farm business through economic management for renewed growth
2nd National Food Policy (SP # 2 1994) Recovery and sustainable Development to the year 2010. (sessional paper 2)	promoted market driven approach, on a limited scope	Market access of raw materials	Food safety was of little focus	Limited nutrition information	Macronutrients not specified	nutrition and environment not mentioned	General population	Increased production with access to inputs

National Oceans and Fisheries Policy ,2008	Safe waters for production	Shore processing facilities	Fish safety and quality assurance management system	Awareness on nutrition	Improved health by access to safe food	Storage facilities, preservation to avoid post -harvest losses	Little focus of specific vulnerable	Protection of water for safe fish and marine products to promote health
National Irrigation policy 2015	Increased production through technology uptake	Access to food and markets	No specified safety considerations	Education and awareness to increase production to support livelihoods	Food in all areas for nourishment	Environment promoting nutrition improvement	ASAL lands priority	Coordinated increased production in ASAL areas
National Land Policy	Access to production factors	Access to food and markets	safety considerations of freedom from contaminants	Awareness on conservation	Environment for food production	Production to promote nutrition improvement	All population	Coordinated access to production resources
National Environment policy,2013	Access to production factors	Access to food and markets	safety considerations for quality food	Awareness on conservation	Free from environmental contaminants for food production	Safe from pollutants	All population	Conservation for promoting conducive production environment
Kenya Arid and Semi-Arid Lands policy 2012	Access to production factors	Access to food and markets	No specified safety considerations	Education and awareness to increase production to support livelihoods	Foster access to food production	Environment promoting nutrition improvement	All population	promoting production environment
Policy documents/Sessional papers on food access								

Agriculture Sector gender policy 2013	Access to production factors	Market access improved	Knowledge on safety	Nutrition awareness created	Improved nutrition through knowledge	Access to environments supporting nutrition	Women, girls and boys and special need groups	Promote access to markets production factors and mainstream needs of women, girls, boys,youth
Vision 2030	Transform smallholder agriculture from low productivity subsistence to innovative agriculture, climate smart agriculture interventions, enhance productivity of crops and livestock irrigation, affordable farm inputs, blue economy development	Agro-processing, industrial process, improve incomes and food security,	Manufacturing, innovation	Right to access adequate nutritious food	Good nutrition for healthy living	Infrastructure enabling	General population	Transformation to industrialized middle income Country, Coordination by National county Govts coordinating summit, Intergovernmental budget economics council, Intergovernmental Relations Technical Committee
Kenya National Food and Nutrition Security Policy 2011	Increased sustainable domestic production, storage, post-harvest loss minimized	state involvement in markets, change of import tariffs, prices set, incomes off farm	Food safety, quality and public health considerations for quality assurance	Nutrition knowledge for all, healthy lives to full potential, all sectors nutrition awareness for all life stages	Food diversification, fortification with minerals, vitamins. Diverse diet for all life stages	Sanitation water and hygiene promotes nutrition	children, people in emergencies, access to peri-urban poor, -specific ages	Multi sector nutrition interventions including actions of hunger eradication and improved nutrition

Policy documents /sessional papers on food control ,standards and safety								
Food drugs Chemical Substances Act, cap 254	Good manufacturing process from farm, storage, transportation sanitation measures	Fraud and deception on quality offence, Access o food of quality, nature and substance demanded by consumers,	Standards of safety through food chain, include raw material quality	Guides on labelling that is not deceptive, ingredients of food known to consumers,	Gives standards of food, additions and constituents that comprise adulteration	Sanitation central to quality of food	Population, groups with special dietary requirements	Quallity assurance of food production through food-chain from farm to folk. processing controls, marketing and advertising rid of deception on nutrition, import export requirements
Breast milk substitutes (Regulation and control) Act,2012	available safe products	Regulation to protect labels (guard against substitute of breastfeeding) marketing,	Safety inclusion	to ensure protection, promotion and support of breastfeeding	Awareness of deception to ensure safe products consumption	Water sanitation on hygiene requirements	Quality substitutes	Coordination of authorized officers to regulate infant food preparations and guard against deception, breast milk substitutes
Public Health Act,242	Production environment free from contaminants, nuisances	Enabler and guards introduction of contaminants during marketing	Standards foods, imports exports at ports, provision for destruction	Quality, no structured engagement of actors awareness,	Nutritious standard compliance foods	Micronutrients provided in public health rules from time to time	General population	Coordinates actions of securing the public health, measures of protection of environments from contamination, protection of foodstuffs, imports, exports

Kenya Plant Health Inspectorate Service Act	Plant health, quality seed for production	Marketing enhanced quality exports income	Standards for fruits, vegetables, exports, imports	Public education not structured	nutrients for nourishment	Water, sanitary environment, phytosanitary requirements	All population	Protection of plant materials from disease and postposition for sanitary and phytosanitary measures in promoting imports and exports, devolved units engagement not specified
Policy documents /sessional papers on nutrition promotion, awareness, improvement and environment								
ECD National Pre-Primary Education Policy 2017	Production and availability dependent on partners no sustainability	Access to nutrients not defined	Safe nutritious food	Nutrition education promotion in curriculum children, caregivers, parents	Not specified micronutrients, general nutrition	Water and sanitation for quality childcare, hygiene	Children special needs, ASAL areas children	framework for ensuing access to quality childcare, provision of meals, improved nutrition of learners
Kenya Health Policy 2014-2030	available commodities for nutrition	Access food by all	Improved nutrition and food Safety through lifecycle	Nutrition awareness inadequate	micronutrients not specified	Adequate safe water for hygiene	Children, immuno compromised, elderly, orphaned, living with HIV	improved nutrition and food safety throughout life course, for access to safe quality food, child to access basic nutrition and health care

National School Meals and Nutrition strategy 2017-2022	Smallholder local supplier promotion, storage	Marketing equity distribution	Safety assured, standards nutrients	Awareness education to create demand nutritious foods	micronutrients specified fortification supplements	Environment conducive variety of food choices, sanitation	meals to all learners particularly in ASAL areas, use of indigenous food, support to communities to produce food, and supply schools	
National Guidelines for Healthy Diets and Physical Activity 2017	Access to nutrition commodities structured in line with tasks	Regulates marketing to avoid deception, masking	Safe regulation of nutrition commodities	Structured nutrition education creating demand for nutritious foods	Specified micronutrients for lifecycle cohorts	Sanitation and water quality support nutrition	Children, expectant women	sectors engagement for social amenities to support physical activity, dietary requirements through life cycle
Kenya National Food Fortification Strategic Plan 2018-22	Structured Production of fortified foods by actors	Marketing	Food safety standards monitored	Nutrition awareness creation ,behavioral change health diets	Micronutrients specified in wheat, maize ,oils	Sanitation for quality fortified foods	Children	enrichment of foods for cushion from hidden hunger, Kshs 903230305 investment Govt and partners to implement 2018-22
National Guideline for Integrated Management of Acute Malnutrition, 2009	Available commodities	Marketing and access to micronutrients	Safety standards assured	Emergency, preparedness and response, nutrition education awareness	Micronutrients specified, type I-lack of this cause major illness and impaired immunity. Type II-growth and tissue repair	Water and sanitation enhance nutrition	All vulnerable, children, women	Wholistic address of malnutrition integrated in service delivery for better child health outcomes. Structured ASAL interventions

National Maternal, Infant and Young Child Nutrition Policy ,2013	Unhygienic preparation, storage	rid deception in marketing, substitutes, manage conflict of interest (health workers) ethics,	Inadequate environmental sanitation, Imports comply with codex, standards in BMS act, KEBS,	Media advocacy correct information to public for optimal child feeding,	Folate, iron micronutrients, indigenous foods promotion	Sanitation and safe water support hygienic feeding	Children, expectant mothers	feeding requirements life cycle approach, empower women, communities for optimal feeding. community support groups education
Kenya Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCAH) Investment Framework,2016	Infrastructure for availing commodities and assured security in supply	Inequities between population subgroups, rich and poor. Supply demand side gaps, coverage challenges	Safety of commodities assured	Poor data management, socio cultural economic barriers, inaccessible services, innovative demand side approaches, community engagement to generate demand, behaviour change	Micronutrients not specified	Maintenance of essential infrastructure	Commodity security all vulnerable	reduce stunting to 19 %, suboptimal functioning health system, inequity workforce distribution. weak supply (stockouts), integrate RMNCAH services in vertical programs
National Roadmap for Accelerating Attaining of MDGs related to Maternal Health and New-born Health	Production nutrition commodities	Access issues addressed to limited scope	Safety not mentioned	Awareness women integrated in service delivery	Micronutrients specified	Water Sanitation aspects not mentioned	All women children	strategic partnerships for investment in maternal new-born health at institutional and program levels
Policy documents /sessional papers on vulnerable groups								
Kenya National Social Protection Policy,2011	Available nutrition supplies	Income cash transfers to cushion poor	Safe food by sectors officers	Poor child income security –child transfers to enable nutrition access	Micronutrients for growth	Water sanitation access	Orphaned vulnerable, drought	Promotion and provision of social safety nets, transformation

The National Children Policy Kenya 2010	Production and available food	Safety nets to access for poor, access to all	Safety by sector quality inspectors	Nutrition access to diverse foods	micronutrients for proper growth and development	Access to water sanitation	All children	Protection of children and right to access food, social safety nets to access food, improved nutrition
Policy documents /sessional papers on coordination								
National School Health policy	Provision of food to support learning	Access to all children	Sector quality assurance officers address safety and quality	Nutrition education in curriculum and care givers	No specification of micronutrients	Sanitation and hygiene support good nutrition	All children	Coordinated provision of healthy learning environment, access to water, sanitation services
Kenya policy Framework for Education,2012	Available materials and resources	Accessible requirements	safety considerations for quality food	Education and awareness to promote good nutrition at school and communities	Micronutrients for improved nutrition	Promotes safe available micronutrients	All population	Coordinated production environment improvement
The National Agricultural Sector Extension Policy (NASEP)2012	Improved production embracing technology	Access to food and markets	No specified safety considerations	Education and awareness to promote production in communities	Produce for improved nutrition	Promotes production for improved nutrition	All population	Coordinated production environment improvement
National Livestock policy,2008	Production increased, enabling access to production resources	Access to markets, export products	Safety and quality assured for export, disease free zones	Education and awareness to support livelihoods	Produce for improved nutrition	sanitation hygiene support value addition	All population	Emergency livestock off take,institutionalize early warning systems mitigate effects of all disasters, livestock breeding improvement

Sessional P. no 2 on National Policy on Gender and development 2019	Promotion of women participation in production	Market access improved	Knowledge on safety	Nutrition awareness created	Improved nutrition through knowledge	Support in nutrition environments	Women, girls, boys and special need groups	Mainstreaming gender in MTP 2010-15, based on sector development strategy
Agriculture Sector Development Strategy, 2010-2020	Access to farm inputs, storage facilities, cooperative, search better prices processing	Improve market access, marketing Export market, barriers removed, information for prices for farmers	Quality assurance, veterinary drugs, Agricultural research institutions uncoordinated ,farm inputs, seeds quality	Awareness of nutritious food,	Food produced for healthy population	Access to water to improve health	Displaced floods, ASAL droughts, resilience of disaster	Streamline agricultural institutions, training and research for service to farmers. Producers, processors marketers employ technology, shift from subsistence to market-oriented production
Strategy for revitalizing Agriculture (SRA) 2004	To increase infrastructure and institutional support to promote sector growth Improve profitability of agriculture enterprises. Access to quality inputs	Access to financial service, domestic and external market	Little focus on safety	Awareness advisory support	Food for nourishment	Production of safe foods	General population	Improved agriculture performance into large scale mechanized for increased production
National Agriculture Investment Plan 2019-2024	Small-scale farmers, pastoralists, fisherfolk production	food affordable available to all	Safety not of focus	Awareness of nutritious food, not structured	Food produced for healthy population	Sanitation and access to water	General population	Coordinated implementation of agriculture investments

Kenya National Nutrition Action Plan 2012-2017	Access to produce with good nutritional value	Rid deceptive Marketing, labels, advertising	Safety assurance by inspections	Nutrition education structured	Micronutrients specified	Water sanitation ingredients in promotion	Women, child in lifecycle	implements the Food Security nutrition policy to meet nutrition goals
National Climate Change Action Plan 2018-2022	improved breeding of animals, drought tolerant crops, water harvesting, integrated soil fertility management	Structured for access to food	Safety key to sustain nutrition	Capacities &education of people to cope, early warning systems,	Nutrition improved	Enhanced productivity and resilience of agriculture sector	Cushion from floods, drought, diseases, pests	invest in adapting to change for resilient communities
Ministerial Health Strategic &Investment Plan 2014-2018	Storage, satisfactory processing	Structures for access by sector players	Safety of commodities, inspections, standard, quality assured	Structured interventions to halt disease	Specified micronutrients	Sanitation enhanced for health, quality water access	Children, women, aged	Right to nutritious food and healthy productive live. coordinated monitoring and joint budgeting
Kenya Dairy Board strategic plan 2018-2022	Dealers produce and deliver quality products, processing Stable prices to producer,	Market access, , Import export regulation, milk dispensers	Quality assurance, hygiene	Awareness of risks associated with ram milk consumption,	No Micronutrients flagged out	Water and sanitation, in processing	Children, general population	Quality dairy products ,minimize post-harvest losses , guarding against zoonotic diseases, for mid- term review Dec 2019
Policy on Devolved System of Government ,2016	Production enablers	Access to markets	Safety by sectors assuring quality	No nutrition specific actions mentioned	Not specified	Water sanitation and hygiene	All population	Coordination structures specifying functions

Ministry of water and sanitation strategic plan ,2018-2022	Adequate portable water	Access to quality water	Safety by sectors assuring quality	No specified	Not specified	Water sanitation investments	All population	Multi sector interventions
Kenya Agr-nutrition implementation strategy 2020-2025	Considers changing environment in food production by revamping food systems	Food distribution for improved food systems, Increased production stabilizing availability and access	Safety through food chain from production to consumption	Advocacy and nutrition awareness	Innovation to address micronutrient deficiencies	environment enhancing promoting improved nutrition	Vulnerable dietary needs consideration	Improved coordination of nutrition sensitive agricultural interventions to address malnutrition
Baby Friendly Community Initiative. A training manual for community health volunteers 2020	Production enhanced	Enhanced access to micronutrients	Safety by sectors assuring quality	Advocacy and nutrition awareness	Promotion on nutrition improvement	environment enhancing promoting improved nutrition	Vulnerable dietary needs consideration	Coordinated efforts to improved breastfeeding
Point of use fortification with micronutrients powders. Participant's manual Community health Volunteers	Available micronutrients	Enhanced access to micronutrients	Safety by sectors assuring quality	Advocacy and nutrition awareness	Promotion on nutrition improvement	environment enhancing promoting improved nutrition	Vulnerable dietary needs consideration	Coordinated response and reporting of micronutrient deficiencies
Point of use fortification with micronutrients powders. Trainers guide Community health Volunteers 2020	Available micronutrients	Enhanced access to micronutrients	Safety by sectors assuring quality	Advocacy and nutrition awareness	Promotion on nutrition improvement	environment enhancing promoting improved nutrition	Vulnerable dietary needs consideration	Coordinated response and reporting of micronutrient deficiencies

Point of use fortification with micronutrients powders. Trainers guide Health care providers 2020	Available micronutrients	Enhanced access to micronutrients	Safety by sectors assuring quality	Advocacy and nutrition awareness	Promotion on nutrition improvement	environment enhancing promoting improved nutrition	Vulnerable dietary needs consideration	Coordinated response and reporting of micronutrient deficiencies
Point of use fortification with micronutrients powders. Trainers guide Health care providers 2020	Available micronutrients	Enhanced access to micronutrients	Safety by sectors assuring quality	Advocacy and nutrition awareness	Promotion on nutrition improvement	environment enhancing promoting improved nutrition	Vulnerable dietary needs consideration	Coordinated response and reporting of micronutrient deficiencies
Implementation Framework for securing a breast feeding friendly environment at the workplaces 2020-2024	Not specific on production	Enhanced access to breastfeeding	Safety with amenities promoting hygiene in feeding	Nutrition awareness and advocacy	Promotion on nutrition improvement	Improved environment to foster breastfeeding	Vulnerable groups consideration	Coordinated implementation of supporting breastfeeding in workplaces
Kenya National Nutrition Action Plan 2018-2022Popular version	Production enhanced	Access to products ensured	Safety ensured by agencies of assurance and standards	Nutrition awareness and advocacy	Promotion on nutrition improvement	Improved environment enhancing nutrition	Vulnerable groups consideration	Coordinated accelerated interventions to eliminate malnutrition
The Kenya National Nutrition Action Plan 2018-2022	Production enhanced	Access to products ensured	Safety ensured by agencies of assurance and standards	Nutrition awareness and advocacy	Promotion on nutrition improvement	Improved environment enhancing nutrition	Vulnerable groups consideration	Coordinated accelerated interventions to eliminate malnutrition
Kenya National Nutrition Monitoring and Evaluation Framework 2018-2022	Production of data for use at all levels	Access to products ensured	Safety through agencies ensuring standards	Promote awareness and data generation	Food utilization improvement	Monitored response and nutrition environment	Vulnerable groups considered	Coordinated tracking, reporting and evaluation of national action plan on nutrition

Kenya Rural Development Strategy, 2012-2017	Increased production for wealth creation, infrastructure improvement, strengthen agriculture	Access to food produced	Safety through agencies ensuring standards	Promote adequate nutrition awareness	Food utilization improvement	Monitored response and nutrition environment	Vulnerable groups considered	Coordinated accelerated interventions to eliminate malnutrition
Kenya Poverty Reduction Strategy Paper ,2013	Increased production for wealth creation, infrastructure improvement, strengthen agriculture, trade	Access to food enhanced	No focus on safety	No nutrition awareness	Food utilization improvement	Promote nutrition environment	Vulnerable dietary needs not considered	Coordinated accelerated interventions for economic development
Economic Recovery Strategy for Wealth and employment creation 2003-2007	Increased production for wealth creation, infrastructure improvement, strengthen agriculture, trade	Increased access	Safety not emphasized	No focus on nutrition awareness	No focus on nutrition improvement	Food production to feed population	No much focus of vulnerable	Synergy in restructuring economy for increased production
Kenya Nutrition Capacity development Framework 2014-2019	Availability of nutrition resources	Increased access	Structured quality assurance of nutrition supplies	focus on structured nutrition awareness and advocacy plan	focus on nutrition improvement through capacity building	Enablers to increase production nutritious foods	Vulnerable considerations	Coordinated improvement of nutrition indicators by increased resources

Kenya National School Health Strategy Implementation Plan 2011-2015	Availability of nutrition resources	Increased access	Structured quality assurance of nutrition supplies	focus on nutrition awareness	focus on nutrition improvement through school feeding	Learning to increase production nutritious foods	Vulnerable considerations	Coordinated improvement of nutrition indicators by increased resources
Kenya National Strategy for prevention and control of Non Communicable Diseases 2011-2015	Availability of nutrition resources	Increased access	Structured quality assurance of nutrition supplies	Promote adequate nutrition awareness	focus on nutrition improvement	Enablers to increase production nutritious foods	focus on nutrition improvement of vulnerable, chronic conditions	Coordinated improvement of nutrition indicators by increased resources
Kenya Climate Smart Agriculture strategy 2017-2026	Production enablers amidst changing climate	Access to markets, improved incomes	Standards not specified	Awareness on mechanisms of increasing productivity with changing climate	No specification	Water for enhanced productivity, not rain dependent	Population general	Upscaled Agr Sector strategy 2010-20 interventions to mitigate climate change effects. Annual report to climate change council, disseminated to public, stakeholders. private sector participation
Legislative Documents/Acts/Bills								
Constitution of Kenya 2010	Structures for production of food	Structures enabling marketing	Quality food	Awareness and access to information	Not specified	Right clean environment, access safe water sanitation	Child, elderly, expectant	Overall framework Country for strategic direction, right to access adequate nutritious food and quality life
Intergovernmental Relations act 2012	Production infrastructure	Access to services	Safety by sectors	Access to utilities for improved health	Awareness of services for improved health	Nutritional knowledge	All population	Definition of functions, intergovernmental

Climate change Act,2016	Mainstream climate change into planning processes while developing incentives to promote climate resilient actions.	Production enabling structures	Safe environment, free of contaminants	formulate a national gender and intergenera-tional responsive public education and awareness strategy on climate change and implementation programme	Safe production of food	Conservation of env to support food production	population	Structures for early warning, prediction of anticipated adverse events to inform investment in preparedness and mitigation aimed at supporting livelihoods in ASAL areas particularly. Committees national and COG coordination
Irrigation Act,347	Production enabler	Access to resources to produce	Safety by sectors	Awareness on safe water for production	production of food for healthy population	Safe water for safe foods	All population	Generation of adequate water for production
Water Act, No.43 of 2016	Adequate water generation	Access to safe water	Safety by sectors	Awareness on safe water for production	production of food for healthy population	Safe water for safe foods	All population	Productivity enhanced
Health Act,2017	Production and available medical products accessible	Post market surveillance of quality	Safety quality control, disposal unfit	Access to utilities for improved health	Therapeutic foods nutritional formulations	Nutritional knowledge all population, health education, safe foods available	No specific	Attainment highest standard of health for national growth. Coordinate national and county health systems
The Crops (Irish potato) regulations,2019	Grower associations -consistent farmer protection, promote production	Selling in designated markets, protect trade better prices	Standards on label and inspection declaration criteria	Food production for nourishment	Safe production environment	Standards compliance by inspector	population	Coordinated increase of productivity National county structures marketing promotion for better prices

The Children Act 2001	Production by government	Access to nutritious food	Safety by sector ministries	Nutrition education promotion	Nutrients for improved health	Access to sanitation and water	All children	Child rights access to food, care and protection to attain productive life,
The Nutrition and Dietitians Act,18 , 2017	Production and available nutrition commodities	Access to nutritious food	Safe commodities for nutrition	Nutritional knowledge all population, health education, safe foods available	Gives standards of nutrition supplies	Micronutrient access enhancement	Vulnerable considered	Regulation of practice and coordinated interventions
Crops act ,2013	Growth development Agricultural crops	Min of Transport economical reduce transport costs, stable consumer supply, wholesale markets,	Standards in grading, sampling testing, packaging preservation, transportation for health	Farmers awareness mentioned, no structured plans to actualize	Omission component of micronutrients	Lacks structured water supply, sanitation facilities in collection centers,	general population	Link research institutions for innovation to promote production, by hybrid varieties that are disease resistant, marketing
Food security bill 2017	Production quality foods	Transport access to markets, food poor families enabled to produce food	Access to quality food by all	Simple System development to women access nutrition information by nursing mothers on nutrition needs and of their children	Specification of foods, milk, ingredients,	Sanitary processes, clean environment	Children nutrition specified, lactating, pregnant mothers, food poor families, orphaned child	Coordination framework for nutrition influencing sectors engagement to improve nutrition
Programmes								
School feeding program	Available processed, safe storage	Available market	Safety of food, inspections	Nutrition education awareness	Micronutrients specified	Water sanitation	Children	Regular school feeding 803,669
Expanded school feeding, Njaa Marufuku Kenya program	Local production	Available foods	Safety in food handling	Nutrition education awareness	Micronutrients rich indigenous foods	water sanitation support hygiene, healthy	Children slums, ASAL	Integrated in school activities,346000

Infant feeding program me for mother	Available produce locally	Income for diverse food choices	Safety of meals	Nutrition education on diets	Specified micronutrients	Sanitation and water for hygiene and health	Children	Coordinated in routine service delivery
Fortification of food	Available raw materials	Marketing controls	Safety and quality incorporated	Awareness of nutrition structured	Micronutrients specified	Sanitation and water safety support processing	Vulnerable groups	Oils and fats, Maize, wheat fortified at industry
Iodized salt	Available production	Access to market	Safety incorporated	Nutrition awareness	Iodine	Processing sanitation requirement	All population	mandatory
Vitamin A Supplementation and Micronutrient Deficiency Control	Available in routine services	Accessible	Safety incorporated	Continuous awareness created inn routine service initiatives	Specified micron-nutrients	Processing sanitation requirement	All vulnerable groups	Integrated in routine service delivery
Orphaned and vulnerable Children	Availing social safety nets for food	Access to children orphaned	Standards assured by sector Ministries	Nutrition education promotion	Nutrition improvement	No focus on water sanitation	All vulnerable orphaned children	Cash transfer to 412,470 children, Coordinated social safety nets
Emergency nutrition	Facilities for storage in emergencies to assure quality	Safety nets to poor to cushion them from hunger	Safety considerations in foods to avail nutritious diet	Awareness structured for optimum benefits	Nutrition improvement	Water and sanitation drivers of efficiency of intervention	All ages, life cycle approach	Integrated into service delivery and vertical programs
Beyond Zero First Lady Initiative	Accessible services	Sensitization to create demand for services	Safety critical for success	Awareness promotions, marathon events	Nutrition improvement	Hygiene and water	Access by Women of ANC maternal services	Confirm recognition of Reproductive Maternal Child and Adolescent health as a development priority and national commitment to change, free maternity

One million kitchen gardens initiative	Production enhancing infrastructure	Income through surplus produce	In sectoral policies	Awareness for all on nutrition for improved health	Nutrition improvement	Hygiene and water	All population	Coordinated by Agriculture with structures at Counties, improved nutrition as households access vegetables
National Agriculture and Rural Inclusive Growth Project (NARIGP)	Production enhancing infrastructure	Market access support through groups	In sectoral policies	Awareness for all on nutrition for improved health	Nutrition improvement	Facilities for safe food production	All population	200,000 households, community driven development and investments improving productivity
Studies/Surveys undertaken								
Integrated Health and nutrition Smart Survey	Production for access	Economic access	Vulnerability to food insecurity in slums	Kenya National Micronutrient Survey conducted in 2011	Nutrition improvement	Community led total sanitation, Open Defecation Free	Sanitation options awareness, external subsidy of sanitation hardware materials	Standardized monitoring of Relief and transitions (SMART)in ASAL areas

