Accelerating progress towards SDG2

POLICY EFFECTIVENESS ANALYSIS IN THE FOOD AND AGRICULTURE SECTOR

KENYA

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List of Acronyms

ADC	Agriculture Development Corporation
AFA	Agriculture and Food Authority
AFC	Agriculture Finance Corporation
AHITI	Animal Health and Industry Training Institute
AIDS	Acquired Immune Deficiency Syndrome
AIRC	Agricultural Information Resource Centre
ASAL	Arid and Semi-Arid Lands
ASCU	Agriculture Sector Coordination Unit
ASDS	Agricultural Sector Development Strategy
ASDSP	Agriculture Sector Development Support Programme
ASGTS	Agricultural Sector Growth and Transformation Strategy
ATCs	Agriculture Training Centres
ATO	Agricultural Transformation Office
AU	African Union
AWPs	Annual Work Plans
BMI	Body Mass Index
CAADP	Comprehensive Africa Agriculture Development Programme
CARPS	Capacity Assessment and Rationalization of the Public Service Programme
CASSCOM	County Agricultural Sector Steering Committee
CBEF	County Budget and Economic Forum
CDF	Constituency Development Fund
CECM	County Executive Committee Members
CFNSC	County Food and Nutrition Steering Committees
CGA	County Governments Act
CIDPs	County Integrated Development Plans
CIMES	County Integrated M&E System
COB	Controller of Budget
COG	Council of Governors
CRA	Commission for Revenue Allocation
CSOs	Civil Society Organizations
DAP	Di-ammonium Phosphate
DPP	Director of Public Prosecution
DRSLP	Drought Resilience and Sustainable Livelihoods Programme in Horn of Africa
DSA	Daily Subsistence Allowance
EACC	Ethics and Anti-Corruption Commission
EDE	Ending Drought Emergencies
EU	European Union
FAO	Food and Agriculture Organization
GIEWS	Global Information and Early Warning System
FAOSTAT	FAO-Statistics
FIRST	Food and Nutrition Security Impact, Resilience, Sustainability and Transformation
FMD	Foot and Mouth Disease
FNS	Food and Nutrition Security
FNSSA	Food and Nutrition Security and Sustainable Agriculture
FPEAK	Fresh Produce Exporters Association Kenya
FY	Financial Year
GAIN	Global Agricultural Information Network
GCP	Gross County Product
GDP	Gross Domestic Product
GIS	Geographic Information System
GNP	Gross National Product
GODAN	Global Open Data for Agriculture and Nutrition
HCAS	Horticulture Competent Authority Structure
HCD	Horticultural Crops Directorate
HH	Household
HSNP	Hunger Safety Net Programme

ICT	Information and Communications Technology
IEBC	Independent Elections and Boundaries Commission
JASCCM	Joint Agriculture Sector Consultation and Cooperation Mechanism
JASSCOM	Joint Agriculture Sector Steering Committee
KAKIS	Kenya Agriculture Knowledge and Information System
KALRO	Kenya Agricultural and Livestock Research Organization
KCC	Kenya Co-operative Creameries
KCSAP	Kenya Climate Smart Agriculture Programme
KDHS	Kenya Demographic Health Survey
KeFS	Kenya Fisheries Service
KEMFRI	Kenya Marine and Fisheries Research Institute
KEPHIS	Kenya Plant Health Inspectorate Service
KFC	Kenya Flower Council
KFMA	Kenya Fish Marketing Authority
KIHBS	Kenya Integrated Household Budget Survey
KNBS	Kenya National Bureau of Statistics
KSH	Kenya Shillings
KTDA	Kenya Tea Development Agency
KVEST	Kitui County Vision for Social and Economic Transformation
M&E	Monitoring and Evaluation
MCAs	Members of County Assemblies
MDAs	Ministries, Departments and Agencies
MDP	Ministry of Devolution and Planning
MED	Monitoring and Evaluation Department
MERL	Monitoring, Evaluation, Reporting and Learning
MoALFC	Ministry of Agriculture, Livestock, Fisheries and Cooperatives
MoEF	Ministry of Environment and Forestry
MTEF	Medium-Term Expenditure Frameworks
MTIP	Medium-Term Investment Plans
MTP	Medium Term Plan
NAAIAP	National Accelerated Agricultural Inputs Access Programme
NAIP	National Agricultural Investment Plan
NCPB	National Cereals and Produce Board
NDMA	National Drought Management Agency
NEDI	the North Eastern Development Initiative
NFNSP	National Food and Nutrition Security Policy
NIB	National Irrigation Board
NIMES	National Integrated M&E System
NSNP	National Safety Net Programme
OLS	Ordinary least squares
OVC	Orphans and Vulnerable Children
PDU	Presidential Delivery Unit
PPP	Public Private Partnerships
PWSD	Persons Cash Transfer, the Cash Transfer for Persons with Severe Disability
SAGAs	Semi-Autonomous Government Agencies
SAPs	Structural Adjustment Programs
SDGs	Sustainable Development Goals
SMAP	Standard Market Access Project
SRA	Strategy for Revitalizing Agriculture
SWAGs	Sector Working Groups
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
USA	United States of America
USAID	United States Agency for International Development
US$	United States Dollars
USDA	United States Department of Agriculture
VMC	Veterinary Medicines Council
WaSt	Wasting-Stunting
WHO	World Health Organization

Executive summary

The nutritional status of Kenyans has shown improvement over time but recent data indicate reversals. For instance, prevalence of child stunting decreased from 35 percent in 2008 to 26 percent in 2014, but then rose to 29.9 percent in 2015/2016. Micronutrient deficiency is also a major problem in Kenya. Hence, the social and economic costs of malnutrition are high in Kenya. The country's Arid and Semi-Arid Lands (ASAL) region is proving to be a hard-core problem of malnutrition and food insecurity, requiring a highly targeted approach to address key drivers.

This report provides a synthesis of three background studies and further analysis designed to address different questions related to the challenges of food and nutrition security and sustainable agriculture (FNSSA). Conducted under the FIRST Programme in Kenya, the questions comprise a policy effectiveness analysis whose broad objective is to assess Kenya's policies for achieving food and nutrition security and sustainable agriculture. The questions can be summarized as follows:

a. What are the determinants of food insecurity, malnutrition and poverty at national level and in ASAL areas of Kenya?

b. To what extent is the policy response relevant, adequate and realistic?

c. To what extent is the policy implementation effective?

d. What are the priority areas for intensified support and accelerated action?

The diagnostic analysis has uncovered numerous deficiencies. A description of the key findings is given below.

i. Key drivers of child malnutrition at household level are linked to agro- ecological and socio-economic factors

Key drivers of child nutritional outcomes were identified using multivariate regression analysis. The results show that child nutrition is associated with at least five major factors. First, environmental elements such as agro-ecology, seasons and shocks have significant influences on child nutritional outcomes. These factors affect sources of livelihood and food availability. Dry seasons, as well as shocks due to crop damage, loss of animals and drought, are correlated with higher rates of stunting and wasting in children.

Second, access to food is correlated with child nutrition. Producing one's own food or investing in food stock is associated with lower stunting and wasting. The poor are likely to access lower quality food with limited dietary diversity.

Third, improving women's education and the nutritional status of mothers is associated with reduced child malnutrition. Non-thin or well-fed mothers are most likely to have normal weight (not stunted) children.

Fourth, child care, water supply and sanitation, as well as health and sanitation quality, affect child nutritional status. During drought and dry seasons, women and girls spend more time in fetching water, resulting in girls dropping out of school.

Finally, governance and corruption challenges in Kenya have interfered with development and service delivery. Significant reductions in child and female malnutrition levels require major improvements in

service delivery within key economic and social sectors such as land, water, health care, roads, security/crime and agricultural services.

ii. Food security situation and trends are not favourable, but Kenya has the potential to end hunger

Food availability, access, stability and utilization are all strongly linked to the performance of the sector. Agriculture is the mainstay of the economy, contributing 26 percent to Gross Domestic Product (GDP) directly and 27 percent indirectly through linkages with manufacturing, distribution and other service-related sectors. However, agricultural production and productivity have been stagnating in recent years. Maize production increased by only 39 percent, from 2.3 million tonnes to 3.2 million tonnes between 1990 and 2016. By contrast, total population increased much more rapidly. The consequences of poor performance of the food sector have been increasing dependence on food importation, food and nutrition insecurity, stagnating real incomes of farmers, high levels of rural and overall poverty, and uneven development with urbanization concentrated in one or two of the largest cities rather than being regionally dispersed over many urban centres. High food price is the other major outcome of a lagging food supply in Kenya.

Despite the poor performance of agriculture, Kenya is endowed with diverse physical features, including its low-lying arid and semi-arid lands (ASALs), an extensive coastal belt, plateaus, highlands, and the lake basin around Lake Victoria, giving rise to one of the most diversified agricultural economies in East Africa. The potential to increase the production of food, and industrial and horticultural crops is considerable. The only challenge is the policy gap that is hindering the effort to tap the country's potential.

There are emerging opportunities that Kenya can capitalize on to spur food production and agricultural development. Chief among these opportunities are the presence of a strong ICT industry, a dynamic private sector and strong policy research institutes and think tanks. Kenya outperforms its sub-Saharan Africa peers on mobile connectivity and the benefits of ICT are starting to be felt in sectors such as finance and agricultural markets and services. Kenya has become a global leader in mobile banking. The biggest challenge in tapping the full potential of ICT in FNSSA is inadequate policy support for the ICT-based solutions to be scaled up to national level.

iii. Greater effort required to ensure the relevance, adequacy and coherence of FNSSA policy decisions

Like most developing countries, Kenya faces serious challenges in budgeting that arise from inability to integrate government priorities and budget allocations. Among the major problems associated with the national planning and budgeting processes are: (i) mismatch between professed priorities and actual budget allocations – misalignment between the planning and the budgetary processes; and (ii) poor execution of the budget, mainly due to inadequate M&E and lack of accountability that results in mismanagement of resources and corruption.

At sectoral level, a new strategy, the Agriculture Sector Transformation and Growth Strategy (ASTGS) 2019–2029, was launched in 2019. One of the challenges of ASTGS is the fact that MTP III does not capture all the projects/pillars (identified by ASTGS) as MTP III was finalized before the ASTGS was concluded.

Lack of coherence and fragmentation are important features of agricultural policy development in Kenya. Devolution has rendered several policies redundant and the gaps in policy and regulatory environments have affected the operations of county governments.

Among the major challenges of mainstreaming cross-sectoral policies into relevant sector plans and programmes and developing an integrated strategy is lack of an effective coordination mechanism. For instance, the Implementation Framework for NFNSP has called for the establishment of the Food and Nutrition Security Council (FNSC) in the Office of the President, but this has yet to be translated into action.

Apart from the challenges of coherence and relevance of national, sectoral and cross-sectoral policies, food and agriculture policy decisions in Kenya suffer from: (i) inadequate support to smallholder agriculture; and (ii) distortions in markets and prices. Between 2013/2014 and 2017/2018, both the national and county governments allocated less than three and five percent of their budget to agriculture, respectively. More importantly, smallholders are not always the main beneficiaries of public investment in agriculture. Parastatals absorb a considerable proportion of the budget in agriculture. Larger producers often capture the benefits of subsidies in agriculture disproportionately.

In addition to absorbing a significant proportion of the limited government budget in agriculture, most of the SAGAs have had distortionary impact in the market, resulting in disincentives for producers and crowding out of private sector investment. The production of sugar, cotton, coffee and pyrethrum sharply declined while maize production stagnated because of distortions and disincentives.

iv. FNSSA policies need to be forward looking and inclusive to address emerging and structural problems

Policies in Kenya have not been sufficiently forward-looking and inclusive to address emerging and structural issues such as youth unemployment, gender inequalities and feminization of rural labour, safety net challenges, marginalization of areas affected by drought and climate change, food loss and waste, and food safety concerns. Faced with limited access to inputs and services, as well as disincentives to produce food for marketing, most young and largely male individuals out-migrate to urban areas. In Kenya, rural-urban migration is mainly responsible for rising urban unemployment and the proliferation of slums, where poverty is rampant and rural poverty transforms into urban poverty. Failure to tackle rural poverty has resulted in slums with extremely poor sanitary conditions in urban areas. Youth unemployment is also linked to rising radicalization that includes joining the al Shabab terror group. Attempts to address youth unemployment in the past, including the Youth Enterprise Development Fund, have been marred by corruption and inefficiency.

In addition to handling all domestic chores and looking after children and the elderly, women have taken farming responsibilities as outmigration of men intensified. It is reported that women run more than 80 percent of Kenya's farms. Feminization of the agricultural labour force, however, was not accompanied by government policies to address gender inequalities. Only 0.5 percent of women have access to financial services and only around six percent own land. Limited land ownership is the main reason for the low access to formal credit. Cultural norms and traditions restrict women’s ability to inherit land and contribute to widening gender gaps in farmland ownership.

ASALs are marginalized areas in Kenya characterized by inadequate human development (e.g. high levels of poverty, low literacy), high degree of land degradation, poor infrastructure, unfavourable markets, and exposure to high incidence of drought and flood. The artificial divide between humanitarian and development practice is rejected in government policies and strategies, but progress in achieving the target of ending hunger and tackling vulnerability to drought and chronic poverty has been very slow.

Reviews of social assistance programmes have highlighted the inadequacy of the existing

interventions. While repeated food transfer to poor families in the ASALs has kept people alive, it has not reduced poverty. Funding for social assistance is dependent on development partners (estimated at 90 percent), making it unreliable and unsustainable.

The scale of food loss and waste is enormous in Kenya and it has yet to be addressed. Postharvest loss is estimated at 30–40 percent, translating to 50 million bags valued at KSH30 billion every year. Kenya's staple food, maize, is the hardest hit due to rodents, poor handling and aflatoxin.

In Kenya, approximately 70 percent of all episodes of diarrhoea are attributable to ingestion of contaminated food and water. Aflatoxin poisonings, especially linked to maize, have been fatal in years such as 2004. In 2016, the World Bank estimated the financial burden of lost human capital, treating disease and trade loss associated with foodborne illnesses and food safety issues in the tens of billions of US dollars. The government has been promising (e.g. Food and Nutrition Security Policy 2011) to address the institutional gap in food safety issues and the public is still waiting for coordinated action.

Mitigation of climate change and sustainable management and utilization of natural resources are highlighted as critical in various policies and strategies of the Ministry of Agriculture, Livestock, Fisheries and Cooperatives (MoALFC) and others such as the Ministry of Environment and Forestry (MoEF). However, the different ministries rarely coordinate their activities, and smallholders and pastoralists have yet to benefit from policies aimed at tackling climate change.

v. Governance structure and institutional capacity at national level need to improve with a focus on effective organizational structure, participation, coordination and accountability

The Government of the Republic of Kenya is composed of a national government and 47 counties, each with its own semi-autonomous government structure. One major problem is the large number of government staff, absorbing a large and rapidly growing proportion of the budget. The huge number of elected members at the national and county levels, together with the executive and administrative staff at both levels, has resulted in a very large government, leaving a limited budget for investment to address structural and emerging problems.

MoALFC has five State Departments, each headed by a Principal Secretary. Each Department undertakes specialized functions, manages several projects and programmes, and oversees a number of parastatals. For instance, the State Department of Crops Development comprises three directorates (Agricultural Engineering; Crops Resources, Agribusiness and Marketing Development; and Agricultural Policy Research and Regulations) and oversees 17 parastatals that absorb a significant proportion of the budget. The current organizational structure of the ministry is similar to that when many state departments were ministries in their own right.

The operations of the ministry are supposed to be guided by an integrated and coordinated planning and budgeting process. However, there are four main challenges in the current planning frameworks: (i) limited coordination and integration between the five state departments; (ii) inadequate integration of the process of policy development with planning and budgeting; (iii) weak links between ASTGS/NAIP and the planning activities of each department; and (iv) limited alignment of the sector plans (ASTGS/ NAIP) to the national planning process (MTEF 2018/2019–2020/2021 and MTP III).

Agriculture sector coordination is another major weakness. Three attempts have been made to create a clear structure for coordination within the sector since 2010, but all have collapsed. One recent initiative is the Joint Agriculture Sector Steering Committee (JASSCOM), which has been found to work well in bringing the two levels of government together, but it has yet to be legalized. The FSNC has

been proposed to provide for inter-sectoral coordination, but the bill has yet to be enacted.

The constitution guarantees public participation and states that every citizen has the right of access to information, but progress in realizing these constitutional goals has been inadequate. Lack of institutionalized stakeholder participation has encouraged corrupt practices.

Cooperatives have several benefits, including good bargaining power and economies of scale for their members. In recent years, the performance of many cooperatives has been affected by delayed payment to farmers, limited access to credit facilities and inadequate managerial capacity. The then Ministry of Industry, Trade and Cooperatives drafted the Cooperative Development Policy in 2017, but the policy has yet to be enacted.

M&E is one of the weakest links in public service delivery. Several problems, including lack of a national M&E policy, inadequate resources, absence of stakeholder participation and lack of reliable agricultural statistics, have undermined the initiative to implement NIMES in Kenya. The ministry and the counties have yet to establish sound M&E systems based on effective inter-sectoral and inter-governmental coordination mechanisms. M&E also faces the challenge of weak agricultural statistics and information systems. Three key organizations in the production of agricultural statistics in Kenya, the Kenya National Bureau of Statistics (KNBS), the Ministry of Agriculture, Livestock, Fisheries and Cooperative, and county governments, need a coordinated structure to collect and share data and information.

vi. Governance and capacities in the counties need to improve for effective implementation of policies and programmes

According to the County Governments Act, the county plans shall include: the five year County Integrated Development Plan (CIDP), the County Sectoral Plan (ten year plan); the County Spatial Plan (ten-year plan using a Geographic Information System (GIS)) and city and municipal plans. These plans provide the basis for all budgeting. All the counties visited, Makueni, Kitui and Garissa, have elaborate CIDPs and Annual Development Plans and Budgets.

While there is fair alignment of the CIDPs to Vision 2030, MTPs and SDGs, there is no evidence to show that they are aligned to national ministry priorities. Although food and nutrition security indicators are part of the M&E frameworks, both at the outcome and at output levels for Makueni, Kitui and Garissa, there is no evidence that these indicators were informed by the National Food and Nutrition Security Policy or by the Nutrition Action Plan of the Ministry of Health.

There are major capacity weaknesses with regard to the numbers of extension staff, standards of Agriculture Training College (ATC) institutions and lack of dedicated units for M&E and nutrition functions. Decision-makers are aware of the magnitude of the problem but do not fully appreciate the need to take specific actions. Counties have some expertise for regular data collection but lack capacity for analysis and impact assessment.

Public participation is fairly practised at the community micro-project level (where communities have some degree of conception and oversight involvement). For larger investment projects and major decisions that require major investment/procurement, however, it can only be termed a cosmetic exercise to fulfil the legal requirement. Perhaps one exception in public participation is that of Makueni. Makueni County public participation framework has six levels, starting from the village household forum to village cluster forum, ward forum, sub-county forum and county peoples forum.

Each county ministry does try to track its activities, but M&E is substantially weak. While most of the upward reporting is covered under M&E frameworks (NIMES/CIMES), the weakest link emanates from the lack of an adequate enforcement system, especially given that county governments believe that they are on a par with the national government.

vii. Policy responses need to address political economy and governance challenges and opportunities at both national and county levels

Government can be a market actor or a market enabler in agricultural development. The choice between the two has remained a controversial political issue in Kenya. The Strategy for Revitalizing Agriculture, SRA (2004–2014) proposed a radical reform of the role of the state within the sector and encouraged private sector-led growth, but the reform was never carried out. No measure was taken to reform parastatals under the Agricultural Sector Development Strategy, ASDS (2010–2020) despite the promise to divest from all state corporations handling production, processing and marketing. The Big Four Agenda (2017), the ASTGS (2019) and the draft agriculture policy do not include parastatal reform as part of their strategy to transform Kenyan agriculture. As a result, SAGAs or parastatals have continued to operate. The majority of the parastatals that owe the treasury billions of shillings are in the agricultural sector and are unable to clear their debts, which stretch back decades.

Several political economy issues have affected policy implementation in the counties. Every governor, for instance, comes into office with his/her political, economic and social vision presaged in manifestos. Across the counties, there seems to be a silent strategy that gives priority in flow of funds, first to the governor's flagship projects, followed by projects of an emergency nature, then those driven by interests of MCAs, and lastly those adhering to the planning documents. Most counties allocated their budgets mainly to recurrent expenditures. Most infrastructure-related activities on FNSSA at both levels of government are preferred because of rent-seeking interest, where procurement for the infrastructure is usually given to relatives and friends of politicians.

Recent political economy developments have enhanced the prospect of improving the food and nutrition situation in Kenya. The goal of 100 percent food and nutrition security of the Big Four Agenda and devolution present a new opportunity to transform the food and agriculture sector as well as develop remote and marginal areas. The BBI report contains far-reaching changes that are consistent with improving the policy environment and governance to address hunger, poverty and unemployment.

viii. Key messages

Food insecurity and malnutrition levels are likely to worsen under a business-as-usual approach. Ending hunger and malnutrition in Kenya by 2030 through sustainable agriculture requires resilient, diversified and competitive small-scale farmers with equitable access to land, technology and markets. Achieving the SDG 2 and Malabo targets requires structural transformation of policy and governance landscape that accords priority to:

a. Building institutional capacity of MoALFC and county governments to ensure that:

- The process of FNSSA policy formulation, implementation, coordination and monitoring are designed with a focus on coherence and alignment between national, sectoral and county levels to transform smallholder agriculture and enhance food availability and accessibility.
- Cross-cutting issues such as marginal groups (e.g. women and youth) and areas (e.g. ASALs)

and cross-sectoral polices (e.g. NFNSP, NCCAP) are mainstreamed in overarching food and agriculture policies and strategies.

b. **Promoting a public-private policy dialogue forum** that includes major players such as the private sector and farmer organizations, policy think tanks, CSOs, NGOs, coordination and relevant government bodies to finalize pending policies, mainly the agriculture policy to serve as the overarching policy framework for the sector, and to implement the ASTGS and NAIP.

c. **Institutionalizing public participation** to ensure good governance and achieve inclusive development.

d. **Strengthening coordination activities at two levels:**

- Inter-governmental coordination that involves supporting JASSCOM to establish CASSCOM and initiate M&E activities at national and county level.
- Inter-sectoral coordination to establish the Food and Nutrition Security Council (FNSC) once the bill is passed. FNSC will oversee all cross-cutting issues, including food safety, post-harvest losses, gender, youth and climate resilience.

e. **Establishing agricultural knowledge and information management systems and M&E systems** to coordinate and establish one major hub of knowledge and an information management system for FNSSA by bringing together drivers of key initiatives such as GODAN, KAKIS, KIAMIS, Big Data, and budget tracking and reporting or budget transparency initiatives.

1. Introduction

What are the trends, geographical and socio-economic patterns, and prospects for eradicating food insecurity, malnutrition and poverty in the country? Key drivers of food insecurity, malnutrition and poverty.

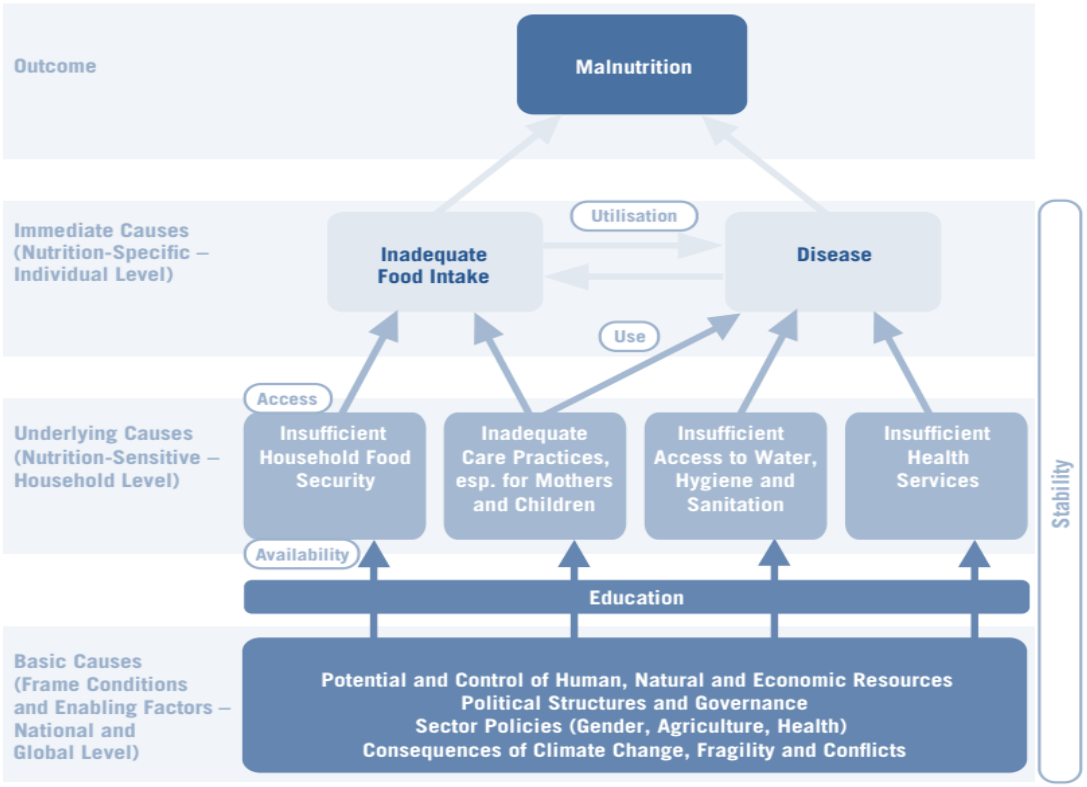
1.1. Background

Malnutrition refers to undernutrition that takes the form of stunting (low height for age), wasting (low weight for height), underweight (low weight for age) and micronutrient deficiencies or insufficiencies (a lack of important vitamins and minerals). Malnutrition also refers to overweight, obesity and diet-related non-communicable diseases (such as heart disease, stroke, diabetes and cancer)[1]. According to the 2015/2016 national survey (Kenya Integrated Household Survey)[2], 29.9 percent of the children were moderately stunted (short for their age) while 11.4 percent were severely stunted (-3SD). Overall, 13.0 percent of the children were reported to be moderately wasted (2.5 percent were severely wasted) while 6.7 percent of the children were underweight (2.6 percent being severely underweight). Micronutrient deficiency is a major problem in Kenya: 28 percent of children aged 6–23 months did not consume foods rich in vitamins while 64 percent of children age 6¬¬–23 months did not consume foods rich in iron the day or night preceding the survey, according to the 2014 Kenya Demographic and Health Survey[3]. Nine percent of women of reproductive age were thin or undernourished (BMI < 18.5 kg/m2). The incidence of undernourishment was higher among younger and rural women. Kenya is also experiencing an increase in non-communicable diseases, obesity and other conditions[4].

The immediate causes of malnutrition are inadequate dietary intake and disease, both of which directly impact an individual's nutritional status. These immediate causes are influenced by the following underlying factors: (i) access to and availability of food at household level; (ii) access to healthcare, water and sanitation; (iii) care, particularly for young children and women (breastfeeding practices, hygiene practices, women's workload etc.) at household and community levels; and (iv) formal and informal education levels and life skills. These underlying factors are, in turn, affected for better or for worse, by how human, natural and economic resources are controlled, aspects of political structures and governance, sector policies and legal environments, and consequences of climate change, fragility and conflicts (Figure 1). In Kenya, deficiencies in the political economy, governance, policies and consequences of climate change are all root causes of malnutrition.

[1] WHO. 2016. What is malnutrition? See: https://www.who.int/features/qa/malnutrition/en/
[2] KNBS 2018-KIHBS 2015/16
[3] KNBS 2015-DHS 2014
[4] *ibdi*

FIGURE 1: CAUSES OF MALNUTRITION



SOURCE: DEUTSCHE WELTHUNGERHILFE, SUSTAINABLE FOOD AND NUTRITION SECURITY, BONN, FEBRUARY 2015

1.2 Objectives of the synthesis report

The 2010 Kenya Constitution recognizes that every person has the right to the highest attainable standard of health, to be free from hunger, and to have adequate food of acceptable quality. Kenya's Food and Nutrition Security Policy (FNSP, 2011)[5], the overall policy framework to achieve food and nutrition security, declares that all Kenyans, throughout their life, enjoy at all times safe food in sufficient quantity and quality to satisfy their nutritional needs for optimal health. The Kenyan government committed itself to halving the number of undernourished people (WFS target) as well as halving the proportion of people suffering from undernourishment (MDG 1, target 1c) between 1990–1992 and 2014–2016. However, Kenya failed to achieve either target as the number of undernourished increased from 7.9 million in 1990–1992 to 9.9 million in 2014–2016, while the proportion of undernourished declined from 32.4 to 21.2 percent (only 34.5 percent decline) over the same period (FAO/SOFI, 2015).[6] Malnutrition trends in Kenya suggest that the SDG2 target of eliminating hunger by 2030 cannot be met under a business as usual scenario.

The country's ASAL region is proving to be a hard-core problem of malnutrition and associated food insecurity requiring a highly targeted approach to key drivers of malnutrition and poverty. The region has a perennial problem of inadequate food and people have died as a result of the latest (2019) episode of hunger. Kenya needs to intensify its efforts to eliminate hunger, considering the fact that donor funding, which has been playing a central role in supporting nutrition-related programmes, is likely to transition away from multilateral concessional assistance because of the middle-income

[5] Government of Kenya.2012. Food and Nutrition Security Policy

[6] FAO. 2015.The State of Food Insecurity in the World 2015. See: http://www.fao.org/3/a-i4646e.pdf

status of the country.[7]This report provides a synthesis of three ongoing studies designed to address questions related to the challenges of food and nutrition security and sustainable agriculture (FNSSA). Conducted under the FIRST Programme in Kenya, the questions comprise a policy effectiveness analysis whose broad objective is to assess Kenya's policies for achieving food and nutrition security and sustainable agriculture. The questions are:

a. What are the determinants of food insecurity, malnutrition and poverty at national level and in ASAL areas of Kenya? **(Study #1)**

- What are the major drivers and trends affecting food security, nutrition and poverty in the country? What are the key drivers of food insecurity, malnutrition and poverty in different agro-ecological zones, counties, and socio-economic groups? (Question 1).

b. To what extent is the policy response relevant, adequate and realistic? **(Study #2)**

- Is the current set of policies and strategies sufficiently focused and well-designed to adequately address immediate and underlying causes of food insecurity and malnutrition in the most impactful way both at a national scale and at the level of specific socio-economic groups, geographic areas, agro-ecological zones and counties that are facing 'stubborn' or more 'pervasive' problems of food insecurity and malnutrition? Is there sufficient focus on sustainable agriculture? (Question 2)
- Are current policies and strategies sufficiently forward looking to also address the food security and nutrition impacts of emerging problems related to, for example, migration, youth unemployment, gender empowerment, climate change, population growth, urbanization, etc.? Is there adequate effort made to take advantage of emerging opportunities? (Question 3)

c. To what extent is the policy implementation effective? **(Study #3)**

- Are the implementation mechanisms and capacities that are in place adequate to reach those most affected? (Question 4)
- To what extent are the existing policies and strategies adequately resourced, implemented, monitored and, in case of inadequate or incomplete implementation, what are the implications for the achievement of the intended food security and nutrition impacts? (Question 5)

• What are the political economy factors that may prevent the adoption and/or implementation of the right set of measures, actions to eradicate hunger, food insecurity and malnutrition by 2030? (Question 6)

d. What are priority areas for intensified support and accelerated action? **(Study #1, #2 and #3)**

- Considering the above analysis, what is the realism/credibility of the current set of policies and strategies? How inclusive are the policy interventions? (Question 7)
- Given a scenario of continued resource and capacity constraints, what areas of the policy framework and the implementation capacity gaps should be prioritized for resource allocation? (Question 8)

[7] Brookings. 2014. Africa in focus. See: https://www.brookings.edu/blog/africa-in-focus/2014/10/03/africa-in-the-news-kenya-becomes-a-middle-income-country-mo-ibrahim-index-released-south-sudan-peace-talks-yield-promise/

1.3 Methodology

The three studies, which this report attempts to summarize, relied on three major methodological approaches: (i) analysis of household data, specifically the Kenya Integrated Household Budget Survey (KIHBS) 2015/2016,[8] and national and international datasets, including FAOSTAT and FAO/GIEWS; (ii) reviews of relevant policy, strategy, plans and project/programme documents as well as studies and assessment reports in the area of food and agriculture; (iii) interviews with government officials and experts as well as representatives of key stakeholders such as farmers, civil society organizations and the private sector. The household data were used to determine major drivers and trends affecting food security, nutrition and poverty at national level and county levels (mainly ASALs). The econometric analysis, together with the analysis of time-series production and price data, allowed answering Question 1.

The review of national policy documents focussed on assessing the extent to which policy responses are based on underlying problems, empirical evidence, an inclusive approach, and principles of sustainable development at national and county level. Interviews were conducted to complement the reviews and respond to Questions 2 and 3, as well as part of Questions 4, 5 and 6 at national level. Documents designed to implement policies, strategies were reviewed, and interviews conducted in three counties, which served as case studies, to address Questions 4, 5 and 6 at county level.

At national level, the policy directorates and planning units of the Ministry of Agriculture, Livestock, Fisheries and Cooperative were the focus of the interviews. A staff member of the ministry conducted the interview using a template prepared for the purpose.

Three counties, namely Makueni, Kitui and Garissa (Figure 2), were visited in early December 2018, while a fourth county, Kilifi, had to be dropped because of security concerns. Makueni was chosen because of its best practices in public participation and good governance. Garissa and Kitui provided a good contrast to Makueni.

The county of Makueni covers approximately 8 035 square kilometres, most of which is arid and semi-arid.[9] Agriculture is the main income-earning activity, employing about 78 percent of the county population. The major agricultural value chain commodities with respect to income generation, food security, and production include local poultry, green grams, mango and dairy cows. In Makueni, farmers are adopting modern mango farming. About 61–80 percent of the population are involved in the value chain.[10]

Kitui County is one of the largest counties in the country, covering an area of 30 497 square kilometres,

[8] The 2015/16 KIHBS was conducted over a 12-month period and included a national sample of 24 000 households from rural and urban areas of the 47 counties to obtain up-to-date data on a range of socio-economic indicators used to monitor the implementation of development initiatives. Unlike the DHS data, the survey collected data on household characteristics, education, general health characteristics, nutrition, household poverty, and shocks to household welfare, among others.

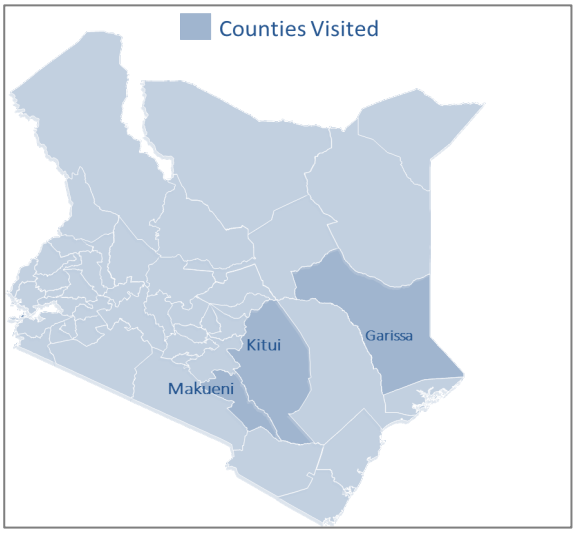
[9] The county is characterized by a low-lying terrain except for the hilly areas, and it receives long rains in March and April, and short rains in November and December. The rains are not evenly distributed across the county. The hilly regions of Kilungu and Mbooni receive about 800–1200 mm of rainfall (above normal) whereas the lower areas such as Kibwezi receive below normal rainfall of about 300 mm. The temperatures range between 20.2 and 35.80°C, with the hilly areas being relatively colder compared with the low-lying regions.

[10] MoALFC. 2016. Climate Risk Profile for Makueni. Kenya County Climate Risk Profile Series. The Kenya Ministry of Agriculture, Livestock, Fisheries and Cooperative (MoALFC), Nairobi, Kenya. See: https://cgspace.cgiar.org/rest/bitstreams/119944/retrieve

most of which is dry and hot.[11] Agriculture plays an important role in the county in terms of food provision, employment creation and is also a source of income and livelihoods. The sector contributes 87.3 percent of the household income in the county. Kitui County is primarily a livestock-rearing area, where livestock enterprises are a major source of livelihood. The main crops produced in the county include maize, green grams, beans, cowpeas, peas, millet and sorghum. The drought resistant varieties of these crops do well in the county. Mango production plays a significant role in diversifying and increasing household incomes.[12]

Garissa County covers an area of 44 175 square kilometres most of which is dry, flat and low-lying, rising from an altitude of 20 to 400 masl.[13] Livestock rearing through nomadic pastoralism is the dominant livelihood system. Crop farming is the main economic activity for the agropastoralists where it contributes up to 50 percent of household income. Agriculture provides about 87 percent of the average household income. Regarding the pastoralists, the men and boys look after the migrating animals, mostly cattle and camels. Women and girls manage sheep and goats that are kept closer to the homestead. For the agropastoralists, the women are in charge of most of the crop farming.[14]

FIGURE 2: COUNTIES VISITED TO ASSES POLICY IMPLEMENTATION



The Agriculture Policy Effectiveness and Public-Private Dialogue in Kenya Conference was held at Crowne Plaza Hotel on 15–16 May, 2019 to present the findings of the different studies and chart the way forward. The conference was co-hosted by MoALFC UNFAO, USAID-KCDMS and AgCK and brought together 137 participants drawn from across the different sub-sectors of agriculture and the two levels of government. The deliberations and recommendations are included in this report, particularly as part of the response to Question 8 and areas of the policy framework, and implementation capacity

[11] Kitui County is mostly dry and hot with temperatures ranging between 14°C during the coldest months (July–August) and 34°C during the hottest months (January–March). The county receives between 500 mm and 1050 mm of rainfall annually, with average rainfall of 900 mm a year.

[12] National Farmers Information Services. 2018. See: http://www.nafis.go.ke/wp-content/uploads/2018/01/Kitui-HH.pdf2_.pdf

[13] The county is classified as Arid Semi-Arid Land (ASAL), with an average annual rainfall of 250–350 mm. Rainfall is typified by short torrential downpours. Temperatures are relatively high and range between 28° and 38°C.

[14] MoALFC. 2016. Climate Risk Profile for Garissa County. Kenya County Climate Risk Profile Series. The Ministry of Agricuture, Livestock, Fisheries and Cooperative (MoALFC), Nairobi, Kenya. See: https://cgspace.cgiar.org/rest/bitstreams/119951/retrieve

gaps that should be prioritized for resource allocations.

The remainder of this report is organized as follows: Section 2 addresses key drivers of undernutrition at household level (Question 1), while section 3 reviews the state and trends for the food security situation (as a response to part of Question 1 and provides background information). Section 4 assesses the relevance, adequacy and rationality of FNSSA policy frameworks (Question 2), and section 5 examines if policies are sufficiently forward looking and inclusive to address emerging and structural problems (Question 3). Section 6 is about governance structure, inclusivity and institutional capacity (Questions 4, 5 and 7 at national level), while section 7 is about policy implementation at county level (Questions 4, 5 and 7 at county level). Section 8 discusses political economy challenges of food security at national and county level (Question 6); and Section 9 provides a conclusion with a focus on areas of the policy framework and implementation capacity gaps that should be prioritized for resource allocation (Question 8).

2. Malnutrition and levels of major drivers (household level analysis)

The percentage of children with a low height for age (stunted) reflects the cumulative effects of undernutrition and infections since, and even before, birth. Stunting can therefore be interpreted as an indication of poor environmental conditions or long-term restriction of a child's growth potential. On the other hand, the percentage of children who have low weight for age (underweight) can reflect wasting (low weight for height), indicating acute weight loss, stunting, or both. It is often claimed that underweight is a composite indicator and may therefore be difficult to interpret, according to the WHO Interpretation Guide. The discussion below thus focuses on stunting and wasting.

Child stunting results from long-term nutritional deprivation, which often leads to delayed mental development, poor school performance and reduced intellectual capacity, which in turn affects economic productivity at national level. Wasting in children is a symptom of acute undernutrition, usually as a consequence of insufficient food intake or a high incidence of infectious diseases, especially diarrhoea. Wasting impairs the functioning of the immune system and can lead to increased susceptibility to infectious diseases and an increased risk for death.[15]

The first part of the section shows child nutritional status of different groups using descriptive analysis (section 3.1). The descriptive tables are used to identify the most vulnerable groups. The second part identifies key drivers of child undernutrition based on econometric analysis (section 3.2). Both the descriptive and the econometric analyses have taken advantage of the recently released household data (Kenya Integrated Household Budget Survey, KIHBS 2015/2016). Data from household demographic surveys (DHS) do not capture food consumption expenditures, which are important correlates to the nutritional aspects, especially in a context where market dependency for household food requirements reaches more than 60 percent of household income. The KIHBS offers an opportunity to link a number of correlates presumed to influence malnutrition in addition to capturing derivatives to anthropometric measures.

2.1 Malnutrition levels in different groups – descriptive analysis

Child undernutrition is driven by several socio-economic and agro-ecological factors. The level of child stunting in rural areas is 30.7 percent compared to 26.4 percent in urban areas (Table 1). The figures for wasting (as well as underweight) are also higher in rural areas.[16] Levels of child malnutrition are generally higher in ASAL than in non-ASAL areas. Within ASAL areas, undernutrition levels are higher in semi-arid than in arid regions. Undernutrition varies slightly by gender of household head; stunting being slightly lower while underweight is slightly higher in households headed by women. Poverty is another major factor associated with child undernutrition: stunting, wasting and underweight rates are unsurprisingly higher among food-poor households than non-food-poor households.[17]

[15] WHO.2010. Nutrition Landscape Information System (NLIS) Country Profile Indicators. See https://www.who.int/nutrition/nlis_interpretation_guide.pdf

[16] It should be noted that the national figures calculated using the KIHBS are slightly lower than the national figures given by the KNBS. For instance, stunting (at national level) was calculated as 29.3 percent as opposed to 29.9 percent in the KNBS official report. Our calculated figures for wasting and underweight also differed slightly from the KBS figures. These differences could be attributed to software differences in the calculations of the Z-scores. For the KBS figures, see: https://sun-connect-news.org/fileadmin/DATEIEN/Dateien/New/KNBS_-_Basic_Report.pd

[17] Households are classified as food non-poor if they exhibit a monthly per-adult equivalent expenditure above KSH 1,953 else food poor in rural and peri-urban areas and KSH2,551 in urban areas, else poor. Accordingly, the national average food poverty headcount rate for individuals is estimated at 32 percent with substantial variation by residence and by county. The rate in rural areas is higher, at 35.9 percent, compared to 28.9 percent in peri-urban and 24.4 percent in core urban areas. Turkana is the poorest county (66.1 percent) followed by Mandera (61.9 percent), Samburu (60.1 percent), Busia (59.5 percent), West Pokot (57.3 percent), Marsabit (55.6 percent) and Tana River (55.4 percent). Only one of the seven

TABLE 1: STUNTING, WASTING AND UNDERWEIGHT BY AGRO-ECOLOGY, POVERTY STATUS AND GENDER

Agro-ecology	Type of malnutrition	Food poverty status	Gender of HH		Total
			Female	Male	
Arid	Stunting	Non-poor	27	21.3	**23.1**
		Poor	***31.9***	***29.7***	**30.5**
	Underweight	Non-poor	30.7	26.3	**27.7**
		Poor	***37***	***40.4***	**39.1**
	Wasting	Non-poor	29.2	29.8	**29.6**
		Poor	**32.9**	**34.4**	**33.9**
Semi-arid	Stunting	Non-poor	27.3	35.2	**33**
		Poor	***36.2***	***38.3***	**37.6**
	Underweight	Non-poor	12.4	12.1	**12.2**
		Poor	***20.6***	***20.8***	**20.7**
	Wasting	Non-poor	5.7	5.3	**5.4**
		Poor	9.4	8.2	**8.6**
Non-ASAL	Stunting	Non-poor	26.6	27.9	**27.6**
		Poor	***34***	***35***	**34.7**
	Underweight	Non-poor	7.5	9.9	**9.2**
		Poor	12.4	10.1	**10.8**
	Wasting	Non-poor	4	4.8	**4.6**
		Poor	4.5	3.5	**3.7**
National	**Stunting**	---	27.9	29.9	29.3
	Underweight	---	13.9	11.9	12.5
	Wasting	---	7.7	7.3	7.4
		Stunting	**Underweight**	**Wasting**	---
	Urban	26.4	9.5	6.5	---
	Rural	30.7	13.9	7.8	---

Table 1 presents a cross tabulation of malnutrition by agro-ecology, poverty status and gender of household head. Three important results can be discerned from the table. First, rates of child stunting, wasting and underweight are highest among food-poor families in all agro-ecological zones of the country. Stunting is particularly high for both poor and non-poor (food) families in semi-arid regions. **Addressing food poverty through measures such as food or cash transfers and school feeding programmes can have a positive impact in the short term.**

Second, rates of child wasting and underweight are exceptionally high in arid areas for both food poor and non-poor families. Wasting rates exceeded 30 percent for both poor and non-poor families in arid areas where pastoralism is often the only source of livelihood. **Because incidence of wasting that**

(Busia) is a non-ASAL county. See https://sun-connect-news.org/fileadmin/DATEIEN/Dateien/New/KNBS_-_Basic_Report.pdf

exceeds 15 percent is considered critical, according to WHO Guide,[18] the situation in the arid counties is alarming and requires urgent attention.

Third, no marked difference is observed when child stunting is broken down by gender of household head. However, women (of reproductive age of 15–49) are more likely to be thinner in ASAL counties. The proportion of women who are thin is much higher in the arid counties of Baringo (25 percent), Garissa (33 percent), Isiolo (24 percent), Mandera (24 percent), Marsabit (27 percent), Samburu (41 percent), Tana River (29 percent), Turkana (54 percent) and Wajir (28 percent) than the national average (8.9 percent) (KDHS, 2014).[19] Chronically undernourished women are likely to give birth to undernourished babies as shown below (section 3.2.2).

2.2. Key drivers of child undernutrition – regression analysis

It has been established that undernutrition, including stunting and wasting, results from a combination of closely linked, interdependent, complex agricultural, environmental, socioeconomic, demographic, and health factors at the community, household, and individual levels. A large proportion of the mediating factors are reported to be climate/weather sensitive.[20] Econometric estimates were thus obtained by running a logistic regression of the anthropometric indicators of undernutrition against different household characteristics, agro-ecological differences, incidence of shocks, residence (urban or rural), access to infrastructure and other variables. The dependent variables, stunting, underweight and wasting, were transformed into dummies (e.g. whether the child is stunted or not) as multivariate logistic regressions. An OLS regression was also fitted using rates of stunting, underweight and wasting as continuous variables to check the robustness of the results (See Table 2, Annex I).

2.2.1 ASSOCIATION WITH AGRO-ECOLOGY, SEASONALITY AND SHOCKS

Agro-ecology

Agro-ecological characteristics were found to be associated with nutritional status in both the logistic and OLS regressions, confirming the descriptive results in section 3.1 above. Relative to arid areas, the probability of a child being stunted is higher in semi-arid and non-ASAL agro-ecological zones while the probability of a child being wasted is significantly higher in arid areas (Table 2). The same pattern emerges when a separate regression is run for urban and rural areas. In particular, a regression for rural areas alone shows that the probability of wasting is significantly higher in arid areas relative to the other agro-ecological zones (semi-arid and non-ASAL). This result is consistent with a study of wasting among vulnerable child populations in the Horn of Africa (Chotard, *et al.*, 2010)[21], which found a higher prevalence of wasting among pastoral child populations (arid areas) than agricultural (non-ASAL) or mixed livelihood (semi-arid) child populations. While cereals are important for children of agriculturalists and agropastoralists (as a source of energy), those of pastoralists have significant intakes of milk (rich in protein, calcium, iron and other micronutrients), which favour continued growth in height rather than in soft tissue (thinner but taller). For agriculturalists, energy intake may

[18] WHO. 2010. Op. cit. https://apps.who.int/iris/bitstream/handle/10665/44397/9789241599955_eng.pdf;jsessionid=177DE0E765896DF565F95679451EBC3C?sequence=1

[19] KNBS 2015, Demographic Health Survey 2014

[20] Revati K. Phalkey, Clara Aranda-Jan, Sabrina Marx, Bernhard Höfle, Rainer Sauerborn. 2015. See. Systematic review of current efforts to quantify the impacts of climate change on undernutrition. Proc Natl Acad Sci U S A. 2015 Aug 18; 112(33): E4522–E4529. See:https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4547305/

[21] Sophie Chotard, John B. Mason, Nicholas P. Oliphant, Saba Mebrahtu, and Peter Hailey. 2010. Food and Nutrition Bulletin, vol. 31, no. 3 (supplement). See: https://journals.sagepub.com/doi/pdf/10.1177/15648265100313S302

be better, but diet quality (protein and micronutrients) is poor, leading to stunting.

In semi-arid and non-ASAL areas, a broader approach that promotes diet diversity and consumption of animal-source food, maternal nutrition, improved feeding practices, WASH programmes and access to healthcare need to be prioritized for improved linear growth with greater focus on the first two years of a child's life.[22] [23] The positive role of milk in height determination (the Dutch example)[24] needs to be considered in educating households with dairy animals to give more milk to their children. **Available evidence also shows that children may suffer simultaneously from both conditions (*WaSt*), which need to be addressed jointly as a common issue. Wasting and stunting also have a common cause and may not need to be addressed as separate issues**.[25]

Seasonality

Seasonality was measured in annual quarters. Data were collected in various clusters during each quarter.[26] The results show that seasonal trends influence the likelihood of a child being undernourished. Specifically, the prevalence of wasting declines significantly in Q2, Q3 and Q4, relative to Q1 (season of harvest). Food availability, access and utilization could be adversely affected once the harvesting season (Q1) is over. The effect of seasonality is more of a rural phenomenon, where Q1 corresponds to season of plenty (low prices of staples and more diversified diet) and better nutritional outcome (compared to the other seasons). The seasonal effect is also stronger in arid compared to other agro-ecological zones, A study by Chotard *et al.* (2010)[27] also reported that fluctuations in wasting were greater among pastoralists during years of drought. Unlike the agriculturalists and agro-pastoralists, who may have stored grain (from own harvest), pastoralists may be heavily dependent on markets, which tend to fluctuate with seasonal supply conditions. **Safety net programmes that include stabilizing pastoralists' income and grain markets are needed to cushion the impact of seasonality in the arid areas.**

Shocks

Households face shocks that affect the livelihood patterns and consequently patterns of food consumption. The likelihood of a child being stunted as well as being wasted (also underweight) increased for families reporting crop damage. A similar negative impact of drought/flood and livestock loss was observed, but was not as significant as crop pests and diseases. A more widespread availability of safety net programmes in ASAL areas (especially arid regions) may have contributed to the reduced impact of drought or floods on child nutrition. A similar safety net or insurance programme for incidences of crop diseases and pests in non-ASAL and semi-arid areas can have a positive impact on child nutrition. **Safety net or insurance programmes help to safeguard productive capacity and food security of smallholders in the presence of shocks. Resilience to food and nutrition**

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[22] Action Against Hunger. 2017. A Practical Package for Stunting Reduction Contribution to malnutrition reduction through a multi-sector approach. See https://www.actionagainsthunger.org/sites/default/files/publications/2017_BabyWASH_EN.pdf

[23] WHO. 2015. WHA Global Nutrition Targets 2025: Stunting Policy Brief. See: https://www.who.int/nutrition/topics/globaltargets_stunting_policybrief.pdf

[24] BBC News. 2015. A nation of tall cheese-eaters. See: https://www.bbc.com/news/magazine-34380895

[25] Myatt, M., Khara, T., Schoenbuchner, S. et al. Children who are both wasted and stunted are also underweight and have a high risk of death: a descriptive epidemiology of multiple anthropometric deficits using data from 51 countries. Arch Public Health 76, 28 (2018) doi:10.1186/s13690-018-0277-1: See: https://archpublichealth.biomedcentral.com/articles/10.1186/s13690-018-0277-1

[26] Quarter 1 (Q_1) is the months of September to November and corresponds to harvest season; Quarter 2 is December to February (immediately after harvest but dry season); Quarter 3 is between March and May (lean season); and Quarter 4 is June to August (slightly lean season).

[27] Sophie Chotard, John B. Mason, Nicholas P. Oliphant, Saba Mebrahtu, and Peter Hailey. 2010. Food and Nutrition Bulletin, vol. 31, no. 3 (supplement). See: https://journals.sagepub.com/doi/pdf/10.1177/15648265100313S302

insecurity can be achieved through investment in protective measures during and prior to the shocks.[28] Investment in market infrastructure is even more critical to protect pastoralists and agropastoralists from climatic and seasonal shocks because existing market mechanisms do not offer adequate compensation for their products. Livestock conditions and prices often deteriorate when prices of desperately needed staples soar, especially during the long dry seasons and drought periods.[29] Interventions to reduce information asymmetries and lower transaction costs are necessary to protect smallholder farmers against risk exposure.[30]

2.2.2 ASSOCIATION WITH HOUSEHOLD AND MOTHER CHARACTERISTICS AND ACCESS TO FOOD

Gender of household head and access to food

Several household characteristics, including gender of household head, source of food and status of food poverty, were considered in the regression analysis. The likelihood of a child being stunted or wasted showed no significant association with gender of the household head. Male-headed households did not outperform female-headed households with respect to child nutritional status. However, the situation appeared different when the analysis was done by agro-ecology (Annex I). Within semi-arid areas, a child from female-headed households had a higher probability of being stunted and wasted than a child from male-headed households. No such difference was observed in the other agro-ecological zones. **In semi-arid areas, women may find it difficult to work on-farm and look after livestock as an agropastoralist. Under conditions of declining resources and uncertain weather conditions, female-headed households are likely to struggle more to feed their family and provide for their children**.[31]

Different indicators were used to assess the impact of access to food on child nutrition. Producing one's own food is positively associated with being of normal growth: no stunting or wasting. A similar positive relationship was observed in the case of households maintaining food stocks. Food stocks may have cushioned households from price shocks that would have negatively affected their consumption and hence nutrition status. Food non-poor families also outperformed food poor ones (OLS regression, Annex II), especially with respect to reducing wasting. **Food poverty can lead to mothers accessing lower quality food of limited dietary diversity: lacking in fruit, vegetables, and energy dense food.** These findings confirm the positive impact of growing one's own food, investing in food stock or spending adequately on food (food non-poor) and on child undernutrition in a situation where most people are engaged in a vulnerable and uncertain livelihood involving subsistence farming, nomadic pastoralism or informal employment. **A sustainable increase in food production and productivity of small farmers and pastoralists can boost access to one's own food and enhance food and nutrition security. According to the World Bank**[32]**, increasing the production**

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28 Niles MT, Salerno JD (2018) A crosscountry analysis of climate shocks and smallholder food insecurity. PLoS ONE 13(2): e0192928. See: https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0192928&type=printable

[29] Michele Nori Jason Switzer and Alec Crawford. 2005. Herding on the Brink Towards a Global Survey of Pastoral Communities and Conflict. https://www.iisd.org/pdf/2005/security_herding_on_brink.pdf

[30] Christopher B. Barrett , Paul Christian and Bekele A. Shiferaw. 2017. The Structural Transformation of African Agriculture and Rural Spaces: Introduction to a Special Section. See: http://barrett.dyson.cornell.edu/files/papers/The%20Structural%20Transformation%20of%20African%20Agriculture%20and%20Rural%20Spaces%2026Aug%20final%20version.pdf

[31] Jesse T. Njoka. 2016. Kenya: Country situation assessment. PRISE. See: http://prise.odi.org/wp-content/uploads/2016/01/Low-Res_Kenya-CSA.pdf

[32] Increasing nutrient dense food production for home consumption shows some evidence of improving diets and micronutrient status. In households that consume at least some of what they produce, an increase in production can directly affect the diet and nutritional status of household members

of nutrient dense food for home consumption improves diets and micronutrient status.

Household size, as measured on an adult equivalent scale, was negatively related to the nutritional status of children (Table 2). There is a higher likelihood that children from larger families have higher chances of being stunted. Children in large families may compete for food or a mother's care and attention.[33] **Improved access to family planning services is central to women's empowerment, reducing poverty and achieving sustainable development in Kenya**.[34]

Mother and child characteristics

The prevalence of being normal (non-stunted) increased with age (Table 2). Older children are less at risk compared to younger ones. The results in the case of wasting showed a similar pattern. The probability of being stunted and wasted was higher for girls than for boys. **Any effort aimed at reducing child malnutrition needs to give greater attention to younger children and girls.**

Children from households with educated mothers scored better for nutritional status than those with less or no education. The likelihood of a child being normal increased with a mother's level of education. Mothers with post-secondary education, compared to those with duksi and madrasa or no education, were associated with better nutritional outcome. **Educated mothers are likely to have better understanding of nutritional information and apply it to their children.**

The prevalence of stunting was lower among normal and obese mothers than among thin or stunted mothers.[35] Other studies[36] in Africa have also concluded that thin mothers are more likely to have stunted children. Maternal nutrition is known to influence foetal growth and birth weight. According to WHO[37], the consequences of poor nutritional status and inadequate nutritional intake not only directly affects women's health status but may also have a negative impact on birth weight and early child development. There is also an intergenerational link between maternal and child nutrition, with a small mother likely to have small babies who in turn grow to become small mothers, causing the cycle of undernutrition to be repeated over generations (UNICEF, 2009)[38]. Special maternal programmes are needed to reduce the incidence of wasting in the arid counties. **Women in pastoralist communities in Kenya are also the most vulnerable because they are not always involved in decision-making and are less likely to have access to family resources and finances.**[39]

2.2.3 CHILD CARE AND WATER AND SANITATION

Good nutritional practices include optimal breastfeeding, complementary feeding (after six months) and improved hygiene practices. The duration of breastfeeding was found to have mixed (negative

[33] KO Ajao, EO Ojofeitimi, AA Adebayo , AO Fatusi and OT Afolabi. 2010. Influence of Family Size, Household Food Security Status, and Child Care Practices on the Nutritional Status of Under-five Children in Ile-Ife, Nigeria. African Journal of Reproductive Health December; 14(4): 123. See: http://www.bioline.org.br/pdf?rh10072

[34] UNFPA Kenya. 2018. Family Planning is a Human Right. See: https://kenya.unfpa.org/en/news/family-planning-human-right-7

[35] Mothers categorized as thin (BMI<18.5), normal (18.5<=BMI<=24.99) and obese (BMI>25.0)

[36] Ying Ying Yang, Gabriella Kaddu, David Ngendahimana, Hope Barkoukis, Darcy Freedman, Yovani AM Lubaale, Ezekiel Mupere, and Paul M Bakaki. 2018. Trends and determinants of stunting among under-5s: evidence from the 1995, 2001, 2006 and 2011 Uganda Demographic and Health Surveys. Public Health Nutr. 2018 Nov; 21(16): 2915–2928. See: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6190071/

[37] WHO. 2006. Nutrition, Feto-maternal nutrition and low birth weight. See: https://www.who.int/nutrition/topics/feto_maternal/en/

[38] UNICEF. 2009. Tracking Progress on Child and Maternal Nutrition a Survival and Development Priority. See: https://www.unicef.org/publications/files/Tracking_Progress_on_Child_and_Maternal_Nutrition_EN_110309.pdf

[39] Bobadoye A.O. , Ogara W.O., Ouma G.O., Onono J.O. 2016. Assessing Climate Change Adaptation Strategies among Rural Maasai pastoralist in Kenya. American Journal of Rural Development, 2016, Vol. 4, No. 6, 120–128. See: https://pdfs.semanticscholar.org/1b52/f1bfd2b84376986747d108a40112f25ff593.pdf

and positive) association with the likelihood of children being normal. However, exclusive breastfeeding beyond six months was associated with higher prevalence of stunting and wasting, relative to exclusive breastfeeding of less than six months. Breastfeeding after six months may deny the child solid foods, which are important for growth.[40] Measles vaccination reduced the likelihood of stunting and wasting even though the coefficient of correlation is weakly significant in a limited number of cases.

Access to improved water and toilet facilities was found to have mixed and non-significant outcomes in most of the regression equations. The unexpected results could be due to measurement problems, but other studies also found similar results for water and toilet facilities in Kenya.[41] While these variables are environmental indicators, they may not measure well the quality of the environment in which children are cared for due to unobserved attributes of water and sanitation. For instance, the burden of fetching water falls on women and girls in rural Kenya. In drought years, the streams dry up and women are forced to spend up to five hours a day walking to streams further away and standing in line to get water for the family.[42] At times of droughts in Marsabit (one of the arid counties), women and girls need to spend more time in fetching water, resulting in girls dropping out of school.[43] Women and girls are also the ones to suffer most (on their own and for their children) from lack of adequate sanitation and toilet facilities.[44] Improved access to clean water and sanitation transforms the lives of women and girls. It can get girls back into school, women into income-generating activities, in addition to improving health and well-being of the society.

2.2.4 GOVERNANCE AND CORRUPTION CHALLENGES

There is a growing recognition of the critical role played by factors such as political commitment, leadership, and accountability in creating a more supportive environment for child nutrition. It has been impossible to determine statistically the importance of governance and corruption in this study. Indicators (variables) of governance such as bureaucratic effectiveness, law and order and corruption often do not vary for a country for one point in time cross-sectional data. Fortunately, a recent study by Smith and Haddad (2015)[45] carried out a cross-country econometric analysis using panel data from 116 developing countries collected over 1970–2012 to determine the impact of the governance indicators and other variables on child undernutrition.

The study defined governance as the relationship between the state, citizens and intermediate institutions that promotes or impedes development generally, and children's nutrition status more specifically. Five dimensions of governance were used: (i) bureaucratic effectiveness, which concerns the quality of public services and the civil service, including policy formulation and implementation,

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[40] Medela. 2019(online). Weaning: When and how to stop breastfeeding? See: https://www.medela.com/breastfeeding/mums-journey/weaning

[41] Kabubo-Mariara, J., Ndenge, G.K, and Mwabu, D.K. 2008. Determinants of Children's Nutritional Status in Kenya: Evidence from Demographic and Health Surveys. Journal of African Economies, Volume 18, Issue 3, June 2009, Pages 363–387. See: https://doi.org/10.1093/jae/ejn024

[42] Women's Advancement Deeply. 2018. In Kenya Access to Water Gives Women Time to Make Their Own Money: See: https://www.newsdeeply.com/womensadvancement/articles/2018/05/16/in-kenya-access-to-water-gives-women-time-to-make-their-own-money

[43] Marsabit County. 2016. Climate Change, Biodiversity and Gender in the Indigenous Peoples Community Kenya. See: http://indigenous-info-kenya.net/wp-content/uploads/2016/03/Case-study-Edna.pdf

[44] UN-Habitat. 2006. Sanitation: A woman's issue. See: http://mirror.unhabitat.org/documents/media_centre/APMC/Sanitation%20-%20A%20womans%20issue.pdf

[45] Smith, Lisa and Haddad, Lawrence 2000. Explaining Child Malnutrition In Developing Countries: A Cross-Country Analysis. See: https://www.researchgate.net/publication/5056933_Explaining_Child_Malnutrition_In_Developing_Countries_A_Cross-Country_Analysis

and regulation of the private sector; (ii) law and order, which refers to a solid and impartial legal system along with strong popular observance of the law; (iii) political stability, which is about government that is formed through constitutional elections and non-violent means. Both law and order and political stability are required for governments to fulfil their role of protecting citizens from violence; (iv) restraint of corruption, which is restraint of the exercise of public power for private gain; and (v) democratic accountability. The results confirmed that all five contribute to reductions in child stunting through facilitating increased access to safe water, sanitation, women's educational attainment and availability of quality food in the country.

A national ethics and corruption survey in 2017[46] ranked corruption (43.6 percent) as first the major problem facing Kenya, while poverty (37 percent) was rated second, followed by **u**nemployment (32.2 percent), unfavourable economic conditions (22.2 percent), political instability (21.8 percent), and tribalism/negative ethnicity (17.1 percent), respectively. Government actions in major sectors such as land (44.5 percent), health care (43.9 percent), water (42.7 percent), management of devolved funds (38.4 percent), roads (38.3 percent), insecurity/crime (36.0 percent) and agriculture (34.1 percent) were rated as poor. Further analysis by county indicated that ASAL counties, namely Wajir (90 percent), recorded the highest proportion of service seekers who paid bribes to obtain government services followed by Meru (88.5 percent), Trans Nzoia (83.3 percent) and Kaiako (81.5 percent). **It is important to note that women have limited access to land despite providing 89 percent of the labour in substance farming and serve as head of 32 percent of households, and despite the passing of the Matrimonial Property Act six years ago. Because of patriarchal traditions and lack of awareness about their rights only one percent of the land titles are in women's names, while five percent own land jointly with men.**[47]

[46] Ethics and Anti-Corruption Commission. 2018. National Ethics and Corruption Survey 2917. See: https://www.eacc.go.ke/wp-content/uploads/2018/11/EACC-ETHICS-AND-CORRUPTION-SURVEY-2017.pdf

[47] ActionAid Kenya , GROOTS Kenya and LANDac. 2018. Securing women's land rights Scaling for impact in Kenya. See: http://www.landgovernance.org/assets/20181127-A4-Working-paper-Kenya.pdf

TABLE 2: DETERMINANTS OF STUNTING, UNDERWEIGHT AND WASTING (LOGISTIC REGRESSION) – OVERALL SAMPLE, URBAN AND RURAL

Dependent variables: Stunting [1=Normal (z-score>-2.0); 0 Stunted)]; Underweight [1= Normal (z-score>=-2.0); 0 Underweight)]; Wasting [1=Normal (z-score>=-2.0); 0 Emaciated)]										
					Stunting		Underweight		Wasting	
		Stunting	Underweight	Wasting	Urban	Rural	Urban	Rural	Urban	Rural
Child	Age of the Child	0.494**	-0.053	0.591*	1.908***	0.239	2.064**	-0.463	2.296**	0.362
	Sex of the child (1=Male, 0=Female)	-0.386***	-0.387**	-0.471*	-0.312	-0.418***	-0.464	-0.336*	-0.385	-0.43
	Child participated in Community Nutrition Program (1=Yes, 0=No)	-0.181	-0.348	-0.083	0.17	-0.269	-1.358***	-0.153	-1.489*	-0.121
	Child participates in Grown Monitoring Clinic (1=Yes, 0=No)	0.364*	0.500*	0.315	0.844**	0.201	1.067	0.553**	1.571*	0.278
	Child Had Diarrhoea 2 weeks before the date of interview (1=Yes, 0=No)	-0.44	-0.285	-0.521	0.464	-0.700**	-0.474	-0.369	-1.17	-0.341
Mothers	Mothers Education (Reference-Informal (Duksi & Madrasa)/None)									
	Primary	0.213	0.314	-0.644*	0.811	0.214	0.475	0.308	0.004	-0.532
	Secondary	0.224	0.523	-0.332	0.626	0.38	0.398	0.811*	-0.044	-0.006
	Post-Secondary	0.869**	2.310***	-0.412	2.021**	0.951*	4.744***	1.454*	1.542	(empty)
	Mother's Age	0.146	-0.085	-0.279	0.181	0.218	-0.034	-0.151	-1.239	-0.154
	Mother's Weight (Thin <18.5 BMI)-Reference category									
	Mother's Weight (18.5 =<BMI<24.99)-Normal	0.490**	0.494*	0.431	0.795	0.418	1.676	0.457	2.843**	0.273
	Mother's Weight (Obese >25.0 BMI)	0.621**	1.276***	0.644	1.791***	0.369	2.728**	1.112***	1.523*	1.026*
Household	Sex of the HH (1=Male, 0=Female)	-0.227	-0.107	-0.278	-0.325	-0.132	0.825	-0.172	0.532	-0.356
	Own food Expenditure	0.255***	0.267***	0.108	0.540***	0.200**	0.502**	0.269***	0.364	0.124
	Food Stocks	0.109***	-0.009	0.008	0.05	0.133***	-0.147	0.021	0.337	0.003
	Household Size	-0.646***	-0.226	-0.049	-1.182**	-0.652**	-1.557	0.026	-0.99	-0.033
	Food Poverty (0=Food Poor (<1955 for Rural & <2555 for Urban); 1 Non-Food poor)	0.17	0.234	0.415	0.867*	0.021	0.297	0.162	2.971**	0.165
Health Care	No. of Months of Breastfeeding (natural logs)	0.414***	-0.04	-0.286	-0.719	0.499***	-3.327**	0.101	0.285	-0.283
	Excl. Breastfeeding (1 if =6 months, 0 Otherwise)	-0.118	-0.125	-0.043	0.053	-0.139	0.312	-0.112	-0.133	-0.05
	Excl. Breastfeeding_(1 if >6 months, 0 Otherwise)	-0.018	-0.514	-1.319***	-1.198**	0.502	-2.797***	-0.021	-3.085***	-0.731**
	Excl. Breastfeeding Less (1 if < 6 months, 0= Otherwise)-Reference	(omitted)	(omitted)	(omitted)						
	Measles Vaccination (1=Yes, 0=N0)	0.206	0.388*	0.475	0.443	0.253	(omitted)	0.452*	(omitted)	0.499
Infrastructure	Improved Water access (1=Improved, 0=Unimproved)	0.086	-0.066	0.104	-0.647	0.259	-0.049	-0.009	0.413	0.089
	Improved toilets (1=Improved; 0=Unimproved)	-0.214	-0.241	0.065	0.21	-0.271	-0.06	-0.249	-0.374	-0.025
	Electricity Connection (1=Yes, 0=No)	0.304	0.03	-0.194	-0.249	0.765**	-1.355*	0.639	0.03	0.033
Reported Shocks (1=Yes, 0=No)	Disease & Pests Outbreak	-1.222***	-1.985***	(omitted)	-2.288**	-1.167***	-1.542	-1.935***	(omitted)	(omitted)
	Drought and Floods	-0.186	-0.547	0.009	-0.656	-0.121	-2.666***	-0.078	3.072*	0.035
	Livestock Loss	-0.396	-0.29	-0.554	0.062	-0.409	-1.015	-0.101	-3.063***	0.204
Seasonality (Reference Q1 Sept-Nov	Q2: December to Feb	-0.324	-0.32	-1.515***	-0.405	-0.249	0.047	-0.069	-2.759	-1.188***
	Q3:March-May	-0.298	-0.312	-1.539***	-0.62	-0.292	0.386	-0.371	-0.948	-1.446***
	Q4: June-August	-0.216	-0.072	-1.111***	-0.308	-0.261	0.374	-0.181	-1.552	-1.051**
Residence	Residence (1=Rural, 0=Urban)	0.109	0.039	-0.278						
Agro-Ecology (Ref-Arid Zone)	Semi-Arid	-0.601**	0.798***	2.269***	-1.334	-0.471	1.049	0.830***	2.347	2.349***
	Non-ASAL	-0.619**	1.190***	2.806***	-1.000	-0.44	1.588	1.405***	3.406*	2.656***
	Constant	-4.870***	-1.577	0.361	-9.012***	-3.952***	0.331	-1.249	-9.686*	0.151
	N	1788	1788	1737	379	1409	377	1409	368	1294
	r2_									
	chi2	87.9	202	261	55	82	52.4	185	92.9	256
	ll (Log Likelihood)	-4.20E+05	-2.60E+05	-1.40E+05	-66580	-3.40E+05	-31843	-2.10E+05	-15373	-1.20E+05

Legend: *p<.1; **p<.05; ***p<.01

3. Trends and prospects for food and nutrition security and sustainable agriculture (national)

Overall poverty in Kenya (headcount rate for individuals) remains high although it declined from 46.8 percent in 2005/2006 to 36.1 percent in 2015/2016. Food poverty, which is closely correlated with overall poverty, is also high, but declined from 45.8 percent in 2005/2006 to 32.0 percent in 2015/2016. Both overall and food poverty are higher in rural than in urban (peri-urban and core-urban) areas. In 2015/2016, levels of poverty remained exceptionally high in five rural counties, namely Turkana (79.4 percent), Mandera (77.6 percent), Samburu (75.8 percent), Busia (69.3 percent) and Garissa (65.5 percent). With the exception of Busia, these are all ASAL counties. Food poverty[48] incidence levels affect more than half of the population in ASAL counties: Turkana (66.1 percent), Mandera (61.9 percent), Samburu (60.1 percent), Busia (59.5 percent), West Pokot (57.3 percent), Marsabit (55.6 percent) and Tana River (55.4 percent).[49]

The agricultural sector is key to improving poverty and food insecurity in Kenya. Food availability, access, stability and utilization are all strongly linked to sector performance. Agriculture is the mainstay of the economy, contributing 26 percent to GDP directly and 27 percent indirectly through linkages with manufacturing, distribution and other service-related sectors. Agriculture accounts for 65 percent of the export earnings and provides the livelihood (employment, income and food security needs) for more than 80 percent of the Kenyan population. It contributes to improving nutrition through production of safe, diverse and nutrient dense foods.[50] As shown below, it is the poor performance of the food and agriculture sector that has made it impossible to make a significant improvement in food security.

3.1 Trends in food production/productivity and challenges to sustainable growth

Unlike many other countries, agricultural productivity in Kenya has been stagnating and even declining in recent years. For instance, maize yields in Kenya declined from 1.7 tonnes per hectare in 1990 to 1.5 tonnes per hectare in 2016, while in South Africa (a major African exporter of maize) yields have tripled to over 6 tonnes per hectare. In the US (a major global exporter of maize), maize yields increased from 7.4 tonnes per hectare in 1990 to 11.1 tonnes per hectare in 2016 (Figure 3).

The declining trend is not limited to maize alone. Wheat and rice yields also declined between 1990 and 2016 (Figure 3a). Currently, Kenya produces only about 15 percent and 10 percent of its wheat and rice requirements, respectively.

[48] Households and individuals whose monthly adult equivalent food consumption expenditure per person is less than KSH 1,954 in rural and peri-urban areas and less than KSH 2,551 in core-urban areas respectively are considered to be food poor or live in "food poverty". "Overall poverty" refers to monthly adult equivalent total consumption expenditure per person of less than KSH 3,252 in rural and peri-urban areas and less than KSH 5,995 in core-urban areas.
[49] KNBS. 2018. Basic Report on Well-Being in Kenya. Based on the 2015/16 Kenya integrated Household Budget survey (KIHBs).
[50] FAO. 2019. Kenya at a glance: http://www.fao.org/kenya/fao-in-kenya/kenya-at-a-glance/en/

FIGURE 3: MAIZE YIELD IN SELECTED COUNTRIES

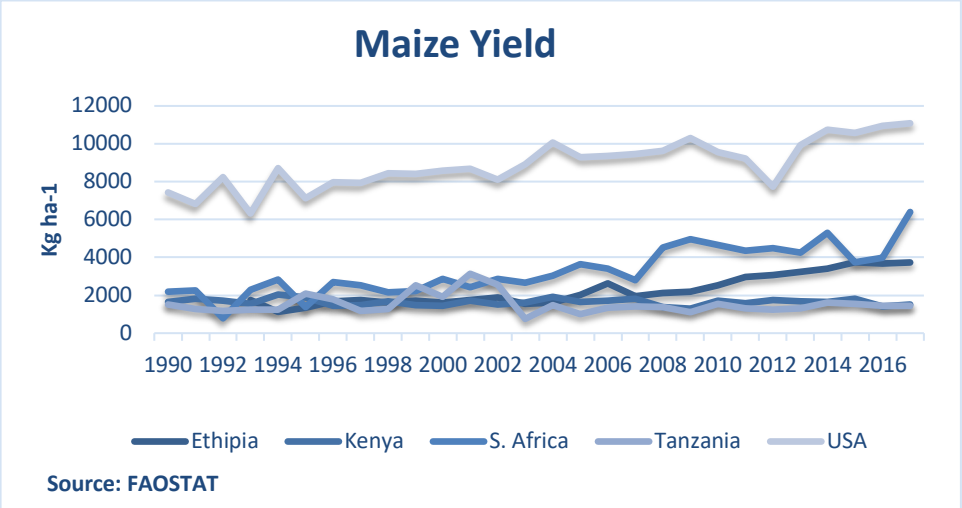


FIGURE 3A: YIELD OF MAJOR CEREALS IN KENYA

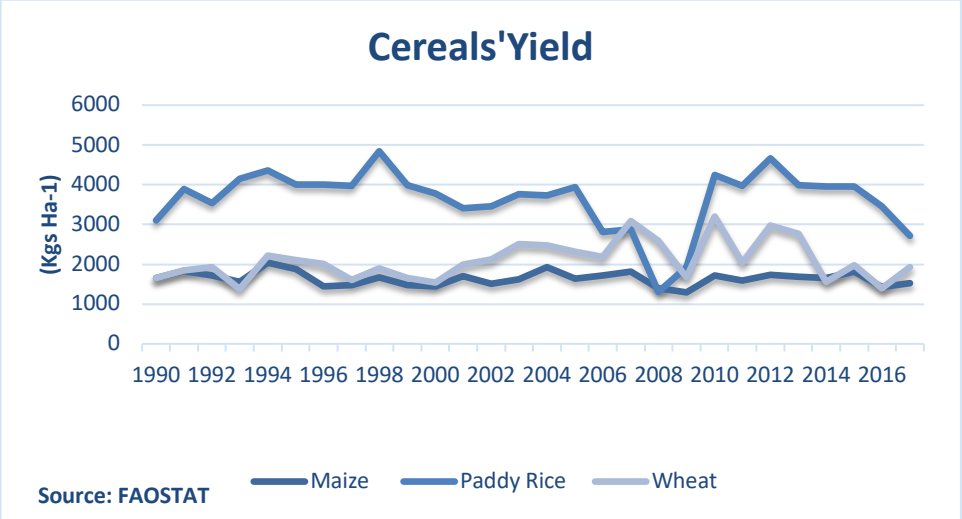
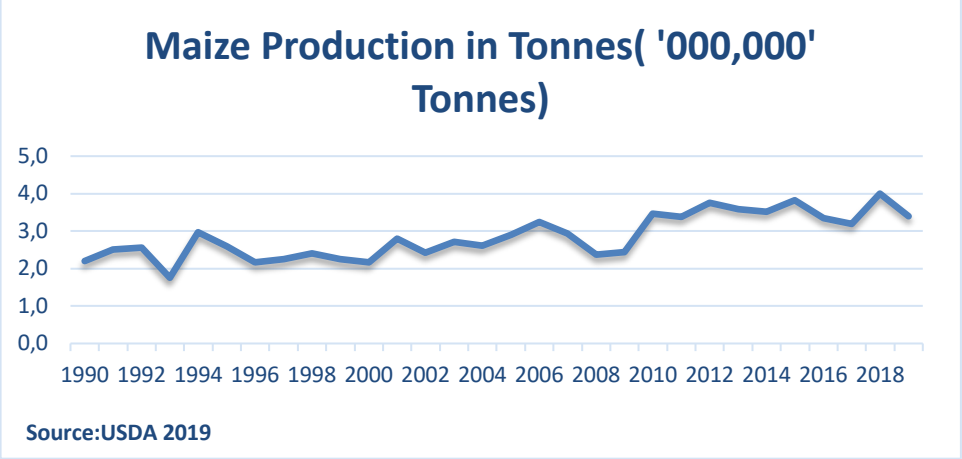


FIGURE 3B: MAIZE PRODUCTION FOR KENYA (MILLION TONNES)



Maize production has increased (mainly due to area expansion), but at a much lower rate (see Figure 3b) than demand, which is accelerating because of high population growth rate and rapid urbanization. Between 1990 and 2016, maize production increased by only 39 percent, from 2.3

million tonnes to 3.2 million tonnes. By contrast, total population increased much more rapidly. It increased by five and half fold (549 percent) between 1965 (9.5 million) and 2019 (52.2 million). The urban population increased by seventeen-fold over the same period (from 818 thousand in 1965 to 14 million in 2019).[51]

In addition to the low rate of increase in maize production relative to demand, a growing number of farmers are reported to cultivate maize to produce silage. Maize consumption is expanding continuously because of the growth of poultry and dairy sectors. Chopping maize stalks and immature ears (for silage) makes perfect economic sense, particularly as worsening drought in Kenya makes it harder to get a good maize crop to harvest.[52]

Maize production fluctuates with rainfall and the deficit in maize consumption can exceed 30 percent in drought years. Severe droughts have occurred in 1983/1984, 1991/1992, 1995/1996, 1998/2000, 2004/2005, and 2008/2011. Each drought event caused major crop and livestock losses, hunger and population displacement. Excessive flooding occurs relatively frequently and is linked to El Niño or La Niña episodes. Climate change has introduced an additional uncertainty into existing vulnerabilities, particularly in the ASALs (Kenya National Adaptation Plan, 2015–2030).[53] The growth of crop and livestock output in Kenya is constrained by land degradation, including soil erosion, overgrazing, deforestation, agrobiodiversity loss, and soil nutrient depletion. Land exploitation devoid of sustainable farming practices in soil and water conservation, has led to very low yields, averaging less than one tonne per hectare on many smallholder plots. Expansion of grazing activity into semi-arid marginal lands and forests has reduced livestock productivity. It is estimated that smallholder farming systems in the highlands of Kenya lose an equivalent of 112 kg N, 2.5 kg P and 70 kg K per ha due to nutrient removals in the form of annual crop harvest, leaching and soil erosion.[54] The cost of land degradation in Kenya was estimated at US$1.3 billion annually or about a 4.9 percent equivalent of the Kenyan GDP between 2001 and 2009 (Mulinge *et al*., 2016).[55] Land degradation is especially severe in the arid and semi-arid lands. Nationally, Kenya is prone to soil degradation, biological degradation, water degradation, chemical degradation, physical degradation, climate deterioration and land conversion.[56]

Kenya's maize production is also constrained by soil acidification due to continued preferences for diammonium phosphate (DAP) fertilizer (USDA, GAIN Report, 2016)[57], lack of access to credit and finance to enable adoption of improved or drought-tolerant seeds, postharvest (storage/processing) problems, low research capacity, inadequate extension services, slow variety replacement, and low rate of fertilizer application. Many soils in western Kenya are acidic and deficient in nitrogen and phosphorus, indicating that acidity hinders crop responses to fertilizers

[51] Worldmeters. 2019. World Population Prospects. The 2019 Revision: See: http://www.worldometers.info/world-population/kenya-population/

[52] Reuters. 2017. As Kenya farmers chop maize for cattle feed, food security worries grow. April 3. See: https://af.reuters.com/article/kenyaNews/idAFL5N1H72XR

[53] Ministry of Environment and Natural Resources. 2016. Kenya National Adaptation Plan 2015–2030. See: https://www4.unfccc.int/sites/NAPC/Documents%20NAP/Kenya_NAP_Final.pdf

[54] Ministry of Environment and Natural Resources: 2016. Kenya Strategic Investment Framework for Sustainable Land Management 2017–2027. See: http://www.environment.go.ke/wp-content/uploads/2018/08/KSIF-Kenya-Strategic-Investment-Framework-on-SLM-2017-2027.pdf

[55] Wellington Mulinge, Patrick Gicheru, Festus Murithi, Peter Maingi, Evelyne Kihiu, Oliver K. Kirui and Alisher Mirzabaev. 2016. Economics of Land Degradation and Improvement in Kenya. In E. Nkonya et al. (eds.), Economics of Land Degradation and Improvement – A Global Assessment for Sustainable Development, DOI 10.1007/978-3-319-19168-3_16. See: https://link.springer.com/content/pdf/10.1007%2F978-3-319-19168-3_16.pdf

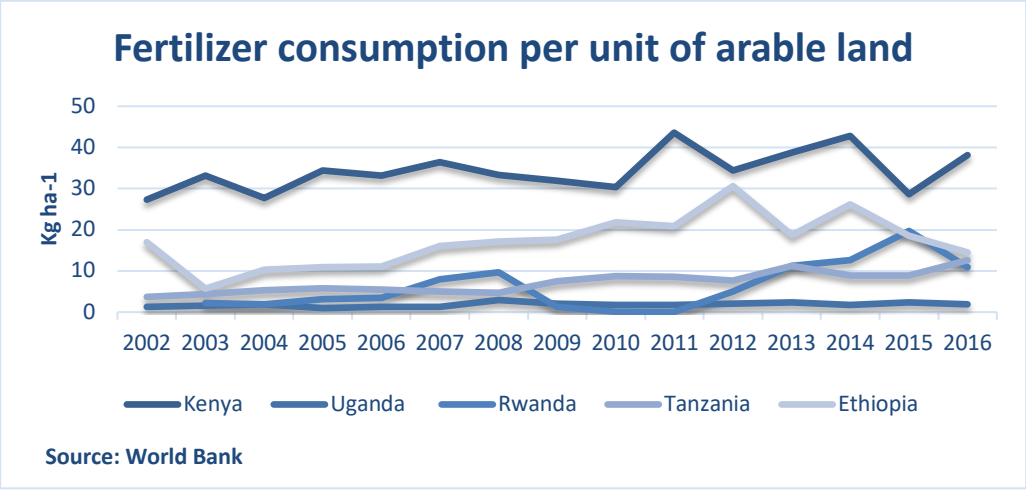
[56] Ministry of Environment and Natural Resources. 2016. Op. cit. See: http://www.environment.go.ke/wp-content/uploads/2018/08/KSIF-Kenya-Strategic-Investment-Framework-on-SLM-2017-2027.pdf

[57] GAIN Report. 2018. Kenya's imports of key food commodities set to increase. See: https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Grain%20and%20Feed%20Annual_Nairobi_Kenya_3-28-2018.pdf

applied to remedy nutrient deficiencies.[58] Compared to its neighbouring countries, Kenya has a higher rate of fertilizer consumption per hectare of arable land (Figure 4). In 2016, average consumption of fertilizer was estimated at 38 kg/ha in Kenya, compared to 2, 11, 13 and 14 kg/ha in Uganda, Rwanda, Tanzania and Ethiopia, respectively. The higher use intensity in Kenya has not translated into higher yields of staple crops because of soil degradation, soil acidification and rainfall variability. Low response is also related to a significant proportion the fertilizer being applied on cash crops such as tea, coffee and horticulture[59], inappropriate fertilizer and poor quality seeds (including fake and adulterated seeds).[60] Toyota Tsusho Fertiliser Africa Ltd., a blending plant established in Eldoret in 2016, has started producing fertilizer under the Baraka brand in 10 kg, 25 kg and 50 kg packaging but farmers are complaining that they cannot afford the price (retailing between KSH3200 and KSH3500 at the stockist, compared to KSH3000 for non-blended fertilizer such as DAP).[61]

Finally, women farmers, who account for the majority of the agricultural labour force, lag behind men with regard to agricultural productivity due to gender inequalities that persist in respect of access to, control over and utilization of productive resources such as land, livestock, labour, education, extension and financial services, and technology. They also spend more time in care and domestic work than their male counterparts, which further limits their productivity.[62]

FIGURE 4: FERTILIZER CONSUMPTION IN KENYA VERSUS UGANDA, RWANDA, TANZANIA AND ETHIOPIA



[58] Peter Opala, M. Odendo and Francis Muyekho. 2018. Effects of lime and fertilizer on soil properties and maize yields in acid soils of Western Kenya. African journal of agricultural research 13(13). March. See: https://www.researchgate.net/publication/323999568_Effects_of_lime_and_fertilizer_on_soil_properties_and_maize_yields_in_acid_soils_of_Western_Kenya

[59] IFDC. 2012. Kenya Fertilizer Assessment. See: https://ifdcorg.files.wordpress.com/2016/05/kenya-fertilizer-assessment-ifdc-2012.pdf

[60] Emilia Tjernström, Travis Lybbert and Michael Carter. 2017. Diverse Soils And Inputs Challenge Recommendations to Maize Farmers in Kenya. See: https://basis.ucdavis.edu/sites/g/files/dgvnsk466/files/2017-02/AMA%20Brief%20-%20soil%20variation%20-%202017-03.pdf

61 Daily Nation. 2019. No affordable fertiliser for farmers as planting season begins. February 24. See: https://www.nation.co.ke/news/Farmers-fight-affordable-fertiliser/1056-4997394-7nprvxz/index.html

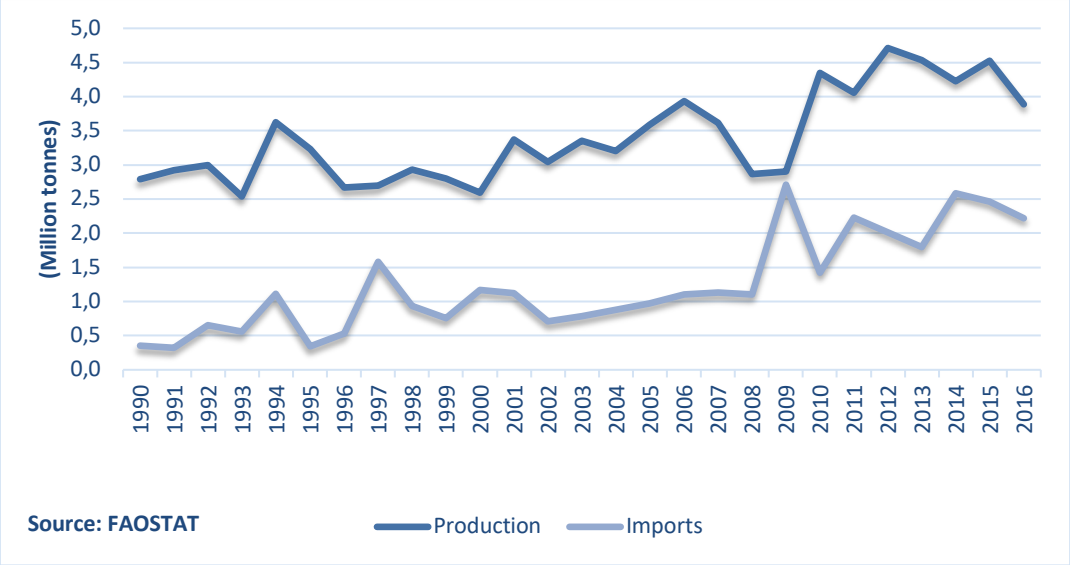
[62] Diiro GM, Seymour G, Kassie M, Muricho G, and Muriithi BW. 2018. Women's empowerment in agriculture and agricultural productivity: Evidence from rural maize farmer households in western Kenya. PLoS One. 13(5):e0197995. May 31. See: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5978796/

3.2 The impact of slow growth in the food and agriculture sector

The consequences of poor performance of the food sector have been increasing dependence on food imports, food and nutrition insecurity, stagnating real incomes of farmers, poor growth of the agricultural sector and overall GDP, high levels of rural and overall poverty, and uneven development, with urbanization concentrated in one or two largest cities rather than being regionally dispersed over many urban centres.[63] Shortfalls in domestic production of maize, wheat and rice have increased dependence on food imports. Between 1990 and 2016, cereal imports increased from 0.4 million tonnes to 2.2 million tonnes (Figure 5). In other words, cereal imports increased by 550 percent (five and half fold) between 1990 and 2016, compared to 39 percent increase in maize production. Food import bills alone accounted for over 46 percent of total domestic export earnings in Kenya in 2017.

Unlike the rest of Africa, Kenya is a net exporter of food and beverages, but this enviable status is changing fast. Kenya's food imports – mainly maize, un-milled wheat and wheat flour, rice and sugar – soared in 2017, absorbing nearly all (96 percent) export earnings from food and beverages (Figure 6). As shown in section 4.2.2, distortions and disincentives have affected the performance of sugar and coffee, leading to a sharp decline in production. High and increasing dependence on food imports renders the country vulnerable to fluctuations in global markets and drains foreign exchange and fiscal revenues. Food availability is negatively affected as a result of reduced import capacity and inadequate food access due to reduced fiscal space to protect poor households against rising domestic food prices.[64] It should be added that previously vibrant commodities such as pyrethrum and cotton have been decimated by gross distortions and disincentives (section 4.2.2).

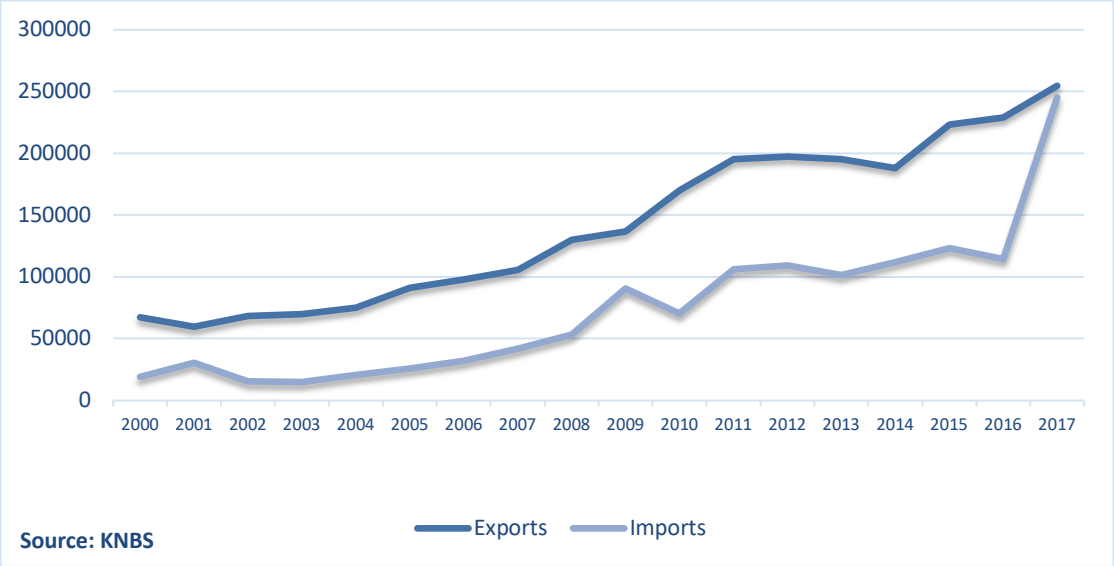
FIGURE 5: CEREAL PRODUCTION AND IMPORTS IN KENYA (TONNES)



[63] AGRA. 2018. Africa Agriculture Status Report 2018. See: https://agra.org/wp-content/uploads/2018/10/AASR-2018.pdf

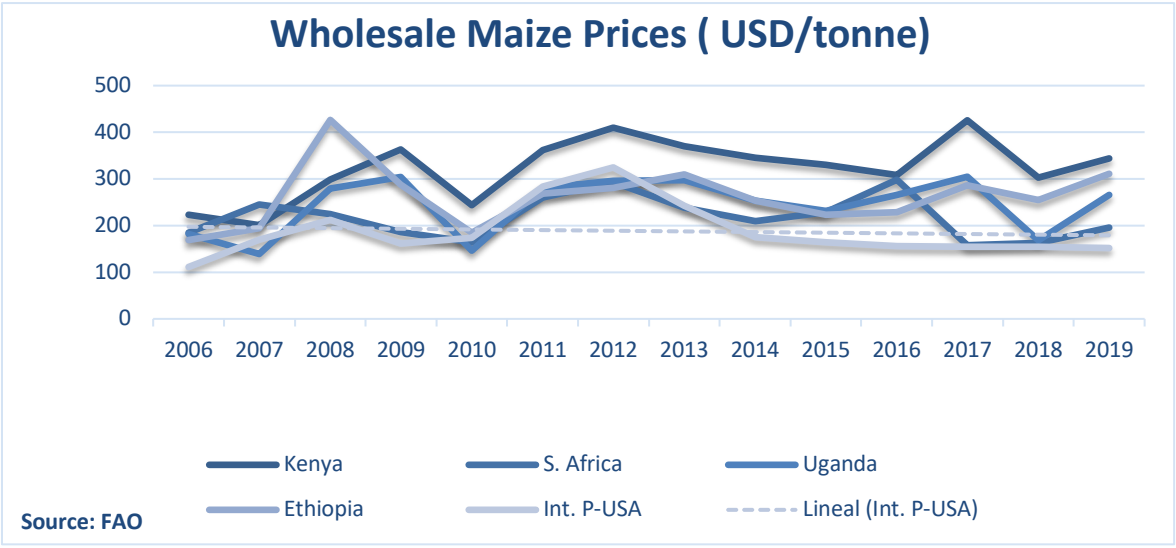
[64] Institute for Security Studies. 2018. Population growth and low agricultural productivity are deepening Kenya's dependence on food imports. 18 June. See: https://issafrica.org/iss-today/food-security-under-threat-in-kenya

FIGURE 6: FOOD & BEVERAGE (IMPORTS AND EXPORT) IN KENYA (MILLION KENYAN SHILLINGS)



Another outcome of lagging food supply in Kenya is high food prices. Since 2009, the price of maize in Kenya has exceeded maize prices in the region (Uganda, South Africa, Ethiopia) by a wide margin (Figure 7). Maize prices in Kenya are also way above the international prices (US white maize) and the gap is widening as the international price is trending downwards while the Kenyan domestic price is trending upwards. The price of rice in Kenya is also the highest in East Africa and wheat prices are among the highest in the region. Rising food prices have major impact on marginalized and vulnerable households, pushing them further into poverty, malnutrition and hunger. High food prices can also trigger grievances and protests with serious implications for political stability.

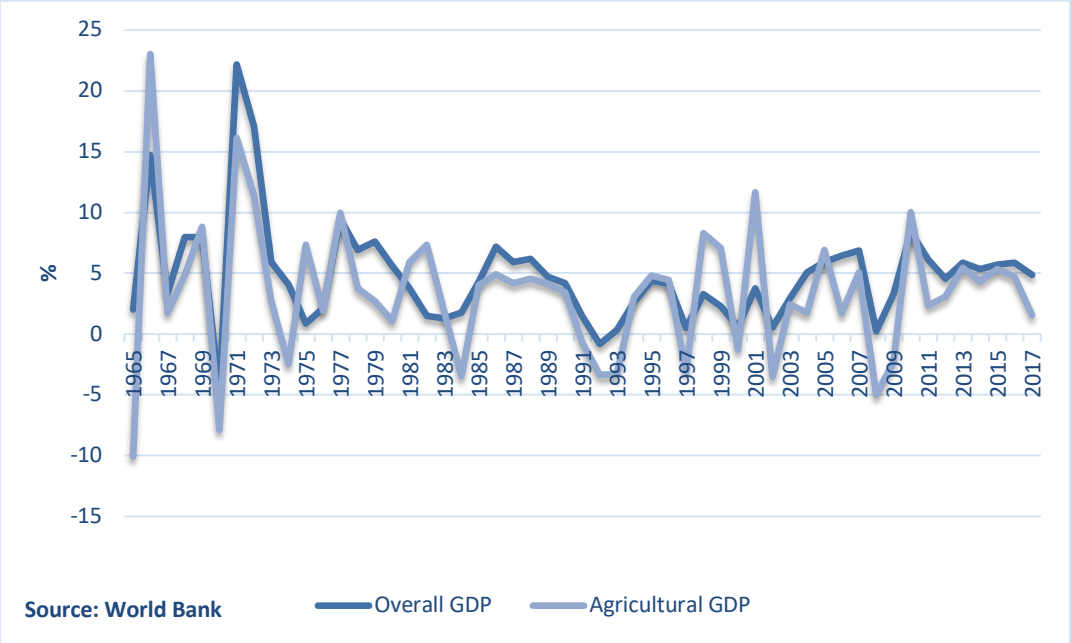
FIGURE 7: AVERAGE WHOLESALE MAIZE PRICES IN KENYA, SOUTH AFRICA, UGANDA, ETHIOPIA AND INT P-USA



The overall performance of agriculture can be characterized as poor and well below the target of six percent annual growth as agreed in the Malabo declaration of CAADP. Since 2001 (Maputo Declaration), the agricultural GDP growth rate exceeded six percent only in three out of the 17 years (2001, 2005 and 2010) (Figure 8). The poor performance of the agricultural sector also made it impossible to realize the commitment of Article 43 of the constitution to establish Kenyans' 'right

to be free from hunger and have adequate food of acceptable quality' and achieve Vision 2030's target of growing Kenya's economy into a middle-income economy by achieving a ten percent GDP growth rate.

FIGURE 8: ANNUAL GROWTH RATE OF GDP AND AGRICULTURAL GDP (PERCENTAGE)



3.3 Trends and costs of malnutrition

The nutritional status of Kenyans has shown improvement over time but recent data show reversals. For instance, prevalence of child stunting decreased from 35 percent in 2008 to 26 percent in 2014, but then increased to 29.9 percent in 2015/2016. Child wasting and underweight also decreased between 2008 and 2014, but then increased in 2015/2016 (Table 3). The reason for the recent spike could be related to Kenya's food (maize and other basic commodities) shortage and price inflation that started in 2015 due to drought in many parts of the country.[65] It should be noted that there is no methodological difference between the two sets of surveys – both were based on national sample frames developed by KNBS to conduct household-based surveys in Kenya.

With respect to agro-ecology, the 29 ASAL counties,[66] which occupy approximately 89 percent of the country's landmass and account for 36 percent of the population, have higher rates of undernutrition than the 18 non-ASAL counties. More importantly, despite nutrition improving in the rest of the country, in the ASAL areas the trends appear to be negative (deteriorating), particularly with respect to wasting in children and women being underweight.[67]

Kenya is also facing a double burden of malnutrition, especially with respect to women of reproductive age (15–49 years). In 2014, nine percent of women were underweight (BMI < 18.5 kg/m^2), compared to 33 percent who were either overweight or obese (BMI ≥25 kg/m^2). Between

[65] Climate Home News. 2017. Kenya's Food Crisis: Drought raises Prices and Political Tensions. 26 July. See: https://www.climatechangenews.com/2017/07/26/kenyas-food-crisis-drought-raises-prices-political-tensions/

[66] The 29 ASAL counties are Kwale, Kilifi, Tana River, Lamu, Taita Taveta, Garissa, Wajir, Mandera, Marsabit, Isiolo, Kitui, Machakos, Makueni, Turkana, West Pokot, Samburu, Elgeyo Marakwet, Baringo, Laikipia, Narok, Kajiado, Nyeri, Tharaka Nithi, Meru, Embu, Migori, Homa Bay, Nakuru and Kiambu.

67 Sara Signorelli, Carlo Azzarri and Cleo Roberts. 2016. Malnutrition and Climate Patterns in the ASALs of Kenya: A Resilience Analysis based on a Pseudopanel Dataset. Feed the Future. Technical Report Series No 2. See: http://www.technicalconsortium.org/wp-content/uploads//2016/02/Report-9-Malnutrition-and-Climate-Patterns_D7_19Feb2016.pdf

2008/2009 and 2014, the proportion of underweight women decreased (from 12 to nine percent), while the proportion of overweight women increased (from 25 to 33 percent). The 2014 Kenyan Demographic Health Survey (KDHS) also showed that urban women are more likely to be overweight or obese (43 percent) than rural women (26 percent). Nairobi has the highest proportion (48 percent) of women who are overweight or obese, followed by the former Central Region (47 percent); with the lowest proportion observed in the former North Eastern Region (19 percent) (KDHS, 2014). According to the State of Food Security and Nutrition 2018, the prevalence of anaemia among Kenyan women of reproductive age was 27.2 percent in 2016, showing no improvement compared to 2012 (27.5 percent).[68] Obesity among children below the age of five years is low, estimated at 4.1 percent nationally. Child obesity is relatively more prevalent in non-ASAL counties than in ASAL counties.[69]

Micronutrient deficiencies are highly prevalent among children under the age of five years and women. Among the most common micronutrient deficiencies are vitamin A deficiency (VAD), iron deficiency anaemia (IDA), iodine deficiency disorders (IDD) and zinc deficiency. Anaemia remains a prominent public health issue in Kenya. Iron-deficiency anaemia can affect the ability to learn among children. Only 33 percent of children aged 6–23 months consumed foods rich in iron the day or night preceding the DHS survey in 2014. Urban children (41 percent) are more likely to consume iron-rich foods than children in rural areas (29 percent). The survey also showed that consumption of iron-rich foods increases with increasing mother's education and household wealth. The fact that only six percent of children age 12–59 months received iron supplements in the seven days preceding the survey shows a huge gap in interventions to address malnutrition in Kenya.[70]

TABLE 3: TRENDS IN UNDERNUTRITION IN KENYA 1993–2015

		1993	1998	2003	2008	2014	2015/6
Stunting (height for age)	**National**	**32.7**	**33**	**30.6**	**35.3**	**26**	**29.9**
	Rural	34.2	34.7	31.7	37.1	29.1	32.4
	Urban	21.5	24.7	23.6	26.4	19.8	24.5
Wasting (weight for height)	**National**	**5.9**	**6.1**	**5.6**	**6.7**	**4**	**6.7**
	Rural	6	6.2	5.8	7	4.4	6.8
	Urban	5.2	5.1	4.2	5.3	3.4	6.3
Underweight (weight for age)	**National**	**22.3**	**22.1**	**19.9**	**16.1**	**11**	**13**
	Rural	23.5	23.9	21.3	17.3	12.9	14.5
	Urban	12.8	13.3	12.6	10.3	7	9.8

SOURCE: KNBS 2019

The social and economic costs of malnutrition are high. Up to 45 percent of all deaths under the age of five, and at least 25 percent of global maternal mortality is attributable to malnutrition.[71] In addition to bereavement and suffering, families whose members are malnourished must also bear the treatment costs of malnutrition-related illness, as these expenses are rarely fully covered by health and insurance systems. There is also impaired physical growth and cognitive function, often coupled with life-long susceptibility to illnesses that reduces economic productivity through lowered labour productivity and compromised academic achievement. As a result, the economic

[68] FAO, IFAD, UNICEF, WFP and WHO. 2018. The State of Food Security and Nutrition in the World 2018. Building climate resilience for food security and nutrition. Rome, FAO. See: http://www.fao.org/3/i9553en/i9553en.pdf
[69] DHS Kenya. 2014. See: https://dhsprogram.com/pubs/pdf/fr308/fr308.pdf
[70] Ibid. https://dhsprogram.com/pubs/pdf/fr308/fr308.pdf
[71] UNICEF (2009) Tracking Progress on Child and Maternal Nutrition: A survival and development priority. New York: UNICEF.

losses to individuals from undernutrition in low-income countries are considerable, estimated in one study to be equal to ten percent or more of lifetime earnings.[72] While it is individuals and families that bear the heaviest burden in terms of lives lost and potential wasted, the ripple effects of undernutrition trickle up all the way to national and regional economies. Stunting is associated with GNP losses of up to 11 percent across Africa and Asia, where prevalence is highest (Haddad, 2013)[73]. In Kenya, UNICEF has estimated annual productivity losses of approximately KSH128 billion (US$1.28 billion) as a result of malnutrition.[74] And according to a recent USAID study, it is estimated that from 2010 to 2030, undernutrition will cost Kenya approximately US$38.3 billion in GDP due to losses in workforce productivity (USAID 2017).[75]

3.4 Kenya has the potential to achieve food and nutrition security

3.4.1 NATURAL RESOURCES

Despite the poor performance of agriculture in tackling food insecurity and malnutrition, Kenya is endowed with diverse physical features, including its low-lying arid and semi-arid lands (ASALs), an extensive coastal belt, plateaus, highlands, and the lake basin around Lake Victoria, giving rise to one of the most diversified agricultural economy in East Africa. The three main categories of crops in Kenya include food, industrial and horticultural crops. Diverse food crops are grown and include; cereals (maize, wheat, sorghum, rice, millet,); pulses (beans, pigeon peas, cowpeas, chickpea, green grams); and roots and tubers (sweet potato, Irish potato, cassava, arrowroot and yam). The major industrial crops are tea, coffee, pyrethrum, cotton and sugarcane among others. The horticultural crops include cut flowers, vegetables (tomatoes, cabbage, kales, carrots), fruits (bananas, mangoes, nuts, herbs and spices). Kenya is notable as one of the biggest exporters to Europe of fresh produce, such as vegetables, fruit and flowers. Kenya is the leading exporter of black tea in the world and the crop is also one of its top foreign exchange earners.[76]

The livestock sub-sector employs about 50 percent of the agricultural labour force and is the main agricultural enterprise for over 10 million Kenyans living in the arid and semi-arid lands (ASALs). According to the 2009 census, the country's livestock population was 17.5 million cattle, 27.7 million goats, 17 million sheep, 3 million camels and 31.8 million poultry (GoK, 2001). Kenya has a vibrant dairy industry accounting for 40 percent of the livestock sector GDP. The dairy industry is the second largest (in terms of the number of people it employs, and amount of milk produced) in Africa, after South Africa.

Covering 84 percent of Kenya's land area is the arid and semi-arid lands (ASALs) with limited water resources and prone to drought. However, the development ASALs, which are homes to about 36 percent of the population with over 70 percent of the livestock and 75 percent of the wildlife in the country, is considerable. It is estimated that about 24 million hectares of land in the ASAL can be used for livestock production, but only 50 percent of the carrying capacity of the land is exploited. There are also 9.2 million hectares in ASALs that have the potential for crop production if irrigated.[77]

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[72] Global Panel. 2016. The cost of malnutrition. Why policy action is urgent. London, UK: Global Panel on Agriculture and Food Systems for Nutrition. See: https://glopan.org/sites/default/files/pictures/CostOfMalnutrition.pdf

[73] ibdi

[74] UNICEF Kenya. 2016. Concept Note. See: https://www.unicef.org/kenya/Concept_Note_-_NS_2015.pdf

[75] USAID. 2018. Kenya: Nutrition Profile. See https://www.usaid.gov/sites/default/files/documents/1864/Kenya-Nutrition-Profile-Mar2018-508.pdf

[76] Reuters. 2019. Kenyan tea glut pushes prices to multi-year lows, trade body says. 2 August. See: https://www.reuters.com/article/us-kenya-tea/kenyan-tea-glut-pushes-prices-to-multi-year-lows-trade-body-says-idUSKCN1US1LF

[77] Water Research and Resource Centre, Jomo Kenyatta University. 2018. Embracing Technology Key to unlocking Potential in Kenya's Arid Areas http://www.jkuat.ac.ke/departments/warrec/embracing-technology-key-unlocking-potential-kenyas-arid-areas/

With 13 600 km^2 of inland lakes and 640 km of coastline, Kenya has huge potential for fish production. Technological capacity constraints have, however, meant that the potential of marine resources has remained largely inaccessible to Kenyans. Ninety five percent of the fish landings are from freshwater lakes, three percent from marine sources, and one percent from aquaculture. Ninety two percent of fish landings from inland lakes are from Lake Victoria, while six percent comes from Lake Turkana. Other lakes and rivers contribute two percent. Kenya has fast growing fish species (Nile tilapia, African catfish) and extensive freshwater resources suitable for the cage, pond and tank-based aquaculture systems. The country's agriculture and fisheries sectors produce most of the raw materials needed for locally made fish feeds. In addition, Kenya has a highly developed fish processing sector and quality assurance laboratories that until now have been focused on the export of Nile perch products to Europe. On the demand side, local and regional market potential is huge with significant opportunities due to growing populations and declining wild fish catches. Kenya is strategically placed in the East African Community (EAC) Region for regional exports.[78]

Forest development in Kenya is dependent on the rich natural resource base, especially with regard to tourism development, energy production, food security, timber production, and provision of a host of non-timber forest products (e.g. gums and resins) that directly or indirectly contribute to the livelihoods of citizens. In addition, forests support the provision of environmental services, including resilience to the impacts of climate change. Statistics shows that forests contributed about 1.4 percent to Kenya's GDP in 2014 without including the forestry contributions to household wood energy, non-timber products and ecosystem services. However, the natural resource base is facing pressure from increased population growth and unsustainable use of forest resources. With shrinking arable land, however, Kenyan farmers are being forced to adopt agroforestry, a farming method that combines trees, shrubs and crops in a productive system as a way of maximizing returns from their farms. Agroforestry is also Kenya's main instrument for reducing carbon emissions under the Paris climate treaty as it sequesters a large amount of carbon in woody plants both above and below ground. [79]

A diversified agricultural economy offers several advantages in Kenya. A combination of various crops, livestock and fisheries in agro-ecosystems under a smallholder farming system permits more efficient utilization of agro-ecological processes, provides diversity of human diet and/or improves household income, nutrition and security. Kenya has enormous potential to use agricultural diversification that can contribute significantly to improved health and nutrition, household food security, climate resilience and ecological sustainability. The only challenge is the policy gap that is hindering the effort to tap the country's potentials. Getting agriculture moving requires an enabling policy environment that takes advantage of existing potential and emerging opportunities. Kenya needs to address the gaps in policy frameworks, governance structures and institutional arrangements with a focus on addressing key drivers of malnutrition, poverty and unemployment. The next three sections discuss the different dimensions of Kenyan FNSSA policies and governance issues.

3.4.2 EMERGING OPPORTUNITIES

There are several emerging opportunities that Kenya can capitalize on to spur food and agricultural development. Chief among these opportunities are the presence of a strong ICT industry, a dynamic private sector, and strong policy research institutes and think tanks. Kenya outperforms its sub-Saharan Africa peers in mobile connectivity and the benefits of ICT are starting to be felt in other sectors, such as finance and agricultural markets and services. Kenya's 90 percent mobile

[78] Kenya Marine and Fisheries Research Institute. 2017. Kenya's Aquaculture Brief. See: https://www.kmfri.co.ke/images/pdf/Kenya_Aquaculture_Brief_2017.pdf

[79] MONGABAY. 2018. Farmers see promise and profit for agroforestry in southern Kenya. See: https://news.mongabay.com/2018/08/farmers-see-promise-and-profit-for-agroforestry-in-southern-kenya/

penetration represented a total number of 39.7 million mobile subscribers in 2016. Availability of affordable smartphones and cheaper Internet bundles has contributed to Internet penetration growth, estimated at 67 percent in 2017. The current mobile and Internet penetration rates present opportunities for low value strategies and mobile financial services as well as niche value added services.[80]

Kenya has become a global leader in mobile banking. It has the world's highest mobile money penetration rates of 58 percent (2017). Two thirds of the adult population have access to financial services through the mobile banking service M-Pesa. ICT is being applied in food and agricultural markets. For instance, launched in 2014, Twiga Foods is a fast-growing Kenya-based enterprise, using mobile technology and logistics to enhance food supply chains by more effectively and rapidly consolidating highly fragmented, informal market supply and demand (thereby reducing food prices and spoilage). FarmLINK is a good example of a social enterprise that uses an online one-stop information platform to provide farmers with specific agricultural information relating to: farm inputs, soil and water management, financial services for farmers by banks and microfinance institutions, post-harvest management, private and government extension services, linkage to agricultural training programmes, weather forecasts and market linkages. FarmLINK also offers farmer to farmer and farmer to expert interactions within the platform through a call centre, SMS, chatrooms, live classes online and webinars. The public sector is also taking a lead in adopting ICT solutions. Huduma Kenya programme was created to facilitate the provision of a wide array of governmental services from a single centre. Huduma Kenya merges numerous related public services within one location, so that Kenyans can easily access over 60 services at any Huduma Branch.[81]

The biggest challenge in tapping the full potential of ICT in FNSSA is inadequate policy support for the ICT-based solutions to be scaled up to national level. The high cost of ICT (infrastructure, applications, end-user equipment, recurrent cost of Internet, etc.) for businesses, households and individuals is also a challenge. Other challenges include limited sharing of communication infrastructure by infrastructure operators, inadequate and high cost power infrastructure and limited uptake of ICT in SMEs.[82]

The private sector in Kenya is strong and it benefits from a well-educated and entrepreneurial workforce. The private sector includes a number of domestic and foreign investors. Relative to its neighbours, Kenya has a more developed private sector, making the country a net exporter to all other East African Community (EAC) countries. The private sector is also competitive in the global market in a variety of export products, especially tea, cut flowers and leguminous vegetables. The Kenyan constitution protects private property and provides safeguards against expropriation of such property without compensation, and Kenya enjoys a stable macroeconomic environment. Key players in voicing private sector concerns include: Kenya Private Sector Alliance (KEPSA), Federation of Kenya Employers (FKE) and the Kenya Association of Manufacturers (KAM). There is also widespread intellectual appreciation within the Government of Kenya that the private sector is important and should be developed. However, recurrent challenges that prevent the private sector from reaching its full potential have yet to be addressed. Political uncertainty, corruption,

[80] Business Sweden Kenya. 2017. Opportunities in the Kenyan ICT Sector. See: https://www.business-sweden.se/contentassets/df353ab4798b4aa58b9131da0f3104de/factpack---ict-sector-in-kenya---2017.pdf
[81] Tuko. 2018. Huduma Centre services: List of all services offered. See: https://www.tuko.co.ke/267808-huduma-center-services-explained.html
[82] Ministry of Information Communications and Technology. 2017. The Kenya National ICT Master Plan 2014- 2017. http://icta.go.ke/pdf/THE%20NATIONAL%20ICT%20MASTERPLAN%202017.pdf

infrastructural deficits, and an untapped informal sector have constrained the contribution of the private sector. [83]

The importance of policy based on evidence has grown with the establishment of national, regional and international policy research institutes and think tanks in Kenya, namely, the Institute for Policy Analysis and Research (IPAR), the Kenya Institute for Public Policy Analysis and Research (KIPPRA), the Institute for Development Studies (IDS) of the University of Nairobi, the Egerton University based Tegemeo Institute of Agricultural Policy and Development, National Information Platforms for Nutrition (NIPN) of Kenya, Kenya Bureau of Statistics (KBS), Centre for African BioEntrepreneurship (CABE), African Economic Research Consortium (AERC), African Women in Agricultural Research and Development (AWARD), Regional Strategic Analysis and Knowledge Support System (ReSAKSS), International Food Policy Research Institute (IFPRI), World Bank, African Development Bank, and International Livestock Research Institute (ILRI). In addition, policy research is conducted by different departments of the national and county governments, university staff and students, World Bank, African development partners, UN agencies, private sector organizations, NGOs and CSOs. However, agricultural and food security policy research does not seem to have the greatest influence on policies. Researchers often complain about getting policy actors to make use of their findings. One of the challenges is the limited effort to synthesize and disseminate high-quality tailor-made information to all of the stakeholder groups in Kenya. There is no recognized one-stop platform or portal for sharing research documents from the different policy research institutes. Lack of inclusive public-private policy dialogue forums has also contributed to the limited influence of research findings. It is generally claimed that countries with strong interactions among internal actors will have more effective knowledge systems and that these countries are more likely to have better agriculture and rural development policy processes.[84]

[83] AfDB. 2013. The State of Kenya's Private Sector. See: https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/The_State_of_Kenya_s_Private_Sector_-_Recommendations_for_Government-Development_Partners_and_the_Private_Sector.pdf

[84] Towela P.R. Nyirenda-Jere and John A. Kazembe. 2014. Improving Policymaking for Agricultural and Rural Development in Africa. Working Paper. IIED. See: https://pubs.iied.org/pdfs/14636IIED.pdf

4. Relevance, adequacy and coherence of FNSSA policy decisions

The poor performance of Kenya's food and agricultural sector and the high prevalence of child malnutrition, especially among vulnerable groups such as pastoralists and women-headed households, are associated with inadequate policies. Policy decisions in Kenya need to be evidence-based, rigorous, integrated and comprehensive. The objective of this section is to show the gaps in ensuring the relevance, adequacy and coherence of food and agricultural policy frameworks.

4.1 Relevance and coherence of policy frameworks

The policy formulation process in Kenya consists of different levels: long-term national visions and directions; national plans and strategies, overarching sectoral (agricultural) policies and strategies; cross-sectoral policies and strategies; and sub-sectoral and commodity policies and strategies. Kenya 2010 Constitution and Kenya Vision 2030 provide the long-term development directions. Kenya 2010 Constitution stipulates, 'every person has the right to be free from hunger and to have adequate food of acceptable quality'. The constitution also emphasizes sustainable and productive management of land resources and stresses the achievement and maintenance of at least ten percent tree cover of the land area of Kenya. Kenya Vision 2030 sets a goal of transforming the country into a newly industrialized middle-income country. To achieve this goal, agriculture is expected to be innovative, commercially oriented and modern. The vision also states that the country aims to be a nation that has a clean, secure and sustainable environment, and provides for an increase of four percent in forest cover and a lessening by half of all environment-related diseases. Kenya has clearly and adequately formulated its national visions and goals.

4.1.1. NATIONAL AND SECTORAL LEVELS

Kenya Vision 2030 is being implemented through successive five-year medium-term plans. The Third Medium Term Plan (MTP III) 2018–2022 succeeds the Second MTP (MTP II) 2013–2017 and outlines the main policies, legal and institutional reforms as well as programmes and projects that the government plans to implement during the plan period. It gives priority to the implementation of the Big Four Agenda, which identifies priority areas during the second term of President Uhuru Kenyatta. The four goals of the initiative are: (i) increase the manufacturing share in the economy from 9.2 percent to 15 percent; (ii) provide affordable housing by building 500 000 affordable houses across the country in the five year period; (iii) achieve 100 percent Food and Nutrition Security (FNS) through irrigation projects, construction of food storage facilities and implementation of high impact nutritional projects; and (iv) achieve 100 percent universal health coverage. Kenya uses the Medium Term Expenditure Framework (MTEF), which is a rolling three year-expenditure plan, to finance its national plans and priorities. It sets out the medium-term expenditure priorities and hard budget constraints against which sector plans can be developed and refined. The latest MTEF 2018/2019–2020/2021 is being prepared concurrently with MTP III 2018–2022 as stipulated in the constitution. Section 125 of the Public Finance Management Act, 2012 states the budgeting process is guided by the MTP. The MTP is developed through a participatory process involving expert input, sector consultations and public hearings. The budget-making process at the county level is based on conditions such as the development of an integrated development planning process, which includes both long-term and medium-term planning; planning for and establishing financial and economic priorities for the county over the medium term; and making an overall estimation of the county governments' revenues and expenditure.

Like most developing countries, Kenya faces serious challenges in budgeting arising from the inability to integrate the development agenda, government priorities and budget allocations. Among the major problems of the planning and budgeting processes in Kenya are: (i) mismatch between professed priorities and actual budget allocations; (ii) poor execution of the budget; and (iii) mismanagement of resources and corruption.[85] Limited public awareness and participation in the budget-making process and resource allocation have also reduced the capacity of citizens to monitor resource utilization and hold public institutions and leaders to account.[86] As discussed in section 6.2, aligning the budgetary process (MTEF) with the planning process (MTP) needs considerable improvement in Kenya.

At sectoral level, until 2013, the Agriculture Sector Development Strategy (ASDS) 2010–2020 was the overarching strategy to implement Vision 2030. ASDS envisions 'a food-secure and prosperous nation' through increasing productivity, commercialization and competitiveness of agricultural commodities and enterprises. The strategy advocates for sustainable land management and scaling up of appropriate technologies suitable for drought-prone areas. It further proposes programmes for mitigation and adaptation to climate change. Unfortunately, the ASDS became out-dated as it was launched before the new constitution and the process of devolution started in 2013. A new strategy, the Agriculture Sector Transformation and Growth Strategy (ASTGS), 2019–2029, was launched in 2019 with the goal of reinforcing the position of agriculture as a major driver of economic growth for the country and achieving Kenya's Big 4 Agenda, especially on 100 percent food and nutrition security by 2022. It has nine flagships that include six agroprocessing hubs around the country, three knowledge and skills building programmes focused on technical and management skills for 200 national and county government transformation leaders, 1000 farmer-facing SMES that provide inputs, equipment, processing and post-harvest aggregation services, and unlocking 50 new large-scale farms with 61 000 hectares under sustainable irrigation from existing infrastructure. The newly established Agricultural Transformation Office (ATO) under the Ministry of Agriculture, Livestock, Fisheries and Cooperative will serve as the national secretariat coordinating the implementation of the strategy at an estimated cost of KSH440 billion over five years – KSH230 billion in agriculture-specific costs, and KSH210 billion in supportive expenditure.[87] One of the challenges of ASTGS is that MTP III does not capture all the projects/pillars (identified by ASTGS) because MTP III was finalized before the ASTGS was concluded. Given the devolved system of governance (since 2013) that decentralized implementation of agricultural policies to county governments, the ATO needs to develop an implementation strategy that is consistent with the devolution policy. More importantly, the strategy, which should define operations conducted to accomplish national policy objectives and goals, was not guided by an overarching policy framework.

In 2016, the Ministry of Agriculture, Livestock, Fisheries and Cooperative drafted the Agricultural Policy to provide an overarching policy framework for the national and county governments. The goals of the policy included: (i) transforming crop, livestock and fisheries production into commercially oriented enterprises that ensure sustainable food and nutrition security; and (ii)

[85] Kenya Climate Innovation Center (KCIC). 2019. The Nature and Policy/Legal Foundations of Budgeting. See:https://kenyacic.org/blog/nature-and-policylegal-foundations-budgeting

[86] Transparency International Kenya. 2014. Budget Making in Kenya What the law says, all you need to know about the budget making process in Kenya. See: https://tikenya.org/wp-content/uploads/2017/06/adili-146-budget-making-in-kenya-online.pdf

[87] MoALFC. 2019. Agricultural Sector Transformation and Growth Strategy (ASTGS). Abridged Version. http://www.kilimo.go.ke/wp-content/uploads/2019/01/ASTGS-Full-Version.pdf

providing a framework for the support and intensification of cooperation and consultation between the national and county governments and among other stakeholders for enhanced development of crops, livestock and fisheries. The draft Agricultural Policy specifies policy statements in 20 different sub-sectoral areas (e.g. food and nutrition security, agricultural inputs, land use for crops, livestock and fisheries, biotechnology in agriculture and post-harvest losses) and ten cross-cutting issues (e.g. disaster management, governance, gender in agriculture, youth in agriculture) (see Annex III). The draft policy, however, does not provide guidance on the role of the numerous semi-autonomous government agencies (SAGAs) or parastatals in the sector. It is not clear whether the government will continue to operate as a market actor (e.g. NCPB) or change its role to become a market enabler, allowing the full participation of the private sector in marketing all commodities. The policy does not incorporate key elements of the Food and Nutrition Security Policy or its Implementation Framework, Food and Nutrition Security Bill, Food Safety Bill, the Warehouse Receipt System Act, etc. It also fails to acknowledge the ongoing effort to coordinate the activities of the two levels of government through the Joint Agriculture Sector Coordination Committee (JASSCOM).

The government has yet to finalize and launch the Agricultural Policy. At the same time, several thematic policies are either in draft form or have become outdated (formulated before the devolution) (e.g. draft National Livestock Policy, draft Kenya Veterinary Policy, draft National Irrigation Policy, Kenya Seed Policy 2010, National Land Policy 2007). The Medium Term Plan III proposes to develop, review and revise 27 sectoral, sub-sectoral and commodity policies and strategies on agriculture and livestock development during the period 2018–2022 (Annex III). In the blue economy (fisheries), the plan is to work on 15 policies and strategies and nine legal reforms in the next four years. MTP III clearly acknowledges that there are no approved overarching sectoral or sub-sectoral policy, institutional and regulatory frameworks to guide the development and transformation of agriculture, livestock and fisheries. Lack of coherence and fragmentation represents an important feature of agricultural policy development in Kenya. Each department or unit is developing its own sub-sector or commodity policy framework without reference to a governing or overarching sectoral policy.

Devolution has rendered several policies redundant and the gaps in policy and regulatory environments have affected the operations of county governments. Many counties have responded by trying to develop their own policies and regulatory legislations despite the constitutional provision that confers policy design only to the national government (see section 7). Because of the gaps, the role of national versus county governments in food safety regulations, input subsidy, commodity levies or agricultural research is contentious and a major source of conflict.

The long approval process is another major hurdle in Kenya. The process involves several stages, each taking several months or even years to complete: (i) initiation (by the relevant ministries, departments and agencies, MDA); (ii) research (by concerned MDA) to assess the evidence and views of stakeholders; (iii) negotiation and public participation; (iv) finalization of the policy by drawing final policy document; (v) cabinet (national) or county committee approval; (vi) parliamentary or County Assembly approval; (vii) assent (speaker submits approved policy to the president or governor) for formal endorsement; (viii) publication; and (ix) draft bill (if a new law is necessary to achieve the objectives and implementation of the policy (white paper).[88] Policy

[88] KIPPRA. 2019. Public Policy Formulation Process in Kenya. See: https://kippra.or.ke/kippra2019/images/ppmpbrochure/public-policy-formulation-in-kenya.pdf

formulation takes several years, mainly due to lack of a strong political commitment emanating from the highest authority and lack of buy-in from the public and interest groups. A policy has limited chance of progressing beyond a draft document if the Ministry of Finance is not willing to allocate a budget for its implementation.[89] Because public participation is not institutionalized, public pressure for developing and implementing policy is weak. Nobody is held accountable or blamed if the approval process takes so long. The same problem has affected policy review, i.e. no serious attention is given to modifying policy in response to changing circumstances.

4.1.2. CROSS-SECTORAL FRAMEWORKS

A cross-sectoral framework for FNSSP in Kenya is provided through policies such as: (i) the National Food and Nutrition Security Policy (NFNSP) together with the National Nutrition Action Plan and the Implementation Framework for NFNSP; (ii) Ending Drought Emergencies Country Programme Paper (EDE-CPP) (2012), along with the National Disaster Management Policy (draft); (iii) National Climate Change Action Plan (NCCAP); (iv) Kenya Climate Smart Agriculture, CSA, 2017–2026; (v) Kenya Strategic Investment Framework (KSIF) for Sustainable Land Management (SLM) (by the Ministry of Natural Resources and Environment); and (vi) Kenya Youth in Agribusiness Strategy 2017–2021. The NFNSP, for instance, puts emphasis on the need for: (i) ensuring the right to nutrition as a constitutional right; (ii) adopting a multi-sectoral approach to address malnutrition in the country; and (iii) promoting a life-cycle approach to nutrition security. The NFSNS provided a conceptual guide to the development of the National Nutrition Action Plan (NNAP) 2012–2017, by the Ministry of Health. The Plan identified 11 strategic objectives, including the improvement of nutritional status of women of reproductive age (15–49 years) and nutritional status of children under five years of age, as well as reduction of the prevalence of micronutrient deficiencies in the population. NNAP promised to strengthen coordination and partnership among key actors (11th Strategic Objective) such as the Ministry of Agriculture, Livestock, Fisheries and Cooperative, but the ministry was rarely mentioned in the Activity Implementation Matrix and no concrete nutrition-sensitive interventions were presented. In 2017, the Ministry of Agriculture took the leadership to develop the NFNSP Implementation Framework (NFNSP/IF) and provide institutional, legal, budgetary and a multi-sectoral implementation framework to achieve the goals of the NFNSP. In 2018, the Ministry of Health started the preparation of the second Kenya Nutrition Action Plan (KNAP) 2018–2022. It appears the two key ministries prefer developing their own plans or frameworks, rather than developing an integrated strategy, to implement the NFNSP. It is difficult to share knowledge, avoid duplication of efforts, and ensure complementarity of cross-cutting issues that lead to a larger impact.

One major challenge of mainstreaming cross-sectoral policies into relevant sector plans and programmes and developing an integrated strategy is lack of an effective coordination mechanism. The NFNSP/IF calls for the establishment of the Food and Nutrition Security Council (FNSC) in the Office of the President as a high-level coordination structure, but this has yet to materialize (see section 6.3). In the absence of a functioning coordination mechanism, mainstreaming NFNSP and its Implementation Framework by relevant ministries, including agriculture, health, education, labour and social protection, public service, youth and gender, and the Ministry of Devolution and ASALs, has not been easy.

For implementing the KSIF for SLM, an inter-sectoral mechanism is proposed comprising all relevant

[89] https://pdfs.semanticscholar.org/7809/20c3f88577c7a34a936675497da3bd19669b.pdf

ministries, including those responsible for natural resources and environment, lands, housing/human settlements, agriculture, livestock, fisheries, water and irrigation, mining/ petroleum, tourism, education, national planning and urban planning. At national level, the strategy proposes to establish an Inter-Ministerial SLM Coordination Committee (IMCC) and an Inter-Ministerial SLM Technical Committee (IMTC). Implementation of SLM interventions will be mainly undertaken at county level through County SLM Committees and Watershed SLM Committees.[90] The Kenya Youth in Agribusiness Strategy that has the objective of transforming the mindset and perceptions of the youth towards agribusiness and equipping youth with appropriate business skills relies on public-private partnership for its implementation and proposes the establishment of a National Agribusiness Youth Strategy Coordination Committee (NAYSCC), a National Strategy Implementation Unit (NSIU), and a County Agribusiness Youth Strategy Coordination Committee (CAYSCC) to achieve its goals of income generation and decent employment for Kenya's youth. However, the proposed structures in both cases (SLM and youth) only exist on paper. Lack of coordination has also affected implementation of Kenya CSA. There are a number of institutions working on climate change and CSA related policy, regulatory, research, capacity building and advisory functions, but there are no effective coordination mechanisms. The gap in coordination and collaboration among stakeholders has resulted in poor planning, implementation, monitoring and evaluation of programmes and projects at national and county levels (Kenya CSA 2017-2026).

Finally, cross-sectoral policies and strategies often do not feature prominently in the national plan (MTP). Only two of the six cross-sectoral policies/strategies reviewed here, namely the NCCAP and Ending Drought Emergencies, are mentioned and incorporated into MTP III. Food and nutrition security is considered as a sectoral (not cross-sectoral) activity of the Ministry of Agriculture, Livestock, Fisheries and Cooperative with a focus on expansion of food production and supply, reduction of food prices to ensure affordability and support value addition in the food processing value chain only. Sustainable land management is mentioned in MTP III only in relation to land reform, not as a cross-cutting issue involving several ministries. Youth and gender issues are presented as the sole responsibility of the Ministry of Public Services, Youth and Gender. None of the proposed inter-sectoral coordination mechanisms has been acknowledged and budgeted for in MTP III. Cross-sectoral strategies promise billions of shillings for implementation but the State Department of Planning (now under the Ministry of Treasury and Planning) preparing MTP III is largely unaware of them. The disconnect between the national plan and cross-sectoral policies is substantial in Kenya.

4.2. Adequacy and rationality of policy decisions

Apart from the coherence and relevance challenges of national, sectoral and cross-sectoral policies, the food and agriculture policy decisions in Kenya suffer from: (i) inadequate support to smallholder agriculture; and (ii) distortions in markets and prices.

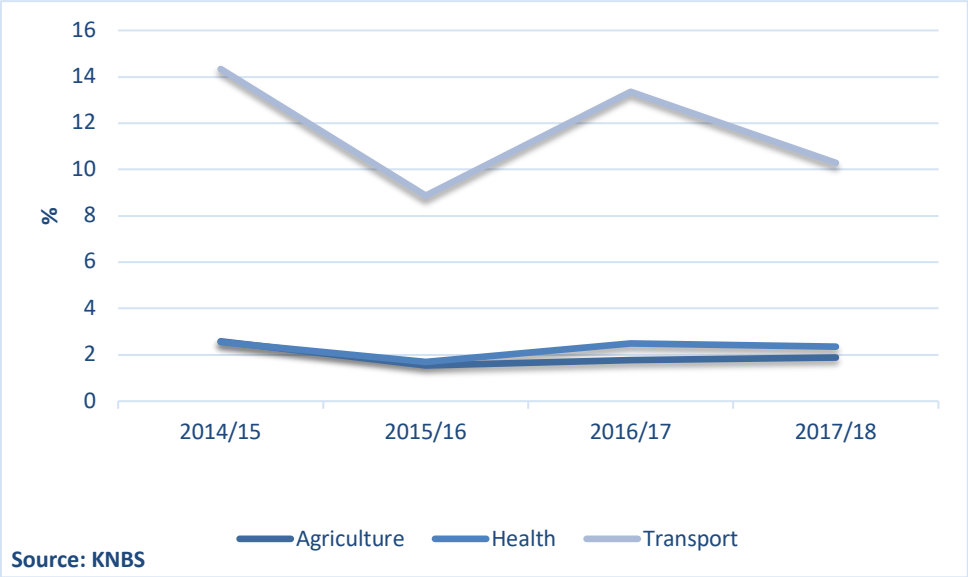
4.2.1 INADEQUACY OF SUPPORT TO AGRICULTURE AND SMALLHOLDERS

One clear item of evidence of policy neglect of smallholder agriculture is inadequate budget allocation. Kenya has failed to meet its commitment of the CAADP Maputo Declaration as well as the CAADP Malabo Declaration to allocate at least ten percent of national budgetary resources to

[90] Ministry of Environment and Natural Resources. 2016. Op. cit. See: http://www.environment.go.ke/wp-content/uploads/2018/08/KSIF-Kenya-Strategic-Investment-Framework-on-SLM-2017-2027.pdf

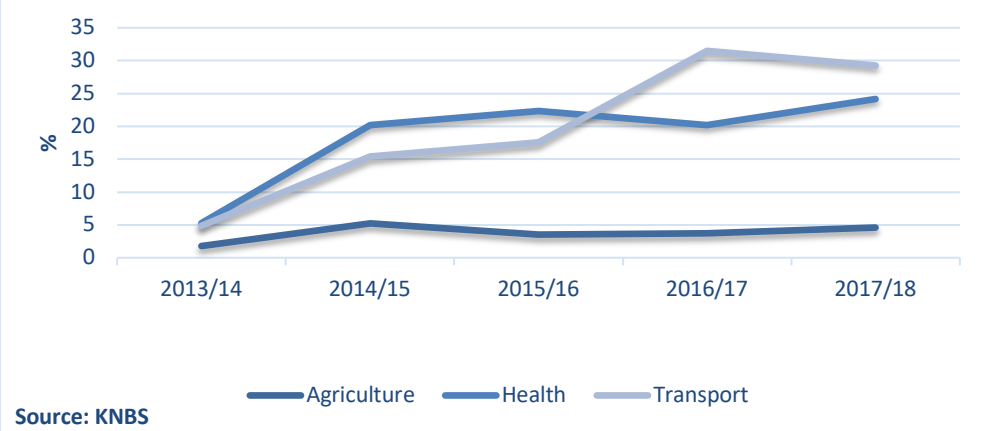
agriculture and increase productivity. Between 2013/2014 and 2017/2018, both the national and county governments allocated less than three percent and five percent of the budget to agriculture, respectively (Figure 9a and 9b).

FIGURE 9A: NATIONAL BUDGET EXPENDITURE BY MAJOR SECTORS (PERCENT OF THE TOTAL GOVERNMENT EXPENDITURE)



Source: KNBS

FIGURE 9B: COUNTY BUDGET EXPENDITURE BY MAJOR SECTORS (PERCENT OF OVERALL COUNTIES EXPENDITURE)



Source: KNBS

Several studies suggest that small farms have higher land productivity than large farms because they have lower unit transaction costs as they operate in labour-surplus and capital-scarce rural areas.[91] Small farms in Asia and the Pacific (which generally operate in small plots of less than two hectares on average) produce 80 percent of the total food needed to ensure food security in the region, and play a central role in the socio-economic development and well-being of the entire population. Small family farms are also essential for the sustainability of agricultural, forestry and fishery production systems.[92]

[91] UNCTAD. 2015. The role of smallholder farmers in sustainable commodities production and trade. See: https://unctad.org/meetings/en/SessionalDocuments/tdb62d9_en.pdf

[92] Jingzhong Ye and Lu Pan. 2016. Concepts and realities of family farming in Asia and the Pacific. See: http://www.fao.org/3/a-i5530e.pdf

As shown in section 3, mitigating the impact of shocks and increasing the productivity of small farmers and pastoralists are critical to improve child nutritional status. However, smallholders are not always the main beneficiaries of agricultural policy in Kenya. Public investments in the food and agriculture sector, for instance, may fail to reach small producers and marginalized groups for various reasons. First, parastatals absorb a considerable proportion of the budget in agriculture. It has been reported that parastatals take up nearly a quarter of the entire national government budget at national level.[93] Parastatals (or Semi-Autonomous Government Agencies, SAGAs) are allocated budgets running into billions of Kenya Shillings but their services have made marginal impact. Wrangles between different interest groups, lack of political will and the National Treasury's reluctance to take the lead in pushing through the reforms have stalled the process to reform parastatals.[94]

The benefits of subsidies in agriculture are often captured disproportionately by larger producers. Subsidies associated with output price interventions, credit or input supply are used to distribute patronage. The benefit is greatest to those who sell the largest quantities of the crop or those who use the largest amount of input or credit.[95] These inequalities are evident when one looks at the fact that between 59 percent and 87 percent of all marketed volumes for the various commodities are sold by the top 20 percent of households in Kenya. For maize, over 70 percent of the marketed volume was sold by the top 20 percent of the households while the bottom 20 percent sold less than 1.5 percent. The majority of smallholder farmers are locked in subsistence production and do not benefit from government programmes.[96] Women and local communities face considerable challenges in accessing productive resources as well as benefiting from government projects, especially in ASAL areas. The emphasis on commercialization and farming for export has brought little direct benefit to smallholders in the ASALs.[97] As shown in section 3, increasing the productivity of smallholders can boost access to one's own food and improve food and nutrition security.

Finally, small farmers are affected by the discrimination against the use of informal markets and exchanges. For instance, Kenya's recent agriculture bills and laws, namely, the Crops Act (2013) and the Agriculture and Food Authority Act (AFA) (2013) and the Seeds and Plant Varieties (Amendment) Act (2012), do not recognize a number of farmers' practices, which Kenyan women farmers and smallholders in general depend on to strengthen their food and livelihood systems. The act prohibits seed exchange among farmers, storing or handling of uncertified agriculture commodities with the objective of expanding markets for private and public seed companies. It should be noted that 80–90 percent of seeds used in sub-Saharan Africa by smallholder farmers do not come from seed companies but are acquired 'informally' through established farmers'

[93] Institute of Economic Affairs. 2018. Budget Analysis 2018. See: https://www.ieakenya.or.ke/downloads.php?page=1529658599.pdf

[94] Business Daily. 2018. Kenya's parastatal reforms in limbo. 30 July. See https://www.businessdailyafrica.com/news/Kenya-parastatal-reforms-in-limbo/539546-4688486-aqtl3u/index.html

[95] Colin Poulton and Karuti Kanyinga. 2013. The Politics of Revitalising Agriculture in Kenya. See: https://assets.publishing.service.gov.uk/media/57a08a2440f0b6497400044a/FAC_Working_Paper_059.pdf

[96] John Olwande and Mary Mathenge.2012. Market Participation among Poor Rural Households in Kenya. Selected paper prepared for presentation at the International Association of Agricultural Economists (IAAE) Triennial Conference, Foz do Iguaçu, Brazil, 18-24 August. See: https://ageconsearch.umn.edu/record/126711/files/Olwande.pdf

[97] Route to Food. 2019. Challenges in implementing a Right to Food framework in Kenya. 18 March. See: https://routetofood.org/challenges-in-implementing-a-right-to-food-framework-in-kenya/

networks.[98] A new Crops (Food Crops) Regulation 2018 (by the Ministry of Agriculture and AFA[99]) proposes that a food crop grower shall only use chemical fertilizers that have been recommended by the respective county government, criminalizing use of animal manure. It also recommends that 'a person shall not use water for irrigation to produce food crops unless the water has been analysed by a competent laboratory and declared safe food crop production'.[100]

4.2.2. DISTORTIONS AND DISINCENTIVES

Agricultural reforms that were part of the Structural Adjustment Programs (SAPs) of the 1980s and 1990s called for liberalization of markets, privatization of parastatals, elimination of input and credit subsidies, and removal of price support systems. Although the removal of the government interventions improved the incentive environment for agriculture in many countries, the reforms in Kenya have had a mixed outcome. While the liberalization of the foreign exchange market and private sector participation improved the incentives for some export commodities (e.g. horticultural crops and tea), the lack of effective reform in sectors such as maize, sugar, coffee and cotton has created a disincentive, resulting in poor performance. Kenya retained several statutory marketing institutions that included state boards for all major commodities. These SAGAs or parastatals, many of them from the colonial era, which were set up to support the production and marketing of most commodities and still operate included: Kenya Tea Development Agency/Authority (KTDA), Kenya Dairy Board, Kenya Co-operative Creameries (KCC) (for milk), Kenya Meat Commission, National Cereals and Produce Board (NCPB), National Irrigation Board (NIB) (for irrigated crops), Horticultural Crops Development Authority, Kenya Sugar Authority, Cotton Board of Kenya, Sisal Board of Kenya, Pyrethrum Board of Kenya. The Ministry of Agriculture currently manages a total of 38 semi-autonomous government agencies (SAGAs) or parastatals.

Apart from absorbing a significant proportion of the limited government budget in agriculture, most of the SAGAs are known for their distortionary interventions, resulting in disincentives for producers, crowding out of private sector investment and inefficiency. For instance, the government established the NCPB in 1985 (through Act of Parliament, Cap 338) a state corporation by amalgamating the Maize and Produce Board and the Wheat Board. Official maize prices are gazetted and announced by the Agriculture Minister. Maize procurement and storage is done by the NCPB on behalf of the ministry (State Department of Agriculture). Each year, NCPB buys maize from surplus-producing farmers (mainly large-scale commercial farmers), at a price higher than the market price, using money allocated by government. It also intervenes to keep the costs of production low by selling fertilizer at subsidized prices. The system is blamed for offering a double subsidy to selected farmers, a powerful political group that is the main driver of government maize policies to benefit from subsidized inputs as well as above-market prices from government. On the other hand, smallholders growing maize, estimated at 97 percent of the 3.5 million smallholders in Kenya, sell their maize to small-scale assemblers or brokers at low prices immediately after harvest. Following the interventions, the performance of Kenya's maize has not been encouraging. Since the early 1990s, Kenya, which was generally maize self-sufficient, with production frequently exceeding domestic consumption, has seen national maize production decline by about one percent per year

[98] GRAIN. 2018. The real seeds producers: Small-scale farmers save, use, share and enhance the seed diversity of the crops that feed Africa. 29 October. See: https://www.grain.org/article/entries/6035-the-real-seeds-producers-small-scale-farmers-save-use-share-and-enhance-the-seed-diversity-of-the-crops-that-feed-africa

[99] AFA is also blamed for its attempts to claw back on the decentralisation spirit of the Constitution of Kenya: https://routetofood.org/challenges-in-implementing-a-right-to-food-framework-in-kenya/

[100] MoALFC. 2018. The Crops (Food Crops) Regulations, 2018 Arrangement ff Regulations. See: http://www.kilimo.go.ke/wp-content/uploads/2019/02/Food-Crops-Regulations-23-2-2019.pdf

between 1990 and 2003, with significant annual fluctuations and regular deficits since 2006.[101] The vast majority of smallholder maize producers have become net buyers. The maize industry would have performed better had the government allowed all producers to buy inputs and sell output at market prices (not distorted), and subsidized consumers who cannot afford these prices.[102]

Similarly to NCPB, government interventions through commodity boards of cotton, coffee, sugar, and pyrethrum have caused disincentives to small producers and operators along the value chain. Prior to the 1990s, Kenya had a robust and integrated cotton textiles industry, with cotton production exceeding over 70 000 bales of lint cotton in 1984. High cost of production (e.g. chemicals for spray) and mismanagement reduced lint production to 7 000 bales in 2016 against the potential of 200 000 bales.[103] [104] Poor performance of the cotton sector can also be linked to the interventions by the parastatal in the industry. Farm gate prices are set by the Fibre Crops Directorate (FiCD) under AFA (previously Cotton Board of Kenya/Cotton Development Authority) to influence producers. Despite the effort to set minimum floor prices, which often do not get implemented, Kenyan cotton producers are reported to experience the highest rate of disincentive among cotton-producing countries in sub-Saharan Africa. [105]

Kenya's coffee production declined from 129 000 tonnes in 1988 to 41 000 tonnes in 2017.[106] The Coffee Acts (2001, 2002, 2012), which also established the Coffee Board of Kenya, required the intermediation of cooperatives and traders. Such regulations are the main source of inefficiency in the coffee value chain, especially where farmers are capable of marketing their own coffee.[107] The former Coffee Board, now Coffee Directorate under AFA, is responsible for regulation, development and promotion of the sub-sector, but it has yet to address the institutional challenges. Smallholders, who account for two-thirds of the cultivated land under coffee (estates account for the other third), are faced with high costs of production, volatile and low prices and delayed payments. As a result, dairy, horticulture and real estate are now occupying land previously used for coffee production.[108]

The sugar industry is not very different form the commodities reviewed above. Delayed payments by state-owned millers for cane deliveries have encouraged farmers to sell to private millers, although they have an established contract with state-owned millers. In an attempt to protect public millers, the government adopted protectionist policies but this created room for rent seeking among sugar importers. Cane producers lost because of the low prices, while consumers ended up paying a high price for sugar. Farmers were also affected by delayed payment for their produce, sometimes up to two years, leading to declining yield levels and increasing dependence on

[101] USAID-KAVIS. 2015. Maize Value Chain Analysis. August

[102] Reliefweb. 2017. Why Kenya's short-term fixes won't resolve its maize supply crisis. https://reliefweb.int/report/kenya/why-kenya-s-short-term-fixes-won-t-resolve-its-maize-supply-crisis

[103] World Bank. 2005. Summary of Kenya Value Chain Analysis. See: http://siteresources.worldbank.org/EXTAFRSUMAFTPS/Resources/note_8_screen.pdf

[104] Kenya Investment Authority. 2016. Cotton, Textile And Apparel Sector Investment Profile. See: http://www.intracen.org/uploadedFiles/intracenorg/Content/Redesign/Projects/SITA/SITA_Kenya_CTA_booklet_final_web_page.pdf

[105] USAID. 2018. Policy Brief Enhancing Investment Attractiveness In Kenya's Cotton Sector. Feed the Future. See: https://climatefocus.com/sites/default/files/brief_4_-_enhancing_investment_attractiveness_of_kenyas_cotton_sector.pdf

[106] Knoema. 2017. Kenya - Green coffee production quantity. See:https://knoema.com/atlas/Kenya/topics/Agriculture/Crops-Production-Quantity-tonnes/Coffee-production

[107] World Bank. 2005. Op. cit. See: http://siteresources.worldbank.org/EXTAFRSUMAFTPS/Resources/note_8_screen.pdf

[108] ICO. 2019. Country Coffee Profile: Kenya. 14 March. http://www.ico.org/documents/cy2018-19/icc-124-7e-profile-kenya.pdf

imported sugar. The Sugar Directorate under AFA (formerly Kenya Sugar Board) has not prevented the decline of the industry due to a variety of factors, including excessive government involvement, barriers to domestic investment, and problematic vertical relations with the cane sector, among others, which are affecting sugar production in Kenya.[109] [110] In 2016, sugar imports almost tripled to 989 600 tonnes against a production of 376 100 tonnes.[111]

In the 1980s and 1990s, Kenya produced 18 000 tonnes and commanded about 80 percent of the global pyrethrum market share. Today, production has declined to a mere 350 tonnes.[112] Similarly to coffee, the pyrethrum industry is subject to inefficient institutional structures that do not serve the best interests of the participants in the pyrethrum value chain. Inefficiencies within the PBK (Pyrethrum Board of Kenya) established under the Pyrethrum Act, CAP 340 of the Law of Kenya, can be traced to the PBK monopoly on the sale of plant material to farmers. PBK's involvement has made seedlings virtually unavailable, forcing farmers to rely on splitting plants, which reduces their quality. With a monopsony power over buying pyrethrum from farmers, the PBK stopped paying farmers on time and at a fair price.[113] More recently, incomplete regulatory frameworks and protection of the state-managed Pyrethrum Processing Company of Kenya (previously a monopoly and monopsony for the sale of pyrethrum extracts and purchase of dry flowers) has prevented effective entry of private processors.[114]

High costs of essential agricultural inputs and cases of adulteration have increased due to the weak regulatory environment that have forced farmers to substantially reduce the use of quality seeds as well as other inputs such as fertilizers and pesticides.[115] The government has made attempts to stimulate a food supply response through input subsidies for smallholders, but the scheme has encountered challenges. Kenya has two subsidy programmes to increase maize productivity: (i) the National Accelerated Agricultural Inputs Access Programme (NAAIAP) in 2007 for poor farmers; and (ii) the national fertilizer subsidy programme administered through the NCPB in 2008 to all verified farmers. Both operate alongside a retail fertilizer market.[116] Under NAAIAP, beneficiary farmers use a voucher scheme, which allows them to purchase the inputs from an accredited stockist or retailer who can then redeem the voucher at a government-contracted financial provider. The government

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[109] Jonathan Argent and Tania Begazo. 2015. Competition in Kenyan Markets and Its Impact on Income and Poverty A Case Study on Sugar and Maize. World Bank, Policy Research Working Paper 7179. January http://documents.worldbank.org/curated/en/239021468254953019/pdf/WPS7179.pdf

[110] Kevin Onyango, Timothy Njagi, Lilian Kirimi & Samuel Balieiro. 2018. Policy Options for Revitalizing the Ailing Sugar Industry in Kenya. Tegemeo Institute. Policy Brief No. 30 August. See: https://www.researchgate.net/publication/328306544_Policy_Options_for_Revitalizing_the_Ailing_Sugar_Industry_in_Kenya

[111] The East African. 2018. Taskforce to salvage Kenya's cane sector. 12 November. See: https://www.theeastafrican.co.ke/business/Taskforce-to-salvage-Kenya-cane-sector/2560-4848270-4sr0nwz/index.html

[112] The East African. 2018. Neglect: Is it time Kenya Pyrethrum farming was put out of its misery. https://www.theeastafrican.co.ke/business/Kenya-pyrethrum-farming-misery/2560-4850164-qtomia/index.html

[113] World Bank. 2005. *Op. cit.* http://siteresources.worldbank.org/EXTAFRSUMAFTPS/Resources/note_8_screen.pdf

[114] IFC. 2019. Creating Markets in Kenya: Unleashing Private Sector Dynamism to Achieve Full Potential. https://www.ifc.org/wps/wcm/connect/9cdd17da-fccb-4ca8-a71c-ea631593463a/201907-CPSD-Kenya.pdf?MOD=AJPERES&CVID=mMGBDRv

[115] Raphael Gitau, Simon Kimenju, Betty Kibaara, James Nyoro, Michael Bruntrup and Roukayatou Zimmermann. 2008. Agricultural Policy-Making in Sub Saharan Africa: Kenya's Past Policies. Tegemeo Institute. WPS 34/2008. See: https://www.researchgate.net/publication/265080216_Agricultural_PolicyMaking_in_Sub_Saharan_Africa_Kenya's_Past_Policies

[116] Timothy Njagi and Michael Carter. 2019. Making Fertilizer Subsidies a Profitable Investment in Kenya. Feed the Future. August. See: https://basis.ucdavis.edu/sites/g/files/dgvnsk466/files/2019-08/MRR%20Evidence%20Insight%20-%20Fertilizer%20Subsidies%20Kenya%20-%20Njagi%20Carter_0.pdf

has faced challenges over the years in terms of funding and the programme has had to be scaled down. Difficulties in implementation also arose when government payments intended for suppliers were delayed and suppliers and funders started to withdraw their support for the programme. One study concluded that imperfect targeting of NAAIAP has had the potential of negatively impacting the private input distribution sector. According to the same study, there is no evidence that female-headed households were more likely to receive the NAAIAP subsidy.[117]

The NCPB-administered programme has displaced private fertilizer sales as NCPB buys from international suppliers and distributes to farmers through NCPB offices, excluding and undercutting private traders.[118] More importantly, traders with connections to authorities procured fertilizer from NCPB at subsidized prices, repackaged it and sold it to farmers at very high prices. The intervention has disrupted the fertilizer business and encouraged smuggling of the input at the Kenya-Uganda border.[119]

Underinvestment in extension, roads, rural finance, research, etc. has affected the incentive to adopt improved varieties and fertilizers by farmers. Inadequate regulations have made it impossible for small farmers to invest and access quality seed and fertilizer.[120] For maize farmers in Kenya, ill-timed availability, high cost (especially fertilizer) and mislabelling of seeds are the three principal constraints to accessing inputs.[121] Like many other African countries, the challenges of underdeveloped infrastructure networks and unreliable or missing markets for agricultural inputs and outputs have resulted in the marginalization of Kenya's subsistence producers, suggesting an ongoing tendency for policy disincentives to smallholder agriculture.[122]

Finally, one major consequence of the low level of public investment in agriculture and the distortions (due to parastatal interventions) is low levels of commercial lending to agriculture. The AFC has not been able to respond to the needs of a large section of the poor rural farmers as it requires tangible collateral and a minimum area of land hold to approve loans.[123] Compared to other sectors, commercial lending to agriculture is disproportionately low, accounting for about four percent of the total lending portfolio for the period 2005–2016. The main reason is that the risk-adjusted returns to capital invested in agriculture are too low to justify commercial lending to the sector. Public sector investments in agriculture are heavily distortionary and too small to generate public goods that could have resulted in a significant de-risking function to the sector.[124]

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[117] Megan Sheahan, John Olwande, Lilian Kirimi, and T.S. Jayne. 2014. Targeting Of Subsidized Fertilizer Under Kenya's National Accelerated Agricultural Input Access Program (NAAIAP). Tegemeo Institute. WPS 52/2014. See: https://www.tegemeo.org/images/downloads/publications/working_papers/WP52_2014.pdf

[118] Timothy Njagi and Michael Carter. 2019. Op. cit. https://basis.ucdavis.edu/sites/g/files/dgvnsk466/files/2019-08/MRR%20Evidence%20Insight%20-%20Fertilizer%20Subsidies%20Kenya%20-%20Njagi%20Carter_0.pdf

[119] Business Daily. 2013. Smuggling thrives along the Kenyan Uganda Boarder. See: https://www.businessdailyafrica.com/corporate/Smuggling-thrives-along-Kenya-and-Uganda-border-/539550-1916944-gaob3cz/index.html

[120] UC Davis BASIS. 2017. Feed the Future Innovation Lab for Markets, Risk and Resilience. See: https://basis.ucdavis.edu/news/one-change-hybrid-seeds-could-boost-maize-productivity-western-kenya

[121] USAID-KAVES. 2015. Maize Value Chain Analysis, August.

[122] AGRA. 2017. Africa Agriculture Status Report. See: https://agra.org/wp-content/uploads/2018/05/Final-AASR-2017-Aug-282.pdf

[123] Kenya Bankers Association. 2018. Realisation of Full Potential of the Agriculture Sector: Is Commercial Financing a Core Missing Cog? https://www.kba.co.ke/downloads/Realisation%20of%20Full%20Potential%20of%20the%20Agricultrural%20Sector%20Is%20Commercial%20Financing%20a%20Core%20Missing%20Cog.pdf

[124] *Ibid*.

5. Extent to which policies are forward looking and inclusive to address structural and emerging challenges

Among key features of good policies are outward looking, forward looking and inclusiveness. The objectives of outward-looking polices are to take account of relevant regional and international factors and draw on best practices from other regions and countries. The policy-making process is forward looking if it takes a long-term view (based on trend analysis and projections into the future) to make choices over savings, investments, job creations, earnings, etc., and show the likely effect and impact of the policy. An inclusive policy-making process takes account of the impact on and/or meets the needs of all people directly or indirectly affected by the policy and involves key stakeholders directly. The objective of this section is to discuss challenges in formulating forward-looking and inclusive policies by focussing on the extent to which FNSSA policies are aligned with global and regional goals as well as emerging and structural problems.

5.1. Alignment with global and regional goals

The policy and strategy documents described above are rhetorically aligned with global and regional declarations and goals. For instance, the National Medium-Term Plan III (2018–2022), MTP III, states that it has mainstreamed and will implement the 17 Global Sustainable Development Goals (SDGs) as outlined in the United Nations 2030 Agenda for Sustainable Development. It also states compliance with Agenda 2063, the AU's strategic framework for socio-economic transformation of the African continent by the year 2063.

The Agricultural Sector Growth and Transformation Strategy (2018–2028), ASTGS, repeatedly cites the Malabo Declaration as an overarching development blueprint. It also mentions the SDGs, the AU 2063 Agenda, and the establishment of the Africa Continental Free Trade Area. The Implementation Framework for the NFNSP (2017–2022) cites alignment with multiple international declarations and goals, including the World Food Summit (WFS) of 1996, the SDGs, the African Union Commission and the African Task Force on Food and Nutrition Development, the 2003 NEPAD CAADP, the Malabo Declaration Commitments, and the SUN Networks. The Medium Term Expenditure Framework for the Agriculture Rural and Urban Development Sector, MTEF, ARUD (2017–2020), notes the importance of achieving the SDGs and states the number of CAADP activities to be mainstreamed (as performance indicator) as four, but without specifying the activities. The Malabo Declaration upholds earlier commitment to allocate at least ten percent of public expenditure to agriculture and commits member countries to end hunger by 2025, but these are not included in the MTEF.

Previously, the National Food and Nutrition Security Policy (2011) undertook to align the economy and the agricultural sector with the country's international commitments and declarations to end hunger and extreme poverty, including at the World Food Summit of 1996, the United Nations Millennium Development Goals (MDGs), and the Comprehensive Africa Agriculture Development Programme (CAADP) of the New Partnership for Africa's Development (NEPAD) prepared in 2002.[125] The ASDS (2010) was designed to be fully compatible with the following the four pillars of CAADP,

[125] ASCU. 2011. National Food and Nutrition Security Policy. See: https://extranet.who.int/nutrition/gina/sites/default/files/KEN%202011%20National%20Food%20and%20Nutrition%20Security%20Policy%5B1%5D.pdf

with the target of reducing the number of people living below absolute poverty lines to less than 25 percent, achieving the first MDG, reducing food insecurity by 30 percent, to surpass the MDGs.[126] Despite the undertakings, none of the targets were achieved by 2015.

5.2 Addressing key chronic, emerging and structural problems

As a developing country, Kenya is expected to pursue forward looking and inclusive policies that promote food and nutrition security and poverty reduction among vulnerable groups and lead to sustainable and equitable growth. This section reviews the extent to which policies and strategies have addressed key emerging and structural problems, including high population growth and youth unemployment, gender inequalities and feminization of labour, vulnerabilities of pastoral communities, safety nets and the poor, food loss and waste, food safety, and climate change. For the most part, these problems remain widespread, confirming that past policies and strategies have failed to overcome these chronic and structural problems.

5.2.1 RESPONDING TO HIGH POPULATION GROWTH, UNEMPLOYMENT AND YOUTH OUTMIGRATION

Although population growth rate has declined from one of the highest in the world (over three percent *per annum* between 1960 and 1995) to about 2.7 percent in 2000 and 2.5 percent in 2017, Kenya is faced with an ever-increasing growth of population and job seekers. The Kenyan population increased from around nine million at the time of independence in 1963 to 52 million in 2019, nearly six-fold increase in 56 years.[127] Population pressure in rural areas and lack of alternative employment opportunity have given rise to land scarcity among smallholders as reflected in shrinking farm sizes, estimated at 0.47 hectares in Kenya, compared to 0.9 hectares in neighbouring Ethiopia and Tanzania.[128]

Depending on the political and policy environment, rural-urban migration can foster or hinder development. In Kenya, migration to urban areas often results in migrants taking up informal jobs where incomes are low and unpredictable, working conditions are poor, productivity is low, and workers have no social protection services. According to the UNECA[129], the share of persons employed in the informal sector in total non-agricultural employment in Kenya was 77.9 percent in 2013/2014, the highest among African countries with data.

Faced with limited access to inputs and services, as well as disincentives to produce food for market, most young and largely male individuals out-migrate to urban areas. One study found that 62.5 percent of migrants from western Kenya were males and 25 percent were females aged 15–29 years at the time of migration.[130] Regarding employment status, 80 percent of out-migrants reported that they were unemployed at the time of migration, and this proportion declined only slightly to 75 percent after migration, implying that most out-migrants remain unemployed after

[126] Government of Kenya. 2010. Agricultural Sector Development Strategy. See: http://extwprlegs1.fao.org/docs/pdf/ken140935.pdf

[127] World Population Review. 2019. Kenya Population 2019. See: http://worldpopulationreview.com/countries/kenya-population/

[128] George Rapsomanikis. 2015. The economic lives of smallholder farmers An analysis based on household data from nine countries. FAO. See: http://www.fao.org/3/a-i5251e.pdf

[129] UNECA. 2015. Industrializing through Trade. Economic Report on Africa. See: https://www.un.org/en/africa/osaa/pdf/pubs/2015era-uneca.pdf

[130] John O. Oucho, Linda A. Oucho and Vollan Ochieng. 2014. Is Migration the Solution to Poverty Alleviation in Kenya? Rural-Urban Migration Experiences of Migrants from Western Kenya to Kisumu and Nairobi. Working Paper 21. See: http://migratingoutofpoverty.dfid.gov.uk/files/file.php?name=wp21-oucho-oucho-ochieng-2014-is-migration-the-solution-to-poverty-in-kenya.pdf&site=354

migration. Rural youth migrate in the hope getting better opportunities for college or university education, career development and employment. In ASAL areas, conflict and unfavourable weather are the main reasons for men to migrate. It is reported that men working away from home do not adequately support their families, thus worsening poverty levels in such areas.[131]

In Kenya, as in many other countries, rural-urban migration is mainly responsible for rising urban unemployment and the proliferation of slums, where poverty is rampant and rural poverty transforms into urban poverty.[132] A study of slum areas in four cities in Kenya found that crimes such as theft, robbery, burglary/break-in and mugging were among the major challenges in slum areas, with 98.8 percent of the respondents witnessing such crimes being committed in the last three months of the study period. Asked to state causes of crime in slum areas in urban centres, 61.2 percent of the respondents cited youth unemployment as the main cause of crime, while poverty (11.3 percent) and illicit brews/drug abuse (9.5 percent) were cited as the other causes of crime in slum areas.[133] It appears that failure to tackle rural poverty has resulted in slums with extremely poor sanitary conditions in urban areas, where crime and drug abuses are rampant.[134] Located just five kilometres from Kenya's capital Nairobi, Kibera is the world's third-largest slum with roughly one million residents living in overcrowded shacks. Youth unemployment is also linked to rising radicalization and joining the al Shabab terror group.[135] A September 2018 statistical update by the UNDP placed Kenya's youth unemployment rate at 26.2 percent in 2017.[136] The youth also suffers from high levels of underemployment as many cannot find jobs in their field of training and become self-employed to pay the bills.[137] The threat of terrorist attack and crime is one of the major reasons for the booming private security business, which is probably the biggest employer (even bigger than the tourism industry) but wages are very low.[138] The number of private guards, estimated at over 300 000 in 2016, is more than five times the number of police and the defence forces, combined, and was projected to double by 2020.[139]

The private security service industry is expanding at the expense of the agricultural sector. As young people seek employment outside agriculture, the average age of a farmer has risen to 60 years.[140]According to IHBS, household head above the age of 50 years is 39.9 percent in rural areas

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[131] PRISE. 2016. Kenya: Country situation assessment Working paper. See: http://prise.odi.org/wp-content/uploads/2016/01/Low-Res_Kenya-CSA.pdf

[132] John O. Oucho, Linda A. Oucho and Vollan Ochieng. 2014. Op. cit.

[133] Security Research and Information Centre. A STUDY OF CRIME IN URBAN SLUMS IN KENYA: The Case of Kibra, Bondeni, Manyatta and Mishomoroni Slums. See: http://www.srickenya.org/publications/slum_Crime_Survey_Report_Thur_2.pdf

[134] Richard Kipkemboi Chesang. 2013. Drug Abuse Among The Youth In Kenya. International Journal of Scientific & Technology Research Volume 2, Issue 6, June. See: http://www.ijstr.org/final-print/june2013/Drug-Abuse-Among-The-Youth-In-Kenya.pdf

[135] Combating Terrorism Centre. 2012. Understanding Drivers of Violent Extremism: The Case of al-Shabab and Somali Youth: See: https://ctc.usma.edu/understanding-drivers-of-violent-extremism-the-case-of-al-shabab-and-somali-youth/

[136] UNDP. 2018. Human Development Indices and Indicators 2018 Statistical Update. See: https://africacheck.org/wp-content/uploads/2018/09/2018_human_development_statistical_update.pdf

[137]Africa Check. 2018. ANALYSIS: How many young Kenyans are unemployed? A look at the numbers. See: https://africacheck.org/2018/10/08/analysis-how-many-young-kenyans-are-unemployed-a-look-at-the-numbers/

[138] How we made it in Africa. 2014. Kenya's private security industry booming due to terror threats. https://www.howwemadeitinafrica.com/kenyas-private-security-industry-booming-due-to-terror-threats/41115/

[139] Standard Digital. 2016. Private security services to double by 2020. See:https://www.standardmedia.co.ke/article/2000214166/private-security-services-to-double-by-2020

[140] Capital FM. 2018. Agriculture needs to be at the heart of Kenya's growth strategy. See:

(many of these are also headed by women), compared to only 19.6 percent in urban areas. The elderly and women engage in subsistence farming but face considerable shortage of labour, in addition to limited access to inputs, finance, output markets, and extension and advisory services. Less intensive farming practices due to shortage of labour and other inputs results in lower productivity. The elderly and women have mobility and time constraints on top of the discrimination in access to land, inputs and extension services.[141]

The Youth in Agribusiness Strategy was developed by the Ministry of Agriculture in 2017 and identifies 11 strategic objectives to be implemented at an estimated budget of KSH22 billion over the period of 2017–2021 to address the challenges that hamper meaningful and sustainable youth participation in agribusiness. As indicated in section 4.1.2, the strategy is not incorporated into MTP III and lack of funding and coordination is the main challenge to its implementation. On-farm and non-farm employment strategies need to focus on the creation of decent and sustainable jobs and livelihoods in rural areas through empowerment, skill development, improved access to finance and material services. The Kenyan government also established the Youth Enterprise Development Fund in 2007 as a state corporation under the Ministry of Public Service, Gender and Youth Affairs. The fund is one of the flagship projects of Vision 2030, under the social pillar, and it seeks to create employment opportunities for young people by providing easy and affordable financial and business development support services to youth who are keen on starting or expanding businesses. However, the fund has been marred by mismanagement, corruption, and ambiguous eligibility criteria.[142] A number of Kenyan young people are migrating internationally in search of remunerative employment. Emigration is a stepwise migration following rural-rural and rural-urban migrations within Kenya.[143] A more effective rural and agricultural development policy is needed to make sure the youth is not trapped in a vicious cycle of unemployment, poverty, crime and drugs.

5.2.2 OVERCOMING THE CHALLENGES OF GENDER INEQUALITIES AND FEMINIZATION OF LABOUR IN AGRICULTURE

Traditionally women used to stay at home to take care of the family and cook for the men working on the farm and the rest of the family. This has changed over time as a result of socio-economic and policy changes that encouraged young men to increasingly seek alternative employment opportunities in non-farm activities. Poor rural development processes that could not generate adequate income are the main reason for the migration of men. In addition to handling all domestic chores and looking after children and the elderly, women have to assume farming responsibilities. It is reported that Kenyan women make up between 42 percent and 65 percent of the agricultural labour force.[144] Some reports indicate that women run more than 80 percent of Kenya's farms.[145]

Despite women's important new role in the agricultural sector, government policies have done very

https://www.capitalfm.co.ke/eblog/agriculture-needs-to-be-at-the-heart-of-kenyas-growth-strategy/

[141] Olivier De Schutter. 2017. The political economy of food systems reform European Review of Agricultural Economics 44(4):705-731. September. See: https://www.researchgate.net/publication/323412483_The_political_economy_of_food_systems_reform

[142] Maurice Sikenyi. 2017. Does Kenya's Youth Enterprise Development Fund Serve Young People? IDS Bulletin. Vol. 48, No.3. https://bulletin.ids.ac.uk/idsbo/article/view/2874/ONLINE%20ARTICLE

[143] IOM Kenya. 2015. Migration in Kenya. A country Profile. See: https://publications.iom.int/system/files/pdf/migration_profile_kenya.pdf

[144] Diiro GM, Seymour G, Kassie M, Muricho G, and Muriithi BW.2018. Women's empowerment in agriculture and agricultural productivity: Evidence from rural maize farmer households in western Kenya. PLoS ONE 13(5). https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5978796/pdf/pone.0197995.pdf

[145] Andrew Wasike. 2013. Women take over Kenya's farming sector. DW. 9 April. See: https://www.dw.com/en/women-take-over-kenyas-farming-sector/a-16716322

little to address gender inequalities. Only 0.5 percent of women have access to financial services and only around six percent own land. Limited land ownership is the main reason for the low access to formal credit. Cultural norms and traditions restrict women's ability to inherit land and contribute to widening gender gaps in farmland ownership.[146] Women who do not own land cannot join farming cooperatives that would have helped them interact with other people who could help them improve production or sales.[147] Other gender inequalities in Kenya's agricultural sector include limited access to inputs, labour, education, extension services, and agricultural markets and less control over revenue from agricultural production than men. Increasing participation of women in the agricultural labour force or feminization of agriculture was not accompanied by measures to empower women.

In 2010, Kenya drafted a new constitution guaranteeing equal rights for women to inherit property and own land, but many people in Kenya's rural areas are unaware of the new constitution.[148] Women remain disadvantaged and discriminated against because of customary laws and practices, which continue to prohibit women from owning or inheriting land on account that they would soon leave and get married elsewhere, thereby acquiring the properties of their husbands. Similarly, female children seldom inherit from their parents on an equal basis as their brothers because they are traditionally expected to marry and become 'absorbed' by their husbands' families. Despite the constitution and various national statutes that give protection to women's rights to land and property, customary practices in Kenya generally grant women secondary rights to land.[149]

Gender-based barriers render women vulnerable to climate change. In cases of crop failure, cultural factors often make it easier for men to leave their farms in search of employment. Women stay on the farm and struggle to feed the family with declining resources and uncertain weather. The fact that women have diminished assets and resources makes it very difficult to help them plan for and potentially avert the next crisis. Poverty is reported to be most severe among women, especially in ASAL areas, because of inequality, limited access to and ownership of land, lack of income-generating opportunities, and isolation in economic services and decision-making.[150]

A recent study in western Kenya has shown that improvement in agricultural productivity, food security and nutrition cannot be achieved without empowerment of women.[151] Improved access to land, credit, productive inputs and technology, education, advisory services and markets are critical to empower women farmers and increase agricultural productivity and achieve food and nutrition security. Greater effort is required to integrate gender into the national, sectoral and county policy, planning and budgeting processes. Integrating women's empowerment into existing and future projects and programmes is key to reversing the stagnation in staple food production.

5.2.3 ADDRESSING THE CHALLENGES OF ARID AND SEMI-ARID LANDS (ASALS)

Declining agricultural productivity amid continuous population growth poses critical challenges to food security in Kenya as two to four million people, largely from ASAL areas, receive food aid

[146] Diiro GM, Seymour G, Kassie M, Muricho G, and Muriithi BW.2018. Op. cit. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5978796/pdf/pone.0197995.pdf
[147] Thompson Reuters Foundation. 2013. Challenges and Opportunities for Rural Kenyan Women. See: http://news.trust.org//item/20130214131500-km0pr/
[148] Andrew Wasike. 2013. Op. cit. https://www.dw.com/en/women-take-over-kenyas-farming-sector/a-16716322
[149] Pauline Musangi. 2017. Women Land And Property Rights In Kenya. Paper prepared for presentation at the "2017 WORLD BANK CONFERENCE ON LAND AND POVERTY" The World Bank - Washington DC, March 20-24. See: https://landportal.org/library/resources/women-land-and-property-rights-kenya
[150] PRISE. 2016. Op. cit. http://prise.odi.org/wp-content/uploads/2016/01/Low-Res_Kenya-CSA.pdf
[151] Diiro GM, Seymour G, Kassie M, Muricho G, Muriithi BW. 2018. Op cit.

annually. Kenya has 23 ASAL counties (this number has increased to 29 recently as indicated in section 1), which constitute about 88 percent of the country's land area. Of the 23 counties, nine are classified as arid and 14 as semi-arid (Figure 10). The arid counties are predominantly pastoral (high mobility of pastoralists and livestock), with limited crop farming while the semi-arid counties are mostly agropastoral, with integrated crop/livestock production systems. ASALs are generally marked by low human development (e.g. high levels of poverty, low literacy), high degree of land degradation, poor infrastructure, unfavourable markets, and exposure to high incidence of drought and flood.

Rainfall is erratic, plunging agropastoralist communities, which depend on rainfed agriculture, into dire food shortages following drought or dry spells. Both pastoralists and agropastoralists in Kenya are more frequently affected by droughts than other groups but those who have kept their pastoral practices have adapted to shocks more readily than the agropastoralists who have quickly transitioned to a sedentary way of life. In many cases, the agropastoralists have limited access to land and insufficient resources to irrigate their crops. They rely on a much smaller and less flexible set of coping mechanisms than pastoralists.[152] Populations in semi-arid areas thus face challenges equal to or greater than those in arid areas.

Extensive grazing is a major source of livelihoods for pastoralists and agropastoralists in the ASAL. But most of the rangelands are under pressure from pastoralists and agropastoralists who face competition from increasing influx of farmers from the overcrowded higher potential areas, migrating into the drylands. Increasing livestock densities on the ever-dwindling land space left for grazing. This has adversely affected the production potential and carrying capacity of Kenya's rangelands. Loss of vegetation cover and increased erosion due to livestock overgrazing has worsened with the growth of the pastoral population and subsequent increase in livestock populations, causing severe degradation and reduced livestock yields.

High cost of food and fodder can be very stressful to low income pastoralists. Households have to sell livestock to buy food as well as fodder, but ASAL markets are weakly integrated both among themselves and with the main supply market because of poor roads. Several days are needed to reach remote markets during the dry season and in the rainy season roads become impassable. Unfavourable terms of trade due to declining livestock prices combined with rising grain and fodder prices are among the major food security challenges in ASAL counties. Grain prices, which are already high in Kenya, are often exorbitant in ASAL areas, especially during seasons of drought or flood. It has been reported that cereal prices in remote counties such as Turkana and Mandera can be 100 percent above those of the base markets (WFP, VAM Kenya 2016).[153]

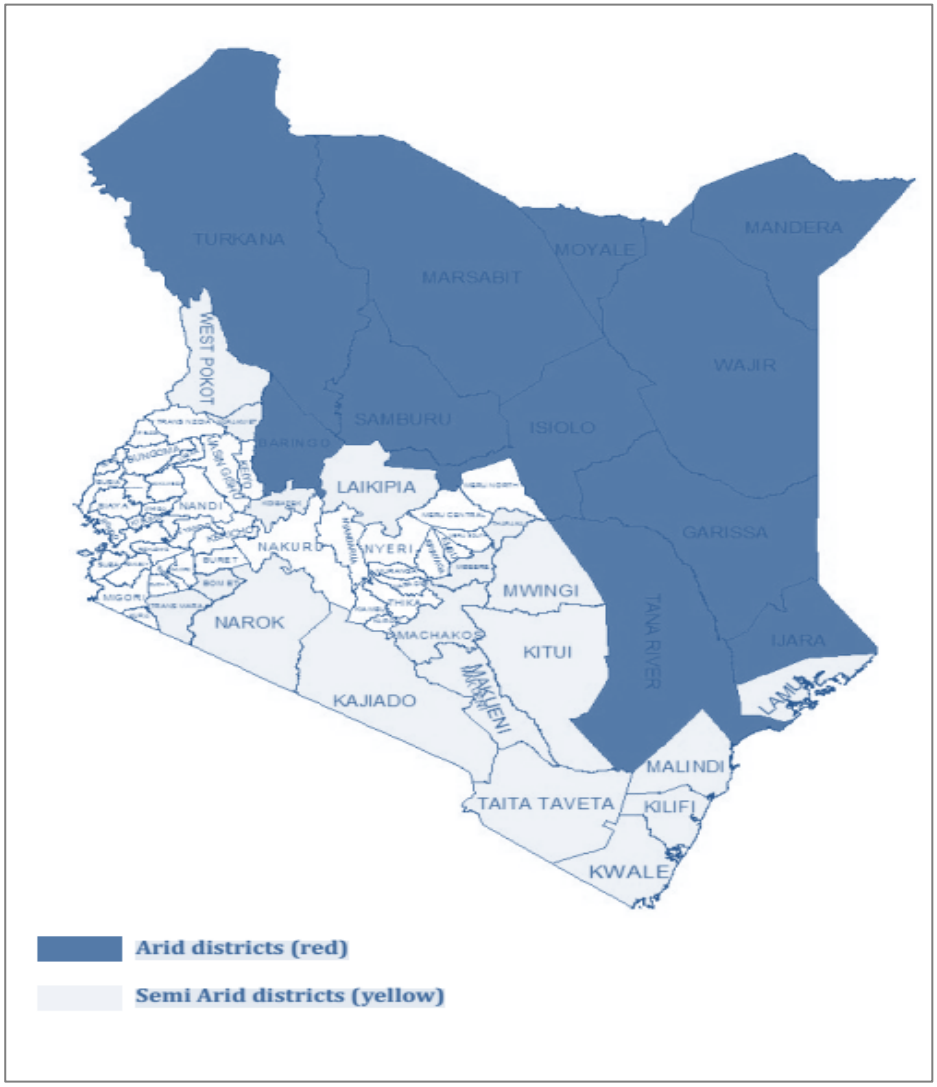
The government launched a Medium Term Plan for Drought Risk Management and Ending Drought Emergencies (EDE) for 2013–2017. The EDE strategy commits the government to end drought emergencies by 2022, by: eliminating the conditions that perpetuate vulnerability, enhancing the productive potential of the region, and strengthening institutional capacity for effective risk management. One of the major instruments is the disaster risk finance that the country developed for its 23 most drought-prone counties. The National Drought Management Agency (NDMA) runs the national drought early warning system and the disbursement of the disaster risk finances. Funding is allocated from Kenya's national budget, as required under the constitution, but

[152]Sara Signorelli, Carlo Azzarri and Cleo Roberts. 2016. Op. cit. See: http://www.technicalconsortium.org/wp-content/uploads//2016/02/Report-9-Malnutrition-and-Climate-Patterns_D7_19Feb2016.pdf

[153] WFP. 2016. Comprehensive Food Security and Vulnerability Analysis (CFSVA) Kenya 2016. See: https://documents.wfp.org/stellent/groups/public/documents/ena/wfp285586.pdf

additional finance also comes from development partners, such as the European Union and the World Bank. The disaster risk finance is accessed through various funds (such as the National Drought Emergency Fund and the EU-funded Drought Contingency Fund) via targeted projects. The implementation EDE is led by the relevant departments of the national and county governments, working on six pillars[154] to strengthen synergy among sectors and agencies. One of the pillars, sustainable livelihoods, is led by the State Department of the Livestock of the Ministry of Agriculture, Livestock, Fisheries and Cooperative and FAO.[155] The artificial divide between humanitarian and development practice is rejected, but progress in ending hunger and tackling vulnerability and chronic poverty has not been easy. In 2019, a major drought emergency caused a situation in which 1.2 million people were at risk of death from famine and 14.7 million people were without food as the drought took its toll.[156]

FIGURE 10: MAP OF KENYA SHOWING ASAL COUNTIES



[154] The pillars are Peace and Security, Climate-Proofed Infrastructure, Human Capital, Sustainable Livelihoods, Drought Risk Management, and Institutional Development and Knowledge Management.
[155] Republic of Kenya. 2015. Common Programme Framework for Ending Hunger. April. See: http://extwprlegs1.fao.org/docs/pdf/ken152740.pdf
[156] Star. 2019. Alarm as 1.2 million people face death due to hunger. 18 March. See: https://www.the-star.co.ke/news/2019-03-18-state-says-147-million-people-starving/

5.2.4 ACCESSING SAFETY NET AND SUBSIDY PROGRAMMES BY THE POOR

Social protection has emerged as a major strategic policy response to various contingencies in developing countries. Social protection schemes are introduced as a safety net in periods of heightened risks due to environmental stresses and natural disasters, sudden food and fuel price spikes, episodic financial and economic crises, and the damaging social and economic consequences of structural adjustment policies and austerity programmes. In response to the 1984/1985 drought, the worst in more than 100 years, the government began commercial import of food, established a taskforce to manage food distribution and started negotiating with the donor community for food assistance.[157] Currently, the social assistance programme of Kenya includes: (i) cash transfers, (ii) food transfers, (iii) public works and (iv) grants. The government has been supporting four cash transfer programmes that comprise the National Safety Net Programme (NSNP), namely: (i) the Cash Transfer for Orphans and Vulnerable Children (OVC), (ii) the Older Persons Cash Transfer, (iii) the Cash Transfer for Persons with Severe Disability (PWSD), and (iv) the Hunger Safety Net Programme (HSNP).

Food transfer programmes are mainly of two types: (i) School Feeding Programmes, (ii) General Emergency Relief, focussing on ASAL areas, and (iii) food subsidy for urban areas. The government mandated the NCPB to sell maize (procured at higher price locally or from abroad) at a subsidized price to millers who would then sell at lower prices to consumers. In May 2017, for instance, the government decided to allow maize to be imported (in response to a major drought) and subsidised the imports to reduce consumer prices. The food subsidy, which came to an end in October 2017, reduced the price of a 2 kg packet of maize flour from KSH140 to KSH90, a subsidy of approximately 35 percent. The subsidy stabilized local consumer maize prices, but it was achieved at a huge cost to the government.

The public works programme is designed to absorb young people into the job market, while the grants mainly refer to the Njaa Marufuku grants, which are one-off payments in the form of home-grown school feeding funds transferred to schools to enable them to generate income for their members.

Reviews of social assistance programmes have highlighted the inadequacy of the existing interventions. While repeated food transfer to poor families in the ASALs has kept people alive, it has not reduced poverty. Emergency payments are used to support basic needs but are insufficient to prevent serious depletion of productive assets, such as livestock loss.[158] Shocks such as drought and loss of animals continue to adversely affect food and nutrition insecurity in Kenya. Management and logistical shortcomings have affected youth public work programmes. Funding for social assistance is dependent on development partners (estimated at 90 percent), making it unreliable and unsustainable. NGOs implementing a range of social protection interventions face challenges such as inadequate resources and lack of coordination.[159]

According to the National Social Protection Policy (2011), social protection programmes in Kenya, specifically the social assistance programmes, face five main challenges: (i) ineffective coordination

[157] Monica Nyamwange. 1995. Famine Mitigation In Kenya: Some Practices, Impact And Lessons. Middle States Geographer, 28:37-44. See: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.560.9471&rep=rep1&type=pdf

[158] Farhat *et al*. (2017) Evaluation of the Kenya Hunger Safety Net Programme Phase 2: Emergency payments deep dive study, Oxford Policy Management: See: https://www.opml.co.uk/files/Publications/a0013-evaluation-kenya-hunger-safety-net-programme/emergency-payments-report.pdf?noredirect=1

[159] Ministry of Gender, Children and Social Development. 2011. Kenya National Social Protection Policy. June. See: http://www.africanchildforum.org/clr/policy%20per%20country/kenya/kenya_socialprot_2011_en.pdf

of social protection programmes (programmes are implemented by different ministries and in different departments); (ii) targeting errors (lack of universalism and high levels of inclusion and exclusion errors); (iii) inadequate exit, graduation and sustainability mechanisms (inadequate structures to ensure that those who no longer qualify for support are removed from the programmes); (iv) inadequate mechanisms for financing social protection (most of the current financing comes from development partners); (v) lack of comprehensive legislation on social protection (no legislation that ties these three pillars, social assistance, social security and health insurance together to ensure a coordinated and coherent approach to social protection programming).[160] Greater effort is required to address the isolation, insecurity, inadequate management and coordination, weak economic integration, climate change and environmental degradation to ensure food and nutrition security in Kenya, especially in the ASAL areas.

5.2.5 ADDRESSING THE CHALLENGES OF FOOD LOSS AND WASTE AND FOOD SAFETY

Food loss and waste

With commercialization that increased the number of stakeholders involved in the production, distribution, and consumption of food and in the management of food systems, food loss and waste have emerged as important dimensions of food and nutrition security in developing countries. Food loss refers to food that spills, spoils or incurs an abnormal reduction in quality at the production, storage, processing and distribution stage before it reaches the consumer, while food waste refers to food that is of good quality and fit for human consumption, but is discarded before or after it spoils. Food waste mostly occurs at the retail and consumption stages, resulting from negligence or a conscious decision to throw away food.[161]

As in many developing counties, the extent of food loss and waste in Kenya varies from one source to another. One study[162] estimated postharvest losses at 30–40 percent, translating to 50 million bags valued at KSH30 billion every year. Billions of shillings are lost every year when large quantities of fruit, milk, fish and vegetables go bad in the market. A recent figure from the Kenya National Bureau of Statistics (KNBS) showed that KSH150 billion worth of food went to waste in 2017. Farmers lost over 1.9 million tonnes of food, and maize, Kenya's staple food, was the hardest hit, with farmers losing KSH29.6 billion to post-harvest losses, including rodents, poor handling and aflatoxin, a toxin produced by fungi following exposure to moisture.[163]

Kenyan farmers grow green beans, baby corn, broccoli, sugar snap peas and many other vegetables for the export market, but much of their harvest is wasted due to the unnecessarily cosmetic standards of European supermarkets that result in discarding produce for non-compliance. Food loss and waste is made worse by climate change and unexpected rains at harvest. The losses of smallholders, who rely on sun-drying to ensure that crops are well dried before storage, can be very high if unfavourable weather conditions prevent crops from drying sufficiently. [164]

The Ministry of Agriculture, Livestock, Fisheries and Cooperative has responded by promoting various measures to reduce crop post-harvest losses, including training of extension staff, provision of moisture meters and hand-shellers, training of farmers, partnering with relevant stakeholders, supporting warehouse receipt systems, WRSs, investing in community-based storage structures,

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[160] PASGR. 2017. Strengthening Kenya's Social Protection Agenda through Research, Programming and Policy. June. See: http://www.pasgr.org/wp-content/uploads/2017/11/Strengthening-Kenyas-Social-Protection-Agenda-through-Research-Programming-and-Policy-Policy-Brief-1.pdf

[161] J. Kimiywe. 2015. Food and nutrition security: challenges of post-harvest handling in Kenya Conference on 'Food and nutrition security in Africa: new challenges and opportunities for sustainability'. Proceedings of the Nutrition Society (2015), 74, 487–495. See: https://pdfs.semanticscholar.org/d62c/9be9df532872b9e4307e5585262b8a2aad65.pdf

[162] *Ibid.*

[163] Dominic Omondi. 2019. Kenya Post Harvest Losses Statistics. Cropnuts. See: https://cropnuts.com/kenya-post-harvest-losses-statistics/

[164] J. Kimiywe. 2015. Op. cit. https://pdfs.semanticscholar.org/d62c/9be9df532872b9e4307e5585262b8a2aad65.pdf

increasing the area under irrigation, and encouraging value addition at farm level. The NCPB has certified warehouses for provision of storage services under its WRS. The measures have yet to reduce food loss and waste and there is a growing call for a more effective and coordinated approach. In June 2019, the Warehouse Receipt System (WRS) Bill 2017 was signed into law by President Uhuru to regulate WRSs and facilitate the use of warehouse receipts (as collateral) for bank loans,[165] and pave the way for a national commodity exchange that makes it possible to trade in agricultural commodities, hence contributing to the modernization of storage and stabilization of grain prices. The ASTGS has called for the establishment 1000 farmer-facing SMEs that provide inputs and equipment, including irrigation, processing and post-harvest aggregation (Flagship 1) and six large-scale agroprocessing and value addition hubs through a one-stop shop for agroprocessors (Flagship 3).

The different interventions require adequate funding and a coordinated effort. For instance, the WRS act provides for the creation of a Warehouse Receipt Council, which comprises stakeholders and the various government institutions that have a regulatory role in the industry. The council is mandated, among other things, to establish, maintain and develop a warehouse receipt system for agricultural commodities in Kenya, establish a central registry for the management of warehouse receipt transactions and develop and implement an efficient commodity grading and weighing system that ensures quantity and quality assurance.[166] The treasury has yet to allocate sufficient resources towards implementation of the bill.

Food safety

Food safety refers to handling, preparing and storing food in ways that best reduce the risk of individuals becoming sick from foodborne illnesses – a major challenge for governments in poor countries trying to ensure health for their people and compete for export markets.[167] WHO, for example, places the global health burden of foodborne disease on a par with HIV/AIDS, TB, or malaria. In 2016, the World Bank estimated the financial burden of lost human capital, treating disease and trade loss associated with foodborne illnesses and food safety issues in the tens of billions of US dollars. It is also shown that this burden is not equally distributed across the world: 98 percent of health impacts, according to WHO, are shouldered by developing countries, and Africa carries the largest load.[168]

In Kenya, approximately 70 percent of all episodes of diarrhoea are attributable to ingestion of contaminated food and water. Most of the marketed milk is sold unprocessed, outside the regulated channels. Similarly, most of the slaughterhouses do not meet export standard requirements. Aflatoxin poisonings, especially in maize, have been fatal in years such as 2004 when a total of 317 cases were reported, resulting in 125 deaths.[169] Aflatoxins are often found in milk but their impact on health is not well established. In addition to poor hygiene and handling, chemical contaminants (e.g. pesticide residues) are frequently found on fruits and vegetables in Kenya.[170]

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[165] CGA. 2019. The Warehouse Receipt System: Will it solve farmer problems. July 30: See: http://cga.co.ke/2019/07/30/warehouse-receipt-system-kenya/

[166] Kenya Gazette Supplement. 2018. The Warehouse Receipt System Bill. 7th February. See: http://kenyalaw.org/kl/fileadmin/pdfdownloads/bills/2018/WarehouseREceiptSystemBill_2018.pdf

[167] Delia Grace. 2015. Food Safety in Low and Middle Income Countries. Int J Environ Res Public Health. 2015 Sep; 12(9): 10490–10507. See: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4586623/

[168] Silvia Alonso. 2019. The Critical and Complex Need to Address Food Safety in Africa. Based on *presentation at the African Union Special Event on Trade of Safe Food in Free Trade Areas, at the held in Addis Ababa, February 12 and 13. See:* https://a4nh.cgiar.org/2019/02/13/the-critical-and-complex-need-to-address-food-safety-in-africa/

[169] Oloo JEO. 2010. Food Safety and Quality Management in Kenya: An Overview of the Roles Played by Various Stakeholders. AJFAND, Vol. 10, No. 11, November. See: https://www.researchgate.net/publication/228389228_Food_safety_and_quality_management_in_Kenya_An_overview_of_the_roles_played_by_various_stakeholders

[170] Eric Yen, Vivian Hoffmann, Delia Grace, Joseph Karugia and Rikki Aguda. 2018. Food Safety in Kenya: Focus on fruits and vegetables. IFPRI Project Note, March. See: https://cgspace.cgiar.org/rest/bitstreams/160734/retrieve

The antimicrobial residues are also commonly found in Kenyan milk; increasing the likelihood of antibiotic-resistant infections in people.[171] Fatalities linked to the consumption of meat from animals infected with Rift Valley Fever have caused public health concerns. Abuse of additives, or fraud in using chemicals like calcium carbide as an artificial ripening agent in fruits and vegetables by unscrupulous traders have been reported. Large doses of sodium metabisulphite in meat preservation are common. Public awareness of these and other cancer-causing chemicals is very low.[172]

In terms of addressing food safety concerns, Kenya has over 22 food safety-related legislations under different departments and agencies. Kenya also became a member of the Codex Alimentarius Commission in 1969, adopting more than 100 Codex standards. Kenya has developed a National Food and Nutrition Security Policy (2011) in which food safety is a key pillar and the National Food Safety Coordinating Committee (NFSCC)[173] is strengthened as an inter-ministerial body to increase awareness about the impact of food safety and quality, and initiate the revision and harmonization of all the relevant acts of parliament.[174] [175] In 2013, the Ministry of Health developed the National Food Safety Policy that proposed the National Food Safety Authority.[176] In April 2019, a bill was drafted for an act of Parliament to establish the Kenya Food and Drug Authority to provide for the regulation of food, drug, chemical compounds, medical devices and other health technologies.[177] It has been eight years since the government promised (in its Food and Nutrition Security Policy) to address the institutional gap in food safety issues and the public is still waiting for a coordinated action. Foodborne illnesses, and outbreaks, fraud, and other ills are still reported with regularity. The whole process is also disrupted by the introduction of the devolved system of governance that assigned, at least partly, the responsibility of implementing food safety directives to the counties.[178] Lack of public awareness is the other major challenge for ensuring food safety in Kenya.

5.2.6 MANAGING CLIMATE CHANGE AND CONSERVING NATURAL RESOURCES

Livestock and agricultural production systems in Kenya are highly dependent on rainfall. Only 1.7 percent of Kenya's agricultural lands are irrigated (GoK, 2010a)[179], which leaves agricultural production and food security, as well as national economic performance, highly sensitive to changes in rainfall volumes and patterns (GoK, 2013)[180]. Climate projections indicate that temperatures in Kenya will continue to rise, exacerbating drought conditions and increasing the risk of heat stress,

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[171] Delia Grace, Silvia Alonso, Florence Mutua, Vivian Hoffmann, Tezira Lore, and Joseph Karugia. 2018. IFPRI Project Note. March. See: https://cgspace.cgiar.org/rest/bitstreams/160732/retrieve

[172] Bernard Oloo, Lanoi Daisy, and Ruth Oniang'o. 2018. Food Safety Legislation in some Developing Courtiers. Intech Open. 11 July. See: https://www.intechopen.com/books/food-safety-some-global-trends/food-safety-legislation-in-some-developing-countries

[173] The NFSCC was constituted in February 2006 with Ministry of Health as the Secretariat, while the chairmanship lies with the State Department of Agriculture – Ministry of Agriculture and Irrigation. Its membership is drawn from ministries/ state departments/Semi-Autonomous Government Agencies (SAGA) of health, agriculture, livestock, fisheries and trade; academia; and the Council of Governors of the government of Kenya.

[174] Bernard Oloo, Lanoi Daisy, and Ruth Oniang'o. 2018. Op. cit. https://www.intechopen.com/books/food-safety-some-global-trends/food-safety-legislation-in-some-developing-countries

[175] Republic of Kenya. 2011. National Food and Nutrition Security Policy. See: https://extranet.who.int/nutrition/gina/sites/default/files/KEN%202011%20National%20Food%20and%20Nutrition%20Security%20Policy%5B1%5D.pdf

[176] Republic of Kenya. 2013. The National Food Safety Policy. See: http://www.kilimo.go.ke/wp-content/uploads/2019/09/The-National-Food-Safety-Policy.pdf

[177] Kenya Gazette Supplement. 2019. The Kenya Food and Drug Authority Bill. 15th April. See: http://www.parliament.go.ke/sites/default/files/2019-05/Kenya%20Food%20and%20Drugs%20Authority%20Bill%2C%202019_compressed.pdf

[178] Daily Nation. 2018. Food on Sale Filthy and contains poisons. 4 March. See: https://www.nation.co.ke/news/How-the-food-you-eat-exposes-you-to-diseases/1056-4328562-138816m/index.html

[179] Government of Kenya. 2010. Agriculture Sector Development Strategy 2010-2020

[180] Government of Kenya. 2018. Kenya Climate Smart Agriculture Implementation Framework 2018-2027.See: https://www.undp.org/content/dam/kenya/docs/energy_and_environment/2018/The%20Kenya%20CSA%20Implementation%20Framework%202018-2027.pdf

higher rates of evaporation and reduced crop productivity. The incidence of drought has increased over the past four decades due to factors including deforestation. Rainfall patterns in Kenya are also highly variable within and between years and are heavily influenced by El Niño and La Niña events. Long rains in central and eastern Kenya, for instance, have declined by more than 100 mm since the mid-1970s, while a warming of more than 1° Celsius may exacerbate drying impacts, especially in lowland ASAL areas. Each drought event has caused severe crop and livestock losses, food insecurity and population displacement.[181] [182]

Climate change is also affecting water availability in Kenya. With per capita access to renewable internal freshwater resources estimated to be 467 m^3 in 2013, Kenya is one of the most water-scarce countries in Africa. Water availability is particularly acute in the ASALs, where groundwater is often the only reliable source of water. The country's five water towers,[183] covering more than one million hectares (out of a total area of 58 million hectares), are the source of all but one of Kenya's major rivers. However, significant deforestation, as a result of population growth, agricultural conversion and charcoal production in these regions, has disrupted the hydrological regime by reducing infiltration and increasing run-off and the siltation of water reservoirs.[184]

The Government of Kenya has been addressing climate change impacts, especially drought, through adaptation interventions geared towards disaster risk reduction, humanitarian action, preparedness and response actions. NDMA's main focus is on early warning and response activities. As indicated in one of the NDMA's annual reports, investments in climate smart agriculture to reduce the vulnerabilities of pastoralists to changing temperature regimes and precipitation patterns, and promote water harvesting and storage, irrigation infrastructure development and efficient water use are limited. Over the last few years, NDMA initiated some six major earth dams and pans, but such structures are unlikely to provide solutions because of hydraulic, seepage, structural and operational failures in Kenya. Maintenance often receives insufficient attention, while public awareness and participation of the involved communities is frequently inadequate. [185]

Since 2009, the Kenya government set out to reduce reliance on rain-fed production of food crops by investing in irrigation schemes. In 2013, the government instituted massive new investments in irrigation with a target of irrigating 404 800 hectares in the ASAL areas of Turkana and the Tana Delta by 2017, as spelt out in the Medium Term Plan (MTP-II 2013–2017). Galana/Kulalu irrigation project was developed as a large-scale project in which 485,622 hectares will be leased by private sector investors who are expected to invest in production of various crops, including maize. It has been projected that the project could produce 40 million bags of maize, which is above expected rain-fed production levels.[186] After several years of delayed construction, corruption and dismal performance (managing to cultivate between 200 and 800 hectares in one season), Galana/Kulalu

[181] Parry, J-E. 2016. Review of current and planned adaptation action in Kenya. CARIAA Working Paper no. 16. International Development Research Centre, Ottawa, Canada and UK Aid, London, United Kingdom. See: https://www.iisd.org/sites/default/files/publications/idl-55875-kenya.pdf

[182] Ministry of Environment and Natural Resources. 2016. Kenya National Adaptation Plan 2015 – 2030. July. See: https://www4.unfccc.int/sites/NAPC/Documents%20NAP/Kenya_NAP_Final.pdf

[183] These are: the Aberdare Ranges, Cherangani Hills, Mau Escarpment, Mt. Elgon, and Mt. Kenya

[184] Parry, J-E. 2016. Op. cit. https://www.iisd.org/sites/default/files/publications/idl-55875-kenya.pdf

[185] Ministry of Water and Irrigation. 2015. Practice Manual for Small Dams, Pans and Other Water Conservation Structures in Kenya. 2nd Edition. See: http://smalldamsguidelines.water.go.ke/useful_downloads/pdf/PRACTICE_MANUAL_FOR_SMALL_DAMS_PANS_AND_OTHER_WATER_CONSERVATION_STRUCTURES_IN_KENYA.pdf

[186] Leonard Haggai Oduori and Timothy Njeru. 2016. A Review Paper on Large scale Irrigation in Kenya: A Case Study of Maize. WP58/2016. See: http://www.renapri.org/wp-content/uploads/2017/01/Tegemeo_WP58_2016.pdf

collapsed in early 2019 after the contractor left over non-payment controversy with the National Irrigation Board.[187] [188]

Large-scale irrigated farming favours private investors rather than indigenous pastoral communities. The evidence shows that large irrigation projects do not represent a sustainable response to climate change and food insecurity: such schemes in sub-Saharan Africa often require considerable investments and they do not perform as efficiently as planned due to technical and management issues. Smallholder irrigation systems, on the other hand, would significantly increase agricultural production and reduce food insecurity and poverty levels in East Africa, especially when combined with adoption of new technologies such as motorized pumps, drip kits and treadle pumps and improved access to land, finance and markets.[189] A recent JRC study[190] on Kenya also concluded that measures such as irrigation and input subsidies that are less biased towards large farms, to the detriment of smallholders, have the greatest impact on production and rural-urban migration.

Mitigation of climate change and sustainable resource management practices such as integrated soil nutrient management, soil and water conservation, promotion of agroforestry, conservation agriculture, proper management of agricultural waste (e.g. using manure to produce biogas), restoration of degraded soils and conservation of soil biodiversity and forestry are highlighted as critical in the policies and strategies the Ministry of Agriculture, Livestock, Fisheries and Cooperative (e.g. Kenya Climate Smart Agriculture Strategy), Ministry of Environment and Forestry (e.g. Kenya Strategic Investment Framework for Sustainable Land Management), Ministry of Devolution and the ASALs (e.g. NDMA), Ministry of Lands and Physical Planning (e.g. National Land Use Policy, Sessional Paper No. 1 of 2017), and Ministry of Tourism and Wildlife (e.g. National Wildlife Strategy, focusing on rehabilitation and conservation of forests, savannahs, freshwater, etc.). However, the different ministries rarely coordinate their activities. Lack of an effective coordination between the concerned ministries and other stakeholders, including county governments, is the main stumbling block. Smallholders and pastoralists need to be the target of a coordinated cross-sectoral approach for efficient use of irrigation, adaptation and mitigation of climate change as well as sustainable diversification and improved rangeland management to boost productivity, ensure resilience and reduce greenhouse gas emissions.

[187] Daily Nation. 2019. Sh7bn Galana Kulalu project collapses after Israeli firm leaves. 23 February.https://www.nation.co.ke/news/Sh7-billion-Galana-Kulalu-project-collapses-/1056-4995288-3n1885z/index.html

[188] Republic of Kenya. 2018. Third Medium Term Plan 2018 – 2022. See: http://planning.go.ke/wp-content/uploads/2018/12/THIRD-MEDIUM-TERM-PLAN-2018-2022.pdf

[189] Prossie Nakawukaa,, Simon Langanb, Petra Schmittera and Jennie Barron. 2017. A review of trends, constraints and opportunities of smallholder irrigation in East Africa. .gfs.2017.10.003. See: https://www.researchgate.net/publication/320845987_A_review_of_trends_constraints_and_opportunities_of_smallholder_irrigation_in_East_Africa

[190] P. Boulanger, H. Dudu, E. Ferrari, A.J. Mainar Causapé J. Balié and L. Battaglia. 2018. Policy options to support the Agriculture Sector Growth and Transformation Strategy in Kenya: A CGE analysis. European Commission. JRC Science for Policy Support. See http://publications.jrc.ec.europa.eu/repository/bitstream/JRC111251/jrc111251-print.pdf

6. Governance structure and institutional capacity - national level

Governance structure and institutional capacity play a major role in policy effectiveness. Institutional capacity forms the building block for effective governance and response to emerging and structural problems. Good governance is characterized by a participatory, consensus-oriented, accountable and transparent system. It is responsive, effective and efficient, equitable and inclusive and follows the rule of law. The section examines: the relevance and adequacy of organizational structures, planning and budgeting processes in improving service delivery, coordination mechanisms, public participation, and monitoring and evaluation, and information systems at national level.

6.1 Organizational structures and their effectiveness

6.1.1 THE STRUCTURE OF THE KENYAN GOVERNMENT

The Government of the Republic of Kenya is composed of a national government and 47 counties, each with its own semi-autonomous government. The national government is headed by the president (and his deputy) as the head of state and leader of the national government. The national government has three arms, the executive, the legislature and the judiciary. Each of the three arms is independent in the context of separation of powers in a democratic state within a presidential system of government.

The Executive is composed of the Presidency, i.e. the President, the Deputy President and the Cabinet. The Cabinet is composed of Cabinet Secretaries who head sectoral ministries. There can only be 14–21 Cabinet Secretaries (CSs) or Sectoral Ministers and their current total number is 21. The CSs and their assistants, the Principal Secretaries (PSs) are appointed by the President. Each ministry has two to five state departments, each relying on hundreds of staff to manage projects and programmes and to oversee parastatals (see the case of the Ministry of Agriculture below). The Judiciary is headed by the Chief Justice who presides over a system of courts consisting of the Supreme Court, High Court, and Court of Appeal, each of which presided over by judges, and subordinate courts headed by magistrates.

The legislature in Kenya is composed of democratically elected members in a bicameral model of two houses; the national parliament and the senate. In addition, several members are nominated by the main parties. The total number of MPs is 349 and there are 67 senators. Each of the houses is headed by a speaker and has administrative staff.

The 47 counties that make up the county governments are headed by 47 governors and 47 deputy governors. The County Executive Committee Members, CECM (Ministers), are appointed by the governor and number 10–14 depending on the county, whereby they are not supposed to exceed one third of Members of County Assemblies (MCAs). In total there are about 500 CECMs (Ministers) in the 47 counties and each CECM has several staff to manage its ministry. The number of MCAs in each county is dependent on the number of wards in the county, ranging from ten wards in Lamu and Isiolo to 85 wards in Nairobi,[191] and includes other nominated members from special interest

[191] CRA. 2015. Summary Of County Governments Budget Ceilings on Recurrent Expenditure 2015/2016 (KSHs. Millions).

groups (e.g. women and people with special needs). In August 2017, after the general elections, the Independent Elections and Boundaries Commission (IEBC) published a list of 1 450 MCAs.[192]

The huge number of elected members at the national and county levels, together with the executive and administrative staff at both levels, has resulted in a very big government. Budgetary allocations for recurrent expenditures are considerable,[193] leaving very little for investment. According to the 2015 Capacity Assessment and Rationalisation of the Public Service Programme (CARPS) audit report, the number of public servants registered at both levels of government is 199 921. Of this figure, 72 923 (36 percent) are in the national government while 126 998 (64 percent) are in county governments. County chiefs have been accused of hiring more staff without following the documented procedures. The report recommended that 39 000 workers be retired from the civil service. The Chair of Council of Governors (COG) recently observed that bloated workforce was financially draining counties, leaving them with little funds for development.[194]

There is a clamour for a change of constitution aimed mainly at curtailing this costly situation. The Thirdway Alliance Kenya is calling for a comprehensive constitutional referendum (dubbed Punguza Mizigo) with several objectives such as: (i) reduce cost of running parliament from current KSH36.8 billion to KSH5 billion per year; (ii) address over-representation and reduce number of MPs from the current 416 to 147, (iii) end historical gender inequality and ensure that Kenyans elect one man and one woman from each of the 47 counties into the National Assembly; (iv) increase counties' revenue share to 35 percent from the current 15 percent; (v) introduce a one 7-year term presidency to end violence, ethnic and political tensions associated with re-election; (vi) stop the wastage of public funds and cap salaries of elected leaders; and (vii) impose a life sentence for culprits convicted of corruption and theft of public funds.[195] The Building Bridges Initiative (BBI) called for doing away with the tendency of politicians to reward cronies and family with employment and reduce the wage bill. The proposals are aimed at addressing the governance challenges facing the country.

6.1.2 THE CASE OF THE MINISTRY OF AGRICULTURE, LIVESTOCK, FISHERIES AND COOPERATIVE

Pursuant to Executive Order No. 1 of June 2018, the Ministry of Agricuture, Livestock, Fisheries and Cooperative is headed by a Cabinet Secretary and has a Chief Administrative Secretary. The latest structure of the ministry comprises five State Departments: (i) Crops Development, (ii) Livestock Development, (iii) Fisheries Aquaculture and Blue Economy, (iv) Agricultural Research, and (v) Irrigation. Each State Department is headed by a Principal Secretary and undertakes specialized functions, manages several projects and programmes, and oversees a number of parastatals.

The State Department of Crops Development is comprised of three directorates (Agricultural Engineering; Crops Resources, Agribusiness and Marketing Development; and Agricultural Policy Research and Regulations) and oversees 17 parastatals[196]. The Department manages a total of 15

See: https://www.crakenya.org/wp-content/uploads/2015/05/Summary-Budget-Ceiling-FY-2015-16.pdf

[192] IEBC. 2017. The Post Election Evaluation Report. See: https://www.iebc.or.ke/uploads/resources/V9UUoGqVBK.pdf

[193] Business Daily. 2019. Counties first half wage bill hits Sh80bn on hiring spree. 31 March. See: https://www.businessdailyafrica.com/economy/Counties-first-half-wage-bill-hits-Sh80bn/3946234-5050000-14l1fk1/

[194] Standard Digital. 2019. Governors struggle to pay bloated workforce. 4 March. See: **https://www.standardmedia.co.ke/article/2001315133/governors-struggle-to-pay-bloated-workforce**

[195] The Punguza Mizigo (Constitution of Kenya Amendment) Bill. 2019. https://thirdwayalliance.com/download/PUNGUZA_MIZIGO_Amendment_Bill_2019_A.pdf

[196] Agriculture and Food Authority (AFA); Kenya Plant Health Inspectorate Service (KEPHIS); Kenya Farmers Association (KFA); Miwani Sugar Factory; Muhoroni Sugar Factory; National Cereals and Produce Board (NCPB); Kenya Seed Company;

projects and programmes[197] and one training institute (Kenya School of Agriculture). The State Department of Livestock Development has three directorates (Veterinary Services; Livestock Production; and Livestock Policy Research and Regulations) and oversees seven parastatals.[198] Five projects and programmes[199] and three training institutes (AHITI Kabete; AHITI Ndomba; and AHITI Nyahururu: Meat Training Institute, Athi River) fall under the jurisdiction of the State Department of Livestock.

The State Department of Fisheries, Aquaculture and the Blue Economy has three directorates (Fisheries Resources Management and Market Development, Aquaculture Development and Fisheries Policy Research and Regulations) and three parastatals.[200] The State Department of Irrigation, which was brought to the Ministry of Agriculture from the Ministry of Water in 2018, has four directorates (Irrigation and Drainage; Irrigation Water Management; Irrigation Water Harvesting; and Storage and Land Reclamation), one state corporation (National Irrigation Board (NIB)), and seven parastatals[201]to undertake national irrigation policy and management of irrigation schemes. The State Department of Irrigation was moved back to the Ministry of Water in August 2014, after only about a year with the Ministry of Agriculture.

The State Department of Agriculture Research has three proposed directorates (Research and Innovation Management; Agricultural Research Policy and Linkages; and Knowledge Management, Technology Transfer and Capacity Building) and four parastatals[202] to undertake functions such as crop research and development, agricultural seed research and development, livestock research and development, tsetse fly and trypanosomiasis research and control, crop genetic research, animal genetic research and biosafety management.

The role of the ministry, according to the 2010 constitution, is largely limited to the formulation of policies, design and implementation of standards and regulatory functions, undertaking of research and information services, and provision of capacity development support to counties. However, the large number of directorates (15), parastatals (38) and numerous projects and programmes suggest that the ministry is involved in activities that extend beyond its mandate, including projects that

Bukura Agricultural College; Agricultural Information Resource Centre (AIRC); Pest Control Products Board; Mumias Sugar Company; South Nyanza Sugar Company; Chemelil Sugar Company; Nzoia Sugar Company; Agro-Chemical and Food Company; Agricultural Development Corporation (ADC); Nyayo Tea Zones Development Corporation and the Commodities Fund.

[197] National Rice Development Programme; Smallholder Development Programme; Drought Resilience & Sustainable Livelihood development Programme; Smallholder Horticulture Marketing Programme; Small Horticulture Empowerment & Promotion Unit Project; Kenya Rural Development Project; Smallholder Irrigation Development & Management in Semi-Arid Lands; Smallholder Irrigation Programme in Mount Kenya; Traditional High value Crops Programme; E-Extension project; Youth in Modern Agriculture Project; Urban & Peri-urban Agricultural project; National Accelerated Agricultural Input Access Programme; Adaptation to Climate Change and Insurance; Agricultural Sector Development support Programme and Private Sector Development in Agriculture.

[198] Livestock Policy Management; Development of Livestock Industry; Livestock Marketing; Range Development and Management; Veterinary Policy; Veterinary services and Disease control; Livestock Branding; Promotion of Bee Keeping Industry; Promotion of Tannery Industry; Promotion of Dairy Industry and Livestock insurance policy.

[199] Smallholder Dairy Commercialization Project; Mainstreaming Sustainable Land Management in Agro pastoral Production Systems of Kenya; Regional Pastoral Livelihood Resilience Programme; Disease Free Zones (DFZ) and Standards and Market Access Programme (SMAP)

[200] Kenya Fisheries Service (KeFS); Kenya Fish Marketing Authority (KFMA); Fish Levy Trust Fund and Kenya Marine and Fisheries Research Institute (KEMFRI)

[201] Mwea Irrigation Development Project (Thiba Dam Irrigation Area); Thwake Multipurpose dam project; Small Holder Irrigation Programme; National Expanded Irrigation Programme; Bura Irrigation Scheme; Galana Kulalu Irrigation Development Project (Food Security Project); Lower Nzoia irrigation Project phase 1; Water harvesting for Household Irrigation and Supply of one acre Drip kits for schools countrywide

[202] Kenya Agricultural and Livestock Research Organization (KALRO); Kenya Animal Genetics Resource Centre (KAGRC); Kenya Tsetse and Trypanosomiasis Eradication Council; and the National Bio-Safety Authority.

should be devolved to counties (e.g. the Traditional High Value Crops Programme; E-Extension Project; Youth in Modern Agriculture Project; Urban and Peri-Urban Agricultural Project; National Accelerated Agricultural Input Access Programme etc.).

The current organizational structure of the ministry is similar to the period when many state departments were ministries in their own right. Each state department has its own administration support services comprising accounts, administration, central planning, finance, human resource management, ICT and supply chain management. Each department has a Head of Finance who reports directly to the Ministry of Finance as opposed to a ministry-wide coordinating body (e.g. Chief Administrative Secretariat) within the Ministry of Agriculture. As such, there is very little interdepartmental alignment since each department is operating independently with no common operational synergy (see below the case of policy and planning). Fragmentation along sub-sector-specific tasks with overlapping mandates has resulted in bloated wage bills while spreading human and financial resources too thinly across the five state departments at the same time.

The ministry has capacity and resource gaps in formulating effective policies, strategies, standards and regulations. It has not been able to provide technical assistance in cascading national policies, strategies and regulations to the county governments as stipulated in the constitution. There are critical capacity gaps at individual (e.g. inadequate knowledge and skills) and institutional (e.g. lack of harmonized training curricula) levels that hold the sector back. Another major gap is lack of a functional central agricultural data and information repository linking national and county governments.[203] At the same time, resources of the ministry are wasted due to overlaps in the activities of some of the parastatals. For instance, the Agricultural Development Corporation (ADC), the Kenya Seed Company (with government majority share) and the Kenya Agricultural and Livestock Research Organization (KARLO) all produce and sell seeds[204], competing with ten private seed companies.[205] As already indicated, six sugar parastatals (all under the State Department of Crops) have done more harm than good to the sugar industry in Kenya due to mismanagement, huge debts and corruption.[206] Kenya's plan to sell 26 state-owned corporations, including five sugar millers, the Kenya Meat Commission and the New Kenya Cooperative Creameries, to private investors has failed to materialize. The delayed sale of these parastatals has led to increased mismanagement, poor corporate governance and embezzlement of funds.[207]

Apart from diverting resources away from more productive development activities, the parastatals, as well as the projects and programmes managed by the ministry, are sources of conflict between national and county governments. County governments believe that some of the parastatals, projects, and programmes are operating in areas that should be exclusively under county

[203] MoALFC. 2019. Capacity Building Strategy tor Agriculture Sector. November. See: http://www.kilimo.go.ke/wp-content/uploads/2018/04/Capacity-Bulding-Strategy-30th-November-2017.pdf

[204]ZEF. 2018. You Can't Grow Alone - Prioritized Sustainable Seed System Development Options for Stable Food Crops In Sub-Saharan Africa: Cases Of Kenya And Mali. February. See: https://www.researchgate.net/profile/Anja_Christinck/project/Collaborative-research-and-multi-stakeholder-approaches-in-food-and-farming-systems/attachment/5a8ee2ca4cde266d588ced2b/AS:596858695065600@1519313610454/download/PARI_Project+report_Seed+systems_Kenya_Mali.pdf?context=projectUpdateDetail

[205] Royal, Amiran Kenya, Syngenta, Monsanto, Greenlife, Griffaton, East Africa Ltd., Freshco Seeds, Premier Seeds, Simlaw Seeds

[207] The EastAfrica. 2018. Kenya's planned sale of state-owned firms runs into trouble. 11 April. See: https://www.theeastafrican.co.ke/business/Kenya-sale-of-stateowned-firms-runs-into-trouble/2560-4388158-noqrfu/index.html

purview.[208] There has been a call for consolidation of the parastatals, but nothing has changed thus far.[209]

6.2 Planning frameworks and approaches

Planning for effective implementation of policies is well anchored in the public sector with the Ministry of Finance and Planning taking the lead role nationally and respective county finance and planning departments playing a similar role for counties. The sectors at the national level have their planning instruments that they use to ensure sector policies/strategies are implemented to contribute to the realization of the national vision. These are: Vision 2030 Medium-Term Plans (MTP), Medium-Term Investment Plans (MTIP), and Medium-Term Expenditure Frameworks (MTEF); strategic implementation plans; programmes and projects; and Annual Work Plans (AWPs).

Vision 2030 is implemented through Medium Term Plans. So far three medium term plans have been developed; MTP I (2008–2012) MTP II (2013–2017) and currently MTP III (2018–2022). Each sector is then expected to develop its own Medium-Term Investment Plans (MTIP) based on the Vision 2030 MTP documents. In 2010, an Agriculture Sector Medium Term Investment plan (MTIP I 2010–2015) was developed to operationalize the Agriculture Sector Development Strategy (ASDS, 2010–2020). However, due to changes in institutional arrangements brought about by the new constitution and the need to mitigate the risks of capacity gaps associated with devolution, a revised agricultural investment plan (MTIP II 2013–2017) was prepared. The Agricultural MTIP II recognized the roles and responsibilities of the two levels of government where counties were seen to be the main implementers of policies formulated at central level.

From a food and nutrition security and sustainable agriculture perspective, delivering on MTP II's goals (e.g. ending extreme poverty and hunger) was not easy. The actual budget allocated was not in line with the investment areas stipulated under the Agricultural MTIP II. The funds available were nowhere near adequate. A large part of the national sector budget was invested in large-scale irrigation projects that were not targeted at smallholder farmers but at semi-autonomous government agencies (SAGAs) The budget from development partners was static and did not result in additional programmes.

Another weakness of the plan was its inadequacy in breaking down the proposed investments to the respective county levels. The counties had to make their own investment plans, implying that the Agricultural MTIP II did not influence county government plans even though agriculture is one of the sectors whose services are most devolved. The failure of most county governments to align their first CIDPs to ASDS and MTIPs disincentivized stakeholders to develop another Agricultural MTIP.

In 2018, the Medium-Term Plan, MTP III (2018–2022) and the Medium-Term Expenditure Framework (MTEF) were launched. The MTP III lists a total of 20 flagship projects and programmes under crops and livestock and another 14 flagship projects and programmes under the Blue Economy (fisheries). The projects under crops and livestock include some new flagships such as the Agricultural Mechanization Programme, the Youth and Women Empowerment in Modern Agriculture Programme, the Crop Diversification Programme, and Large Scale Production.[210] The

[208] Intergovernmental Relations Technical Committee. 2017. Emerging Issues On Transfer Of Functions To National And County Governments. See: https://igrtc.go.ke/download/3011-final-report-function-transfer-emerging-issues/
[209] Nairobi Business Monthly. 2018. Will merging of government financial agencies deliver desired results? 8 March. See: http://www.nairobibusinessmonthly.com/will-merging-of-government-financial-agencies-deliver-desired-results/
[210] Republic of Kenya. 2018. Medium Term Plan 2018 – 2022. See: http://planning.go.ke/wp-

MTEF, on the other hand, identifies 12 major programmes under crops and livestock and 11 programmes under the Blue Economy, each linked to existing projects, programmes and parastatals, named as delivery units.[211] According to the guidelines for the preparation of the MTEF 2019/20–2021/22, the government directed that no new projects should be started without the approval of the national treasury. The guidelines also state the government is pursuing a fiscal consolidation policy aimed at reducing the overall fiscal deficit and debt accumulation with a target of reducing the overall expenditure and net lending from 26.3 percent in FY2018/2019 to an average of 23.2 percent in the medium term.[212] The alignment between MTP III and MTEF 2018/2019 and 2020/2021 with respect to agriculture is clearly inadequate (see Annex II).

As shown in section 4.1.1, the ministry has prepared the ASTGS that is anchored to the realization of 100 percent food security as stipulated under the Big Four Agenda and a vibrant, commercial, modern and equitable agricultural sector that sustainably supports economic development. The National Agricultural Investment Plan (NAIP) was drafted to implement the ASTGS and accelerate Kenya's agricultural transformation in the context of devolution and in alignment with the Big Four Agenda, CAADP and SDGs. At the same time, each state department has a policy directorate that develops sub-sector policies and a planning unit that works on plans and strategies. Each policy directorate is mandated to develop policy and legal frameworks pertaining to each state department. Similarly, each of the five planning units is engaged in the development of different sub-sector plans and strategies. For instance, the Planning Unit of Crops is currently busy developing: (i) sector plans for crops 2018–2022; (ii) a Medium Term Plan 2018–2022 and (iii) the State Department for Crops Development Strategic Plan 2018–2022. Similar sector plans, medium term plans and strategic plans for livestock, fisheries, research and irrigation are being developed by the other four planning units. The strategic plan of each state department is used to develop performance contracts for top management (cabinet secretary and principal secretaries) and then cascaded to the relevant directorates and lower level units. From the strategic plans, state department/directorates are also able to develop detailed AWPs and budgets under the leadership of their respective finance heads, together with respective planning directorates.

Four main challenges for the current planning frameworks are: (i) limited alignment and integration among the five state departments; (ii) failure to integrate the process of policy development and planning; (iii) weak link between ASTGS/NAIP and the planning activities of each department; and (iv) limited alignment of the ASTGS/ NAIP to MTEF 2018/2019–2020/2021 and MTP III. By the time the different planning units finalize their work, the ministry will have five sub-sector plans, five medium term plans, and five strategic plans (corresponding to each of the five state departments). The strategic plans will also form different chapters of the consolidated strategic plan at national level.

The process of planning in each state department is headed by a senior economist appointed by the PS State Department of Planning (of the National Treasury and Planning). Since the senior economist also reports to the PS Planning, the Ministry of Agriculture has limited authority to ensure coordination among the five planning units. It appears that the merger of the different

content/uploads/2018/12/THIRD-MEDIUM-TERM-PLAN-2018-2022.pdf

[211] Republic of Kenya. 2018. Medium Term Expenditure Framework 2018/19-2020/21. Agriculture Rural And Urban Development (ARUD) Sector Report. See: http://www.treasury.go.ke/component/jdownloads/send/194-2018/706-agriculture-and-rural-development-sector.html

[212] Republic of Kenya. 2018. Guidelines for the Preparation of Medium Term Budget for the Period 2018/19-2020/21. See: http://www.treasury.go.ke/publications/circulars.html?download=854:circular-no-8-2018-guidelines-for-preparation-of-fy2019-20-2021-22-budget

ministries (to form the Ministry of Agriculture, Livestock, Fisheries and Cooperative) was not accompanied by a merger of the planning activities at the level of the Ministry of Planning/Finance, which heads the planning process in the ministries, including the Ministry of Agriculture. There is no formal mechanism that coordinates the five state departments and produces an integrated plan for the ministry. Aligning the activities of the five planning units to the ASTGS and NAIP is also a challenge due to lack of commitment to ministry-level planning. The ASTGS/ NAIP is spearheaded by a Core Team composed primarily of development partners and a few individuals from the different state departments. The planning units are not part of the core team. Some staff of the ministry associate the ASTGS/ NAIP to the State Department of Crops as the chair of the core team is from crops. Because of confusion over ownership, the ASTGS/NAIP has proposed the Agricultural Transformation Office (ATO) under the cabinet secretary to serve as a delivery unit. It remains to be seen if the ATO can be formally established and win the support of the different state departments.

The ASTGS is also proposing several new flagship projects (six large-scale agroprocessing hubs, three skill development programmes for government leaders, monitoring mechanisms for two key food systems or value chins), which are not reflected in the MTEF or MTP III. A proposal to expand existing projects (e.g. restructure strategic grain reserves to serve four million vulnerable Kenyans) is also missing. Neither the MTP III nor the MTEF refer to the ASTGS/ NAIP. This could be due to the fact that both MTEF and MTP III were officially launched in 2018 while the ASTGS/ NAIP was still in the process of being finalized.

The organizational structure of the Ministry of Agriculture is characterized by a weak link between planning and policy with no functional relationship between the Policy Directorate and the Planning Unit of each State Department. There is a tendency of preparing policies at departmental rather than at ministerial level. For instance, the State Department of Livestock is currently developing a National Livestock Policy. This policy (February 2019 draft) makes no mention of the draft Agriculture Policy or the draft ASTGS.[213] There is also the draft National Irrigation Policy.[214] The State Department of Fisheries and Blue Economy is also working to develop the Fisheries Policy and the Fishery Marketing Policy. It appears that the different state departments are opting for a policy that is specific to their sub-sectors with no discernible link to the draft Agriculture Policy of the Ministry. As discussed in section 4.1.1, the ministry has several drafts or outdated thematic and commodity policies and strategies. Each year, a considerable amount of staff time and financial resources of the ministry is spent on meetings and workshops to revise such policies and strategies, but their approval and finalization takes years and their relevance is questionable. Many counties are also trying to develop their own policies, but often with limited success. As shown in section 7, counties such as Kitui have developed 18 items of legislation but have managed to finalize only two.

The misalignment among the different planning processes (between MTP III and MTEF 2018/2019–2020/2021, between ASTGS/NAIP and MTEF/MTP III, and among plans of the different state departments and the ASTGS/NAIP) demonstrates that the national planning frameworks and budgeting processes for food and nutrition security and sustainable agriculture are a cause for concern. The disconnect in planning and budgeting processes has affected policy implementation at county level and is a major factor behind the challenges of food and nutrition security in Kenya,

[213] MoALFC. State Department of Livestock. 2019. Draft National Livestock Policy. See: http://www.kilimo.go.ke/wp-content/uploads/2019/02/Draft-reviewed-National-Livestock-Policy-February-2019.pdf

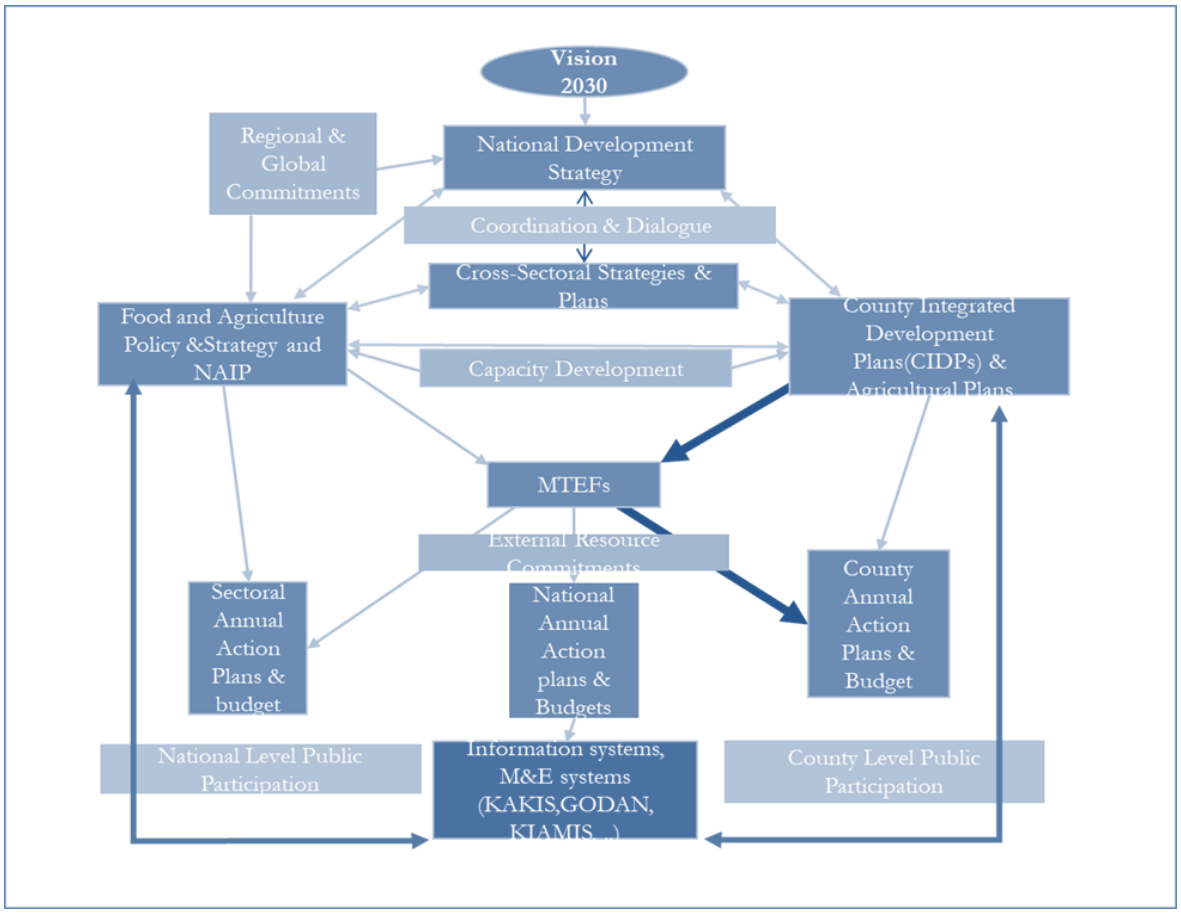
[214] MoALFC. 2015. Draft National Irrigation Policy. See: https://www.coursehero.com/file/23998125/National-Irrigation-Policy-draftpdf/

including the recurrent drought emergencies. A more effective planning and budgeting approach is needed to coordinate and rally different levels of government and sectors around a common set of objectives and priorities that are expected to drive development over the short-, medium- and long-term.

A well-coordinated institutional, policy and planning architecture in Kenya needs to map out the key policy processes, focussing on how coherence between national, sectoral and county level policy formulation, implementation and coordination needs to be ensured (Figure 11). At sectoral level, food and agriculture policy/plan formulation needs to be aligned with national processes, i.e. national strategy/plan, national cross-sectoral strategies/plans. Food and agriculture policies should also be aligned with CIDPs and agriculture sector plans at county level. Data and evaluation results need to provide the information for evidence-based policy decisions and programming.

Implementation of the sector, cross-sectoral and county strategies and plans needs to be anchored to a coordinated budget and programming process of the MTEF and M&E systems. Budgeting and programming should be guided by the principle of securing sufficient budget allocation by the MTEF to CIDPs and County Annual Action Plans and Budget in line with the devolution of the implementation of agricultural policies. Integrated information technologies and data are used to improve monitoring and evaluation and accountability (by operationalizing NIMES and CIMES).

FIGURE 11: LONG-TERM VISION OF THE FNSSA POLICY AND INSTITUTIONAL ARCHITECTURE



Kenya needs to learn from the Rwandan experience, where relevant sectoral/sub-sectoral and cross-sectoral policies/strategies in FNSSA are aligned with each other and with a national strategy.

The overarching sectoral policy, the National Agriculture Policy (first formulated in 2004 and revised in 2017) is implemented through the Strategic Plan for the Transformation of Agriculture in Rwanda – (PSTA) that is currently in Phase IV (PSTA IV, 2018–2024).

The policy and the strategy identify the policy framework for all sub-sectors and commodities by taking into account: (i) the national long-term vision (Vision 2020, now replaced with Vision 2050); (ii) national strategy (Economic Development and Poverty Reduction Strategy, EDPRS 2), recently revised into Rwanda's National Strategy for Transformation, NST 1; (iii) cross-sectoral policies, mainly the National Food and Nutrition Policy (includes well-known interventions of the Ministry of Agriculture, including GIRINKA, the One-Cow-per-Poor-Family Programme, One Cup of Milk per child, school gardens, kitchen garden, and subsidized fertilizer and seeds); (iv) and Decentralization Policy, regional (CAADP) and global (MDG/SDGs) commitments.[215]

Planning and budgeting institutions are formally separate but both are linked to the national budget through the Medium Term Expenditure Framework (MTEF). The Annual Action Plans are prepared by all budget agencies to identify activities to be carried out each year and are finalized and adopted at the end of the fiscal year in order to ensure that they are in line with the MTEF and the national budget as adopted by parliament.[216] The link between local and national priorities is achieved through the five-year District Development Plans, which are updated annually. Coordination with other sectors, civil societies, farmer organizations, private sector, district administrations, development partners and other stakeholders is achieved through the Agriculture Sector Working Group and the Joint Action Development Forum (JADF) at district level. With respect to monitoring and evaluation, each year the districts, and from 2009 onwards the ministries, define a performance contract that outlines the key targets and objectives of the district/ministry. The performance contract is signed by the president of the republic. Performance in implementation of the year that just ended is assessed at a retreat that takes place each year at the beginning of the budget cycle.[217] A strong M&E system has reinforced accountability and created an opportunity for learning and promoting best practices.[218]

6.3 Public participation

Public participation in Kenya is given considerable focus in the Kenyan constitution. Article 1(1-4) of the 2010 constitution states that, all sovereign power belongs to the people of Kenya and shall be exercised only in accordance with the constitution. It also states the role of public participation in realizing transparency, accountability, good governance and promoting service delivery through citizen engagement under Articles 10, 174 and 201. Fourth Schedule Part 2(14) of the constitution states that the functions and powers of the county are to coordinate and ensure the participation of communities in governance. The Public Participation Bill, 2018, gives effect to the constitutional principles of democracy and participation of the people under various articles of the constitution.

Chapter 12 of the constitution is on public finance and begins in Article 201 with guiding principles and a framework for public finance that emphasizes openness, accountability and public

[215] Republic of Rwanda. 2017. National Agriculture Policy. June. See: http://extwprlegs1.fao.org/docs/pdf/rwa174291.pdf
[216] ODI. 2012. Rwanda: Budgeting and Planning Process. See: https://bsi.odi.org/wp-content/uploads/2017/09/Rwandabudgetingandplanning.pdf
[217] Ibid. https://bsi.odi.org/wp-content/uploads/2017/09/Rwandabudgetingandplanning.pdf
[218] AGRA. 2018. Africa Agriculture Status Report 2018. See: https://agra.org/wp-content/uploads/2018/10/AASR-2018.pdf

participation. The Public Finance Management Act, 2012, ensures public participation in the budget process as part of the effort to provide for the effective management of public finances by national and county governments.

Article 35 of the constitution states that every citizen has the right of access to information held by the state. The state shall publish and publicize any important information affecting the nation. The constitution allows Kenyans to know about their development rights and projects from which they are supposed to be benefiting.

Despite this progress in providing the requisite legislative and enabling environment, public participation in realizing transparency, accountability and good governance remains weak in Kenya. At the national level, there are challenges to transparency and public participation. Information is not being published, websites are not updated on a regular basis and key documents are not uploaded on to official websites. The period after the 2010 constitutional referendum has witnessed a decline in the role of civil society largely due to internal wrangles fuelled by ethnicity, manipulation by the political elite and political patronage among civil society members.[219] In some cases, local authorities and leadership perceive CSOs as a source of threat and treat them with suspicion.[220]

Public meetings are convened at short notice and decisions are made too quickly. There are challenges of negative attitude towards public participation and lack of political will to support public participation.[221] As a result, civilian oversight cannot contribute towards improving service delivery by public agencies and fighting corruption.[222] A recent study confirms that there are pervasive and consistent violations of procurement laws, leading to financial losses that altogether add up to billions of shillings. It shows that most violations occur during the post-award stages, compared to the pre-tendering and tendering processes, which are more exposed to transparency than the post-award phase. The violations include price variations, false accounting, and cost migration between contracts. Kenya may consider adopting the Slovakian model where a government contract is not legal until it is published.[223]

The much-lauded development paradigm embracing public participation and public private partnerships (PPP) is not supported with the establishment of specific consultative platforms across all consultative tiers to address the unique needs of food insecurity and poverty. Consultative meetings are called to discuss draft policies and strategies, but the consultations are often informal and involve civil society or private sector groups that have been cherry-picked by the conveners. Additionally, there is no mechanism to ensure that feedback is captured, let alone acted upon. Other problems include lack of political will to ensure transparency and active participation, and lack of awareness and capacity to participate.[224] The recent proposal by the Agricultural Council of

[219] ISS. 2014. Kenya continues to experience human rights abuses, impunity and a lack of transparency and accountability. So why has civil society gone quiet? 21 November. See: https://issafrica.org/iss-today/the-missing-voice-of-kenyas-civil-society

[220] Jane Wamaitha Munene and D. Reckson Thakhathi. 2017. An analysis of capacities of civil society organizations (CSOs) involved in promotion of community participation in governance in Kenya. Wiley Online Library. 12 September. See: https://onlinelibrary.wiley.com/doi/full/10.1002/pa.1668

[221] Geoffrey Ronoh, Leonard Simiyu Mulongo and Alice Kurgat. 2018. International Journal of Economics, Commerce and Management. Vol. VI. Issue 1. January. See: http://ijecm.co.uk/wp-content/uploads/2018/01/6132.pdf

[222] Transparency International Kenya. 2015. An overview of civilian oversight in Kenya. Adili. Issue 153. June/July. https://tikenya.org/wp-content/uploads/2017/06/adili-issue-153-civilian-oversight-in-kenya.pdf

[223] Institute of Economic Affairs. 2018. Public Procurement in Kenya: Analysis of the Auditor General's Reports. See: https://www.ieakenya.or.ke/downloads.php?page=1536006455.pdf

[224] Geoffrey Ronoh, Leonard Simiyu Mulongo and Alice Kurgat. 2018. Op. cit. http://ijecm.co.uk/wp-

Kenya (AgCK) and other partners to establish an independent, all-inclusive institutional/organizational structure/platform to operationalize the agricultural sector public private policy dialogue (PPPD) process at the county and the national level is a welcome move. The proposal was presented and discussed at a conference – Agricultural Policy Effectiveness and Public Private Policy Dialogue in Kenya – that FIRST Kenya organized along with other partners on 15–16 May 2019 at Crowne Plaza, Nairobi.

6.4 Cooperative movements

Cooperatives can help small and family farmers capture a higher share of the value added in the food chain. They have several benefits: (i) creation of bargaining power and economies of scale for their members; (ii) reduction of market risks and transaction costs; (iii) provision of access to productive resources and technical advice to members; (iv) enablement of their members to influence policy-making processes; (v) playing an essential role as aggregators, securing timely supply for downstream private enterprises in the food chain. Agricultural cooperatives offer a wide range of services to their members and other actors in the food chain and at the same time play a key role in achieving food security and contributing to rural development.[225]

By the end of 2017, there were 5 055 agro-based marketing cooperatives in Kenya. These cooperatives were mainly involved in coffee, tea, dairy, pyrethrum, livestock, cereals and cotton production and marketing. In recent years, the performance of the cooperatives has been adversely affected by delayed payment to farmers, poor marketing channels for agricultural produce, including lack of value addition, poor farm input supply systems, limited access to credit facilities and inadequate managerial capacity. As a result, the growth and development of agro-based cooperatives has stagnated in Kenya. There has been total collapse of cooperative unions meant to support primary cooperatives by aggregating goods and services to attain economies of scale.

Cooperative movements in Kenya have fared differently under different policy environments. The post-independence era saw a rapid rise in the number of cooperatives. Cooperatives and parastatals controlled the marketing of agricultural commodities in the 1970s and 1980s. The liberalization of the 1990s brought mergers and splits of cooperative societies. Mismanagement and political influence compounded the problem of cooperatives. A few cooperative societies performed very well while most struggled to provide their members the services and support they are expected provide.[226]

Under the Fourth Schedule of the Kenyan Constitution, cooperative societies are classified as a devolved function. As a result, cooperatives have found themselves operating under the old legal framework, which at times is inconsistent with the provisions of the constitution. The two key cooperative legislations, Co-operative Societies Act (2004) and the SACCO Societies Act (2008), came into effect before the introduction of the devolved system of governance in 2013, thus creating critical gaps in providing guidelines for the development of the cooperative movement.

Over the years, cooperative enterprises, especially those involved in commodities and agricultural produce, have accumulated huge debts, leading to the collapse of some of them. Weak governance is an inherent problem of cooperatives, leading to misuse or abuse of resources. In response to

content/uploads/2018/01/6132.pdf

[225] Giel Ton, Nora Ourabah Haddad, Jos Bijman, Mohamed Sraïri and Patience Mshenga. 2016. Organizational challenges and the institutional environment: a comparative analysis of dairy cooperatives in Kenya and Morocco. FAO UN and Wageningen University & Research. See: http://www.fao.org/3/a-i6672e.pdf

[226] https://pdfs.semanticscholar.org/9f88/f144b0a01cb5f7bcdc75d7038f25fdc19e6c.pdf

these and other problems, the Ministry of Industry, Trade and Cooperatives drafted the Cooperative Development Policy in 2017, but the policy has yet to be enacted.[227] When finalized, the policy is expected to assist cooperatives in developing sound management and accounting models to enhance accountability and formulate a code of conduct for members and management committees that would be legally enforceable.

Despite the various challenges, some cooperative societies have been successful and one such case is the Githunguri Dairy Farmers Cooperative Society, located in Githunguri Town in Kiambu County. It started in 1961with an initial membership of 31 small-scale dairy farmers to collect and market members' milk. Currently, the society has over 22 000 members, of which 19 000 are active. The cooperative controls the whole value chain. It collects milk from farmers, processes, packages, brands and markets with the aim of getting the highest possible returns. The cooperative trades processed milk products under the label FRESHA, and its average daily milk intake stands at 200 000 litres. It has a workforce of 8 000 and turnover was about KSH6 billion in 2013. Githunguri is Kenya's third largest player in the milk market with ten percent of the market share behind Brookside, privately owned, (40 percent) and state-owned New Kenya Cooperative Creameries, KCC (35 percent).[228] It has good management practices and promptly pays farmers higher prices. However, the cooperative complains of poor road infrastructure across linking its collection centres. The costs of electricity and packing technologies are also high, translating into costly processing.[229]

6.5 Monitoring and evaluation and information systems

Monitoring and Evaluation

In countries with effective M&E systems, the institutional framework follows a coordination mechanism put in place to ensure intra-/inter-sectoral, inter-governmental and multi-stakeholder coordination.[230] For instance, in many Latin American countries, members of the national food council provide the necessary data to be processed and disseminated by a secretariat. Adequate resources are allocated to ensure that high quality and up-to-date monitoring data on outcome, output and input are regularly collected and analysed. Such monitoring data are comprehensive and fall into several categories: basic sociodemographic information, food availability, food access, sustainability of production systems, food/nutrition-related outcomes, information indicating participation and the extent to which households have been reached/affected by the project, data on household food insecurity levels and on the dietary quality, data on child and maternal nutritional status, information on women's empowerment (qualitative and quantitative), and early warning information.

In Kenya, the Ministry of Devolution and Planning (MDP) is mandated to implement the National Integrated Monitoring and Evaluation Systems (NIMES) as part of the governance reforms of the national government. NIMES is aimed at strengthening governance by; improving transparency, strengthening accountability relationships, and building a performance culture within the two levels of government (national and county) to support better policymaking, budget decision-making

[227] Ministry of Industry, Trade and Co-Operatives, State Department Of Co-Operatives. 2017. Cooperative Development Policy. June. See: http://www.kuscco.com/index.php/downloads/download/governement-bills-docs/draft-national-cooperative-development-policy

[228] Citizen Digital. 2019. Githunguri Dairy Denies'Fresha' Sale To Brookside. 15 February. See: https://citizentv.co.ke/news/githunguri-dairy-denies-fresha-sale-to-brookside-231645/

[229] Kariuki, J. 2018. Addressing the challenges facing smallholders through cooperatives, FAO/ FIRST, Policy Biref.

[230] FAO Sub-Regional Office for the Latin America and Caribbean. 2017. Governance of food and nutrition security Factors for viability and sustainability Case studies from seven Latin American countries. See: http://www.fao.org/3/a-i7529e.pdf

and management. However, four major problems have weakened the initiative to implement NIMES in Kenya. First, the National M&E Policy, with its proposal for allocating one percent of the country's development budget, was developed in March 2012 but it has yet to be approved. This has affected the status of the Monitoring and Evaluation Department (MED) as an implementing body. The MED as a Department of National Government Ministry does not have a legal mandate to hold the county government to account (as part of NIMES implementation).

Second, since 2004, NIMES has been used to track the performance of the Economic Recovery Strategy 2003–2007 and the MTP 2008–2012, but its implementation is beset by a number of challenges including inadequate resources and capacities for performance tracking, inadequate M&E culture, weak linkages with other reform programmes, and a lack of timely and reliable data. MED is seriously constrained by lack of sufficient technical capacity to support both the national government and the 47 county governments and their devolved units.[231]

Third, the M&E system is not participatory. While a participatory M&E seeks to involve all key stakeholders in the process of developing a framework for measuring results and achievements, traditional M&E involves outside experts to measure performance against pre-set indicators.[232] Since the purpose of a participatory approach is to build stakeholder capacity for analysis and problem-solving, it works better where there is a coordination mechanism comprising all stakeholders. Kenya needs to adopt a participatory approach based on effective inter-sectoral and inter-governmental coordination mechanisms for the counties as well as ministries, departments and agencies (MDAs) to support and implement NIMES.

Finally, agricultural statistics and information systems are weak in Kenya. The three key organizations in the production of agricultural statistics in Kenya are: the KNBS, the Ministry of Agriculture, and county governments that collect data at subnational level. The KNBS, which has representation at county level, is the custodian of official statistics and is responsible for surveys and censuses while administrative data, including budget tracking information, are collected mainly through the national and county Ministry of Agriculture. The existing arrangement for collections and dissemination of agricultural statistics suffers from a number of weaknesses. There is no legal framework for sharing information with the national ministry and production figures supplied by the state departments cannot be reliable. Less than 50 percent of the counties are reported to share their data with the KNBS headquarters. There are no market and price data for crops and livestock at rural, urban and county levels. Lack of consistency in the periodicity of collecting continuous seasonal agricultural surveys is a major challenge.[233]

Information and knowledge management

Reliable data represent a major problem for planning and evaluation purposes or for evidence-based decision-making in Kenya. Because a census of agriculture has not been conducted since the 1960s, the quality of data on agriculture has been in decline. As a result of limited survey programmes and lack of regular sample surveys of yield and production, there has been increased

[231] Bernt Andersson, Rikke Ingrid Jensen, Harriet Naitore and Ian Christoplos. 2014. Final Evaluation of the National Integrated Monitoring and Evaluation System (NIMES) Capacity Development Project (CDP) of Kenya. See:https://www.sida.se/contentassets/b67a95adc6a5401992b6ee74870539ed/6799a58d-8020-4932-9816-f984246a7090.pdf

[232] Leonellha Barreto Dillon. 2019. Participatory Monitoring and Evaluation. Sustainable Sanitation and Water Management. 19 June. https://sswm.info/arctic-wash/module-3-health-risk-assessment/further-resources-participatory-approaches-and-health/participatory-monitoring-and-evaluation

[233] World Bank Group. 2018. Capacity Needs Assessment for Improving Agricultural Statistics in Kenya.

use of desk-based or visual estimation approaches to fill gaps. Farmer groups, village elders, and other local officials often provide an opinion on the total area planted and harvested, which tend to be biased towards overestimation of crop production and can be a serious problem in planning for food security. Non-scientific measures in data collection activities are a cause for concern among data users, leading to data collected by the MoALFC and KNBS not being used for research, policymaking and other decisions.

Currently there is limited collaboration in data collection and sharing. There is no protocol or Memorandum of Understanding (MoU) for data sharing between MoALFC at the national level and county governments. The devolution of authority to the counties has negatively affected the statistical programmes. Data collection activities by counties are planned with no or little input from KNBS and national MoALFC. The MoALFC statistical unit (e.g. livestock) does not have qualified statisticians and county governments do not have established statistical units.[234] Users have also highlighted the fact that there are no forums to facilitate the interaction between the demand side (users) and supply side (producers) of agricultural statistics. An improved and inclusive information management system is needed to facilitate interaction and enhance evidence-based decision-making and improve policy performance.

The Agricultural Information Resource Centre (AIRC), a directorate of MoALFC, with initial support from FIRST Kenya and FarmLink, organized a stakeholder workshop on 4th–5th July 2018 to consolidate initial efforts and frame modalities for creating and establishing a data, information and knowledge management centre, known as the Kenya Agricultural Knowledge and Information System, KAKIS, as one-stop information platform. The workshop was preceded by a review of available knowledge and information systems and identification of state and non-state actors in the area. A secretariat consisting of individuals drawn from the State Departments of Research and Crops Development, AIRC, KIPPRA, Farmer Organizations, Private Sector, Research and Academia, Financial Institutions, AGRA, International Development Partners (including FAO), and the NGOs has been constituted with support of FIRST Kenya and tasked to undertake the early stage development of KAKIS. It was agreed that the secretariat works with the Maarifa Centre (Knowledge Centre[235]) of CoG, and the Agricultural Productivity Programme of the World Bank, which includes support to KALRO to set up an information and communications technology (ICT) platform for sharing research information, advancing research and transfer of technology, and dissemination of information relating to advancements made in agricultural research.[236]

6.6 Coordination mechanisms

Agriculture sector coordination has remained a major challenge for the Ministry of Agriculture. Three attempts have been made to create a clear structure for coordination since 2010. The first was the Agriculture Sector Coordination Unit (ASCU) and it was aligned with the Agricultural Sector Development Strategy (ASDS) that was launched in 2010. The second was the Transformation Initiative (TI) of the Ministry of Agriculture, Livestock, Fisheries and Cooperative (MoALFC) in 2014–2016, and the third was the Joint Agriculture Sector Consultation and Cooperation Mechanism

[234] World Bank. 2019. Capacity Needs Assessment for Improving Agricultural Statistics in Kenya. See: http://documents.worldbank.org/curated/en/801111542740476532/pdf/Capacity-Needs-Assessment-for-Improving-Agricultural-Statistics-in-Kenya.pdf

[235] The Maarifa Centre serves as an important national platform to document and share experiences, innovations and solutions on Kenya's devolution journey.

[236] World Bank. 2019. KENYA Agricultural Productivity Program KAPP I AND II. Report No. 133838. 18 January. See: http://documents.worldbank.org/curated/en/656601553621618378/pdf/Kenya-Agricultural-Productivity-Program-KAPP-I-and-II.pdf

(JASCCM) from 2017. Different structures and instruments of governance, overall coordination, technical coordination, stakeholder inclusion, planning and operational plans were used in each case.

ASCU brought together ten government ministries (Agriculture, Environment, Water, Land, Energy, Livestock, Fisheries, Forestry, Northern Kenya and Arid Lands and Office of the President) that had direct relevance for food security in Kenya. ASCU was discontinued in 2014 because it was not compliant with devolution. Recent restructuring of ministries has resulted in the merger of Agriculture, Livestock, Fisheries and Water (Irrigation) into one ministry, but this has given rise to challenges of intrasectoral coordination (as discussed above). Intersectoral coordination between the ministry and the rest of sector ministries, including the Ministry of Health, whose mandate includes nutrition, is another major problem.

The Intergovernmental Relations Act (2012) establishes the legal and institutional framework for consultation, cooperation and dispute resolution between the national and county governments and among the county governments. This establishes the following intergovernmental relations bodies: National and County Government Coordinating Summit, the Intergovernmental Relations Technical Committee and the Council of County Governors. Within agriculture, the Ministry of Agriculture Intergovernmental Secretariat (IGS) was established but it was not embraced by sector stakeholders and the Council of Governors (CoG), who noted that the counties were not included in its staffing. In 2016, discussions between the leadership in the MOALFC, CoG and Development Partners led to the establishment of an inclusive mechanism, the Joint Agriculture Sector Consultation and Cooperation Mechanism (JASCCM). The mechanism is guided by a Joint Agriculture Sector Steering Committee (JASSCOM). The technical discussions are conducted by Sector Working Groups (SWAGs). There are four SWAGs; (i) Policy, Legislations and Standards (ii) Research, Extension and Capacity Building, (iii) Joint Programmes, Projects and Inputs, and (iv) M&E and Communications.

The joint mechanism has been found to work well in bringing the two levels of government in the agriculture sector together at the national level. However, the system lacks a legal framework to operationalize JASSCOM. Additionally, the biggest challenge of intergovernmental coordination in Kenya is the fact that the ministry has no presence at the county level to provide meaningful support on the ground. The experience of other countries shows that national ministries are directly involved in the activities of local governments. For instance, in the United States' federal system of government, the US Department of Agriculture (USDA) provides leadership on food, agriculture, natural resources, rural development, nutrition, and related issues based on public policy, the best available science, and effective management. The department is made up of 29 agencies and offices with nearly 100 000 employees at more than 4 500 locations across the country (several USDA offices in each state) and abroad.[237] In Kenya, the ministry cannot provide effective leadership in domesticating policies and building capacity when nearly all its staff is based in the capital city.

With respect to food and nutrition security, the institutional framework requires that a number of sectors come together to address the four dimensions of FNS; availability, accessibility, utilization and stability. The proposed National Food and Nutrition Security Council (FNSC) (in the IF/FNSP) is expected to bring together all relevant ministries and stakeholders at the national level as well as the CoG Technical Committees for Health, Agriculture, ASALs and Finance. The council may co-opt an apex body for farmers, consumers and the private sector, among others. At county level, the

[237] USDA. About the U.S. Department of Agriculture. See: https://www.usda.gov/our-agency/about-usda

proposal is to establish the County Food and Nutrition Steering Committees (CFNSC) in the Department of Agriculture, Livestock and Fisheries.

As in many other policy or strategy proposals, there is no indication of how soon the council is going to be approved into law by the senate and the parliament. The Food Security Bill was first introduced in the Senate in 2014 (30 May)[238] and the same bill was reintroduced in 2017 (29 December)[239]. The process seems to have stalled in the senate. On the other hand, the Food and Nutrition Security Pillar of the Big 4 Agenda appears to have opted for a Presidential Delivery Unit, PDU (based on a team of a few journalists and former politicians rather than a broad-based council) with the objective of tracking and reporting on progress of the administration's key projects and programmes as well as coordinating the dissemination of public information on the status of those key projects. Countries that achieve significant progress in FNS create institutional frameworks that often include a high-level body (FNS Councils, Council of Ministers, etc.) in addition to a more technical and operational body.[240]

[238]Kenya Gazette Supplement. 2014. The food Security Bill 2014. See: http://kenyalaw.org/kl/fileadmin/pdfdownloads/bills/2014/TheFoodSecurityBill2014.pdf
[239] Kenya Gazette Supplement. 2017. The food Security Bill 2017. See: http://kenyalaw.org/kl/fileadmin/pdfdownloads/bills/2017/FoodSecurityBill_2017.pdf
[240] FAO Regional Office for Latin America and Caribbean. 2017. Op. cit. http://www.fao.org/3/a-i7529e.pdf

7. Implementation of policies and programmes in the counties

Inadequate policy implementation is as important as weak policy development in explaining the poor performance of the FNSSA sector. The Fourth Schedule of the Constitution describes the division of functions between the national and county governments in Kenya. County functions comprise: (i) agriculture, including crop and animal husbandry, livestock sale yards, county abattoirs (slaughterhouses), plant and animal disease control, and fisheries; (ii) veterinary services (excluding regulation of the profession which is a national government function); (iii) trade development and regulation, including markets, trade licences (excluding regulation of professions), fair trading practices, local tourism, and cooperative societies; and (iv) implementation of specific national government policies on natural resources and environmental conservation, including soil and water conservation, and forestry. These functions, together with eleven other sectoral responsibilities, are managed through a planning process.[241] This section reviews the experience of three counties, Garissa, Kitui and Makueni, visited as case studies as part of the Policy Effectiveness Analysis.

7.1 Implementation frameworks and capacity

Public Finance Management Article 126 provides that every county shall prepare a development plan in accordance with Article 220(2) of the Constitution for approval by the county assembly. The county executive committee member responsible for planning shall submit the development plan before the county assembly by 1 September. The development plan will inform the budget priorities for the coming year. The County Governments Act, 2012 (CGA), obligates a county to develop an integrated plan, designate planning units at all county administrative levels and promote public participation and engagement by non-state actors in the planning process.

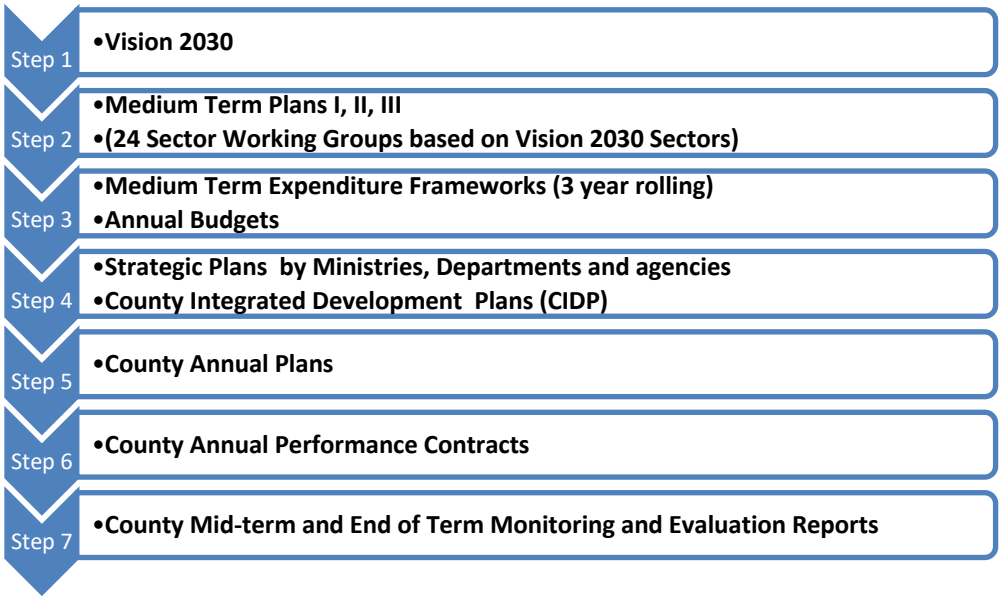
7.1.1 COUNTY LEVEL PLANNING – COUNTY INTEGRATED DEVELOPMENT PLANS (CIDPS)

According to the County Governments Act, the county plans shall consist of the following; the County Integrated Development Plan (CIDP), which is a five-year plan that shall inform the county's annual budget; the County Sectoral Plan (ten year plan); the County Spatial Plan, which is a ten-year plan using a Geographic Information System (GIS) and to be reviewed every five years; and city and municipal plans. These plans provide the basis for all budgeting.

Counties are expected to align their Strategic Plans and CIDPs to Vision 2030 and to the MTPs through a consultative process (Figure 12). Each of the three counties under review has spatial plans, which inform the Annual Development Plans.

[241] County health services; control of air pollution, noise pollution, other public nuisances, and outdoor advertising; cultural activities, public entertainment and public amenities; county transport infrastructure; animal control and welfare, including – licensing of dogs, and facilities for the accommodation, care, and burial of animals; county planning and development, including – statistics, land survey and mapping, boundaries and fencing, housing, and electricity and gas reticulation and energy regulation; education – only pre-primary education (ECD), village polytechnics, home craft centres and childcare facilities; county public works and services, including – stormwater management systems in built-up areas, and water and sanitation services; firefighting services and disaster management; and control of drugs and pornography; ensuring and coordinating the participation of communities and locations in governance. See: https://www.epickenyan.com/role-and-functions-of-county-governments-in-kenya/

FIGURE 12: LINKAGE BETWEEN NATIONAL FRAMEWORKS AND COUNTY PLANS



The Public Finance Management Act provides that no public funds shall be appropriated outside a county's planning framework. The CIDP should contain information on development priorities that inform the annual budget process, particularly the preparation of annual development plans, the annual county fiscal strategy papers, and the annual budget estimates.[242]

The first set of CIDPs (2013–2017) were not well developed or owned by stakeholders in the respective county governments. They were developed merely to facilitate access to finances because the law required it. Most of them acknowledged that agriculture plays an important role in their county's' economic development. The need to incorporate issues of food and nutrition security and sustainable agriculture in the county programmes was clearly documented. Even so, most of these programmes/projects were not evidence-based but rather were political rhetoric tied to local politicians' need to impress voters. Most of these programmes were tied to procurement and distribution of farm machinery and inputs. Evidently, very little was achieved in terms of food and nutrition security and sustainable development.

The 2018–2022 CIDPs are better than the first lot but not across all the 47 counties. Most of the CIDPs adhere to the guidelines given by the Ministry of National Treasury and planning.[243] The guideline provides that the CIDPs should be aligned to SDGs, Vision 2030 and MTPs as well as relevant sector plans. A number of counties have also received technical support from the development partners and the JASSCOM.[244]

[242] International Budget Partnership Kenya. 2018. Kenya: 9 Key Questions About Your County Integrated Development Plan. February. See: https://www.internationalbudget.org/publications/kenya-key-questions-county-integrated-development-plan/

[243] Guidelines for preparation of county integrated development plans, revised, 2017

[244] AHADI_ Fact_Sheet _Jan_2018

7.1.2 THE CASE OF THREE COUNTIES

Garissa CIDP (2018–2023)[245]: the plan acknowledges food security as a fundamental requisite for social and economic transformation. The relevance of food security to the plan is clearly demonstrated by the interventions proposed under the agriculture, livestock and fisheries sectors and in those related to food security such as irrigation and special programmes. Food security appears more than 22 times in the plan, either as a key outcome of the interventions in three sectors of agriculture, livestock and fisheries, irrigation and special programmes or alignment to relevant county, national, regional and global policies. The plan identifies climate change as a challenge to the county's overall development and proposes measures that will create resilience and improve food security and sustainable agriculture.
As an ASAL county, Garissa has prioritized irrigation to tap more water for crop and livestock, which is not only relevant to food security and nutrition security, but also significant for overall development via improved agricultural production. In addition, the county has planned to expand its strategic food reserves to include animal feed.

Notably, the plan lacks basic information regarding the number of people who are chronically food insecure, levels of nutrition, food access and pricing. In some instance, food security is equated to humanitarian support and the means of solving the problem is by providing food rations.

Kitui CIDP (2018-2023)[246]: the overall objective of the plan is transforming Kitui County for inclusive and sustainable growth. The plan is fairly aligned to vision 2030, MTP III, and SDGs. The relevance of food security is fairly captured. Food security appears more than 158 times in the plan, an indication of how the county perceives its importance to the overall development of the county. The plan is envisioned to enhance food and nutrition security through mechanization, smallholder irrigation, agricultural value chains development, post-harvest loss management and provision of farm inputs. Kitui, like Garissa County, is an ASAL county grappling with challenges of chronic food insecurity.

The multiagency approach to food security is recommended in the plan. This approach is meant to harness the resources from all the participating organizations and institutions to implement food security activities. A critical resource towards implementation is capacity and adequate funds.

Makueni CIDP (2018–2023): [247] the plan is anchored to Vision 2030, MTPs, Makueni County vision 2025 and SDGs. Relevance of food security in the plan is manifested in the following proposed actions: increasing agricultural productivity through adoption of appropriate and modern technologies; promoting value addition and agriculture commercialization and improving food security; reducing post-harvest losses; enhancing industrialization (agroprocessing, cottage industries); promoting inclusive participation in economic activities; improving land security and utilization, and enhancing sustainable natural resource management successfully.

The plan is well informed by the county spatial survey reports and the comprehensive and

[245] County Government of Garissa. 2018. Second Garissa County Integrated Development Plan (2018-2022). See: http://www.globalcrrf.org/wp-content/uploads/2018/11/Garissa_CIDP_2018-2022_County-Integrated-Development-Plan.pdf
[246] Country Government of Kitui. 2018. CIDP 2018 – 2023. See: https://www.kitui.go.ke/phocadownload/COUNTY_TREASURY/CGoK_COUNTY_INTEGRATED_DEVELOPMENT_PLAN_(CIDP)2018_2022.pdf
[247] Country Government of Makueni. 2018. CIDP 2018 – 2022. See: https://roggkenya.org/wp-content/uploads/Makueni_CIDP_2018-2022_County-Integrated-Development-Plan-1.pdf

structured stakeholder consultations. A key aspect of implementation is the roles and responsibilities of the different actors and the resources required to deliver on the outputs and outcomes. The plan recognizes the main players for food security and those that are indirectly linked to food security. The activities of each of the players are expected to contribute towards the realization of the policy goals. Makueni's stakeholder consultations are key in designing programmes that respond to citizens needs and in the implementation of other national and global obligations.

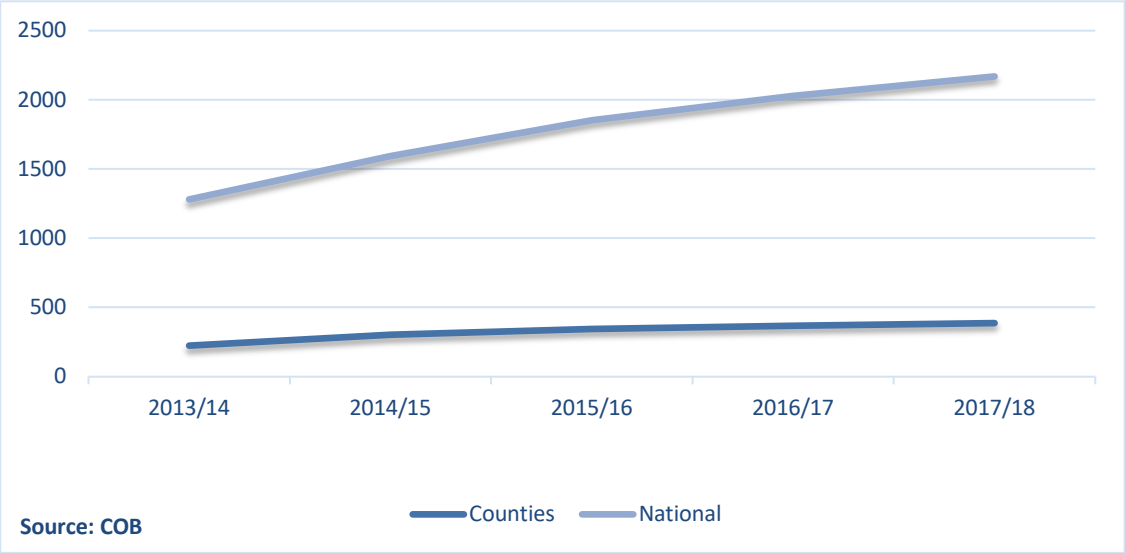
While there is fair alignment of the CIDPs to Vision 2030, MTP III, SDGs and NEPAD/CAADP (in the case of Garissa), there is no evidence to show that the CIDPs are aligned to national ministry priorities. There is no clear link between CIDPs and the ministry policies such as the ASTGS 2018–2028 (draft) or the draft Agriculture Policy. Further, even though the study established that there were food and nutrition security indicators, mainly at activity levels for Makueni, Kitui and Garissa M&E frameworks, there was no evidence that these indicators were informed by the National Food and Nutrition Security Policy or by the Nutrition Action Plan of the Ministry of Health. More importantly, outcome and impact indicators to assess whether an investment is delivering the anticipated benefit to the targeted group are lacking.

The capacity for planning policy implementation by counties is weak. According to the Fourth Schedule of the Constitution of Kenya, the national government is mandated to formulate agricultural policy/strategies and to coordinate capacity building for effective and efficient provision of public services. However, the counties have noted that there was no capacity building support forthcoming from the national government. Perhaps one of the weakest links to policy development and domestication is the feeling that the counties are autonomous and independent. The staff capacity at the national government remains underutilized and inaccessible by the counties. There are no guidelines on how this capacity can benefit the counties.

7.2 Resource allocation to agriculture

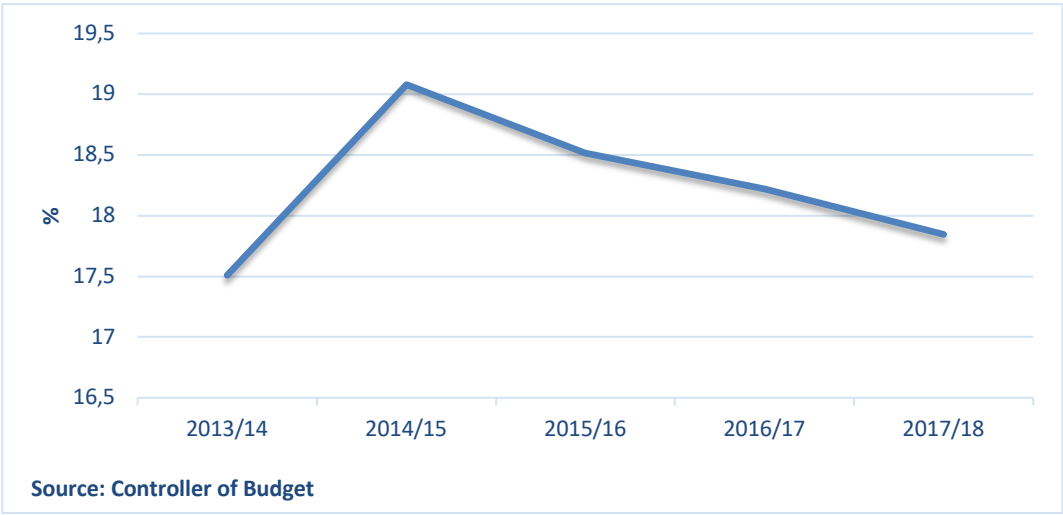
The constitution requires that a minimum of 15 percent of the national revenue be allocated to county governments. Key concerns at the county level include whether the agricultural sector has been given prominence by the counties and the implications of allocations on implementation of activities in the sector, and the continuity of on-going programmes by state departments. The counties receive transfers from the national government in addition to the local revenue raised through several levies. The national government transfers included equitable share and conditional grants. A closer analysis shows that over the years, the annual total allocations to counties have been increasing but at a slower rate than the growth of the national revenue, as shown in Figure 13.

FIGURE 13: GROWTH OF NATIONAL REVENUE VERSES ANNUAL TOTAL ALLOCATIONS TO COUNTIES (BILLION SHILLINGS)



Although the total revenue allocation to the counties exceeds 15 percent (constitutional requirement), the proportion has declined from 19.1 percent in 2014/2015 to 17.8 percent in 2017/2018, almost the same level as 2013/2014 when devolution was first introduced (Figure 14).

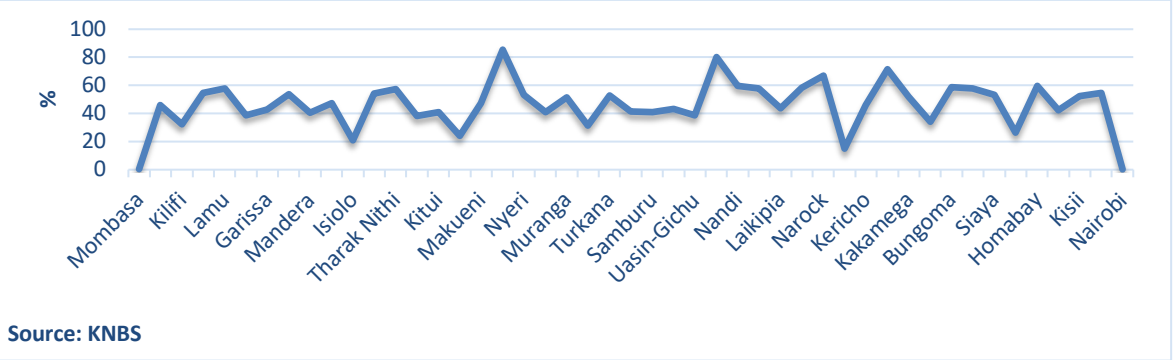
FIGURE 14: SHARE OF COUNTIES IN THE NATIONAL REVENUE (PERCENTAGE)



Agriculture remains the main economic activity in the counties (Figure 15). Agriculture contributes over 25 percent of the counties' Gross County Product (GCP) in 42 out of the 47 counties in the country, but budget allocations to agriculture are very low. In Nyandarua County, for example, 85 percent of the county GCP comes from agriculture, surprisingly the county allocated a meagre one percent on average to its agriculture sector from 2013–2017.[248] In counties with major towns and cities such as Nairobi and Mombasa, allocations to agriculture are understandably low.

[248] Nyandarua County CIDP 2018–2021

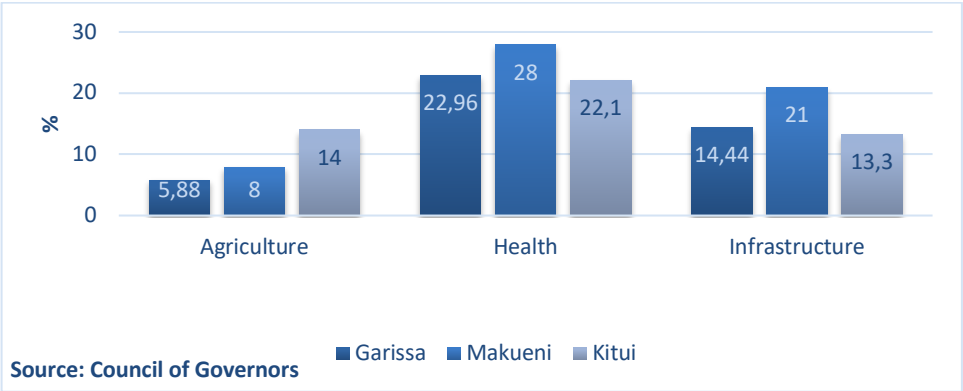
FIGURE 15: CONTRIBUTION OF AGRICULTURE TO THE COUNTIES GDP (PERCENTAGE OF OVERALL COUNTY'S GDP)



Source: KNBS

Makueni, Garissa and Kitui, allocated an average of 14 percent, 8 percent and 5.8 percent to their respective agriculture sectors (Figure 16). Infrastructure and health sectors on the other hand received a much higher share. Of the three counties, Makueni County spent the highest proportion (21 percent) of its resources on infrastructure.[249] While it is justifiable to invest in key infrastructure and provide much needed public goods, a major concern is that the sectors such as agriculture, the dominant source of livelihood for the majority of the population, remain underfunded by the counties.

FIGURE 16: BUDGET ALLOCATION FOR KEY SECTORS (PERCENTAGE OF THE TOTAL COUNTY BUDGET)



Source: Council of Governors

A report by the Controller of Budget (COB) indicates that most counties allocated their budgets to recurrent expenditures and hardly any for development. It is evident that the big government resulting from the implementation of devolution has resulted in very high recurrent expenditures that continue to rise at the expense of the development budget. Evidence also shows substantial budget being directed to recurrent related operations, including procurement of vehicles, computers, office accommodation and furniture. The report further reveals that members of the county assemblies and county staff have been benefiting from huge allowances and foreign trips. Out of the 47 counties, only Narok County spent a satisfactory amount of money on development.[250]

[249] Kitui CIDP, 2018-2023, Makueni CIDP, 2018–2023

[250] Citizen Digital. 2019. How counties failed to allocate funds for development. 20 January.

7.3 Organizational and human capacity

Organizational capacity is the ability of an organization to fulfil its mission through a blend of sound management practices, strong governance, and a persistent rededication to assessing and achieving results.[251] The right capacity is necessary in achieving the mandate of ensuring food and nutritional security. In this regard, it is necessary to critically assess organizational and human capacity.

The organizational structure of the agriculture sector is not harmonized: each county has a preferred structure depending on its unique needs, aspirations and emphasis. In addition, the existing institutions are inadequately equipped in terms of human, physical, financial and other facilities to address the capacity-building efforts of the sector. For instance, lack of a dedicated policy domestication office in Makueni and Garissa leads to a situation where the responsibility for policy guidance is thinly spread among the many technical officers. Ideally, the responsibility, authority and accountability for very important functions in an organization should be well defined and allocated. Planning and policy articulation are the foundation for proper implementation structures, and hence the function needs to be given proper emphasis in the counties, rather than being executed on an ad hoc basis when a pressing need arises.

With respect to human capacity, the counties have considerable gaps in undertaking food and agriculture related activities. For instance, shortage of extension staff in Kitui, Makueni and Garissa is reported to be as high as 31 percent, 40 percent and 66 percent, respectively. Counties are operating with extension staff that were under the previous government structure with few new employments. The study found that there is no clear succession strategy/policy in place across all sectors in the counties. Most extension service staff have not been exposed to post-basic training or upgrading skills over time. The frontline extension staff that interacts with farmers on almost a daily basis has often been left out in capacity building programmes, unlike their counterparts at management level. These frontline staff should be well versed with constantly sharpened/updated working knowledge, attitudes and skills so as to be effective in bringing the right impact at the grassroots level, in the context of a rapidly changing socio-economic and technological environment.

Another important issue is how staff deployments are managed. Current best practice demands the application of performance contract agreements. However, in the Kenyan context, performance contracts have been received with mixed reactions by counties, thereby limiting successful implementation. In many counties, including Kitui and Makueni, a performance contract agreement was keenly pursued, however political interference has since slowed and halted adherence.

Agriculture Training Centres (ATCs), as instruments of capacity building, date back to the 1950s. These institutions were established with the sole mandate of disseminating information and knowledge to farmers, assisting farmers and other stakeholders in accessing farm inputs, facilitating the use of information and communication technologies, promoting public–private partnerships, and promoting climate change mitigation activities.[252] To carry out these functions, they needed to be equipped with adequate staff with updated information on current trends, necessary fixed and

See:https://citizentv.co.ke/news/how-counties-failed-to-allocate-funds-for-development-227704/

[251] Assessing organizational capacity: the why and how-Nichola Wagner Rundell and Brandon Stanford, Office of Adolescent Health, 2015

[252] *Ibid.*

movable infrastructure, as well as proper management skills. The ATCs were required to work closely with village polytechnics in providing core basic courses in agriculture.

The ATC experience from Kitui, Makueni and Garissa is rather disappointing. The ATCs in these counties represent one of the weakest links to policy implementation. Low funding, inadequate staff capacity, lack of a currently relevant forward-looking curriculum are among the major constraining factors. In Garissa and Kitui for instance, most of the ATCs are barely operational. They lack a clearly defined curriculum. In Makueni, only six out 46 ATCs are functional but at suboptimal levels. Counties therefore need to develop policies that revive the ATCs with regards to training the youth in new, upcoming technologies in agriculture, both for self-employment and for creating a future, youth-led national drive for improving food and nutritional security.

7.4 Focus on food and nutrition security

The study of the three counties established that nutrition is accorded very low priority in the agriculture sector. Nutrition can be considered as a two-pronged approach. First, production of sufficient food, with adequate nutritional variety and quality/safety standards. Second, provision of health services for those suffering from acute malnutrition. The former approach is the domain of the agriculture sector, while the latter is the mandate of the health sector. In between, there is a grey area, that of food utilization (what to prepare, how to prepare, how to use, to ensure adequate nutrition). It is the connection between growing/providing of food and consuming food, in such an informed and balanced manner as to bring about the right nutrition results for a healthy community/nation. Both agriculture and health should take some share of teaching about food utilization. However, in Makueni and Garissa, the nutrition staff bemoaned the poor response of the agriculture sector to their collaboration attempts. The two counties acknowledged the need for the two sectors to pair strongly on issues of nutrition, but sentiments indicate that the agriculture sector has been the weakest link towards such initiatives, especially at the decision-making level.

Because of the weak placement of nutrition in the county agriculture sector priorities, there has been very little effort to domesticate nutrition policies and strategies such as the National Food and Nutrition Security Policy (NFNSP) 2011 or the National Nutrition Action Plan 2012–2017. None of the CIDPs of the three counties refer to these national policy documents. The 100 percent food and nutrition security by 2022 of the Big Four Agenda is mentioned only in the CIDP of Makueni.

The burden of teaching utilization, under the current arrangements in Kenya, falls mainly on the hospital nutritionists, who are in constant touch with mothers, both at pre-natal and post-natal stages. They also do extension services in the village. However, according to some key informants in Makueni and Garissa, the number of nutritionists in the hospitals is so small, that they are often overwhelmed by daily routine, leaving them with little time, if any, for regular, meaningful extension at village level.

Under the ‘operation ‘mulyo out’ (Makueni) and the ‘Ndengu revolution’ (Kitui), the agricultural sector has made great efforts to increase the production of pulses (cowpeas, pigeon peas, green grams), which do very well in these two counties, and are therefore seen as responding to the poor nutrition status due to their good protein and micronutrient content. Although access to these pulses has greatly improved, only 22 percent of households currently meet the food diversity standards. Peas are associated with negative cultural beliefs, while many find green grams unpalatable, at least in the way they are prepared as a meal by the villagers. At the same time, green grams have become an important cash crop, and many households would rather sell them

for cash. A large proportion of these incomes are directed to urgent cash demands (such as school fees). The households also sell large amounts of the pulses during harvest at low prices, to buy their preferred foodstuffs (maize, rice, bananas, tomatoes and beans) from neighbouring communities (Muranga, Embu, Loitoktok, etc.) at exorbitant prices.

One of the most intriguing nutrition statistics in Kenya pertains to Garissa County. Classified as an ASAL county, Garissa is known to suffer from frequent droughts and food insecurity. In 2018, it was identified as one of counties facing the highest risk of food insecurity.[253] However, according to the KIHBS 2015 data, Garissa had the lowest levels of stunting, 8.3 percent, in the country. It also scored the second lowest stunting rate of 15.6 percent in the previous DHS survey. There is no clear explanation, but the positive outcome of this Somali community may be attributed to one or more of the following factors: (i) strict home child care based on the principle that the child is the future of the Somali community and therefore gets the priority to food; (ii) exclusive breast feeding up to the age of three years as required by the community. Camel milk supplements the child milk requirement; (iii) strong culture of sharing food ensures that even poor households have access to food; and (iv) effective cash transfers from Somali diaspora also helps in improving access to food for most of the households. Many Garissa inhabitants are known to have benefited (in the form of remittances) from links with traders in Eastleigh market in Nairobi, one of East Africa's most vibrant commercial centres, which started as Garissa Lodge.[254] Garissa town is also a large secondary market that hosts animals from both Ethiopian and Somali primary markets, contributing to the income of the county. Expanded cross-border livestock trade has led to a phenomenal growth of Garissa town, hosting livestock from both southern Somalia and south-eastern Ethiopia.[255]

7.5 Legal frameworks

The process of establishing legal regulatory frameworks is long and very slow in the counties. Most legislation is in draft form and not yet finalized, although it continues to be used as a reference for action. In Kitui for instance, since 2014, the county has been struggling to define and finalize up to eighteen items of legislation, but to date only two have reached final stage. All the others are considered to be working papers. In Makueni, the only legislation that is finalized is the Makueni County Fruit Development and Marketing Authority Act. It was fast-tracked because a fruit processing plant needed to be opened, and there was no legal framework for it.

The situation in Garissa is no different. The case studies (of the three counties) found no evidence for any finalized legislation. There are however, plans to fast-track the development of a policy guiding the establishment of a meat processing plant. The idea has been put forward because for a long time Garissa has boasted one of the biggest livestock markets in East and Central Africa, an opportunity that has often been overlooked.

The case studies established that delayed realization of legal regulatory policy outputs is because of inadequate funds and capacity to draft policy documents. The policy consultation processes take a long time at the county assembly and the legal department levels. Moreover, the crosscutting policy formulation and implementation roles between the national and county governments hinder services delivery. Some of the devolved functions are still being carried out by the national

[253] Reliefweb. 2019. Kenya Drought 2014- 2019. https://reliefweb.int/disaster/dr-2014-000131-ken
[254] The Africa Report. 2011. Inside Garissa Lodge, Nairobi's Somali trading hub. 31 January. See: https://www.theafricareport.com/8860/inside-garissa-lodge-nairobis-somali-trading-hub/
[255] Chatham House. 2010. Livestock Trade in the Kenyan, Somali and Ethiopian Borderlands. Briefing Paper. September. https://www.chathamhouse.org/sites/default/files/field/field_document/0910mahmoud.pdf

government through various parastatals.

7.6 Public participation in the counties

The County Government Act (2014) provides for county planning in Part XI. Citizen participation in the county planning processes is mandatory and is facilitated through the provision of clear and unambiguous information on any matter under consideration in the planning process. The Public Finance Management Act, 2012 provides an elaborate public finance framework for both levels of government. For counties, the act provides for the establishment of the County Budget and Economic Forum (CBEF) as one of the structures of consultation on budgetary matters.

The Ministry of Devolution and Planning and Council of Governors have also developed County Public Participation Guidelines, which provide specific content areas or subject matter that require facilitation by the county government for public participation. The guidelines provide for the processes and mechanisms to be used for each subject matter in engaging the public and timelines for public participation in planning and budgeting at the county level.

According to the County Government Act 2012 (87, 92 and 115), county assemblies are mandated to develop laws and regulations to guide effective citizen participation in development planning and performance management within the counties. Public participation is not meant to convey decisions already made by the executive but to generate and confirm decisions. The government therefore becomes an agent of the people implementing decisions emanating from the citizens.

Each of the counties studied acknowledged carrying out public participation exercises in the development of their planning documents. Each noted having guidelines for public participation that allow for inputs from communities all the way down to the village level, but effectiveness varies. Perhaps one of the best practices of public participation is observed in Makueni. The County Public Participation framework has six levels, starting from the village household forum to village cluster forum, ward forum, sub-county forum and county peoples forum. Meetings are held quarterly or annually. A total of 3,488 forums (355 000–360 000 participants) are held in a year. Each level has a development committee composed of 11 members making 55 persons for the five levels. The county people's forum has 660 sub-ward development committee members and 140 county government officers. The civil society and community groups are members of the various forums.

Like Makueni, Kitui has also developed a system that goes all the way to the village level. Each village is represented by five villagers; one village representative each and one ward-level officer. Public participation forums in Kitui are led by the executive and usually take place on certain public holidays. Clearly this leaves room for prior manipulation of identified priorities by government officers. Moreover, time devoted for public participation is not adequate since it is limited to the number of public holidays.

In Garissa, there is an attempt to institutionalize public participation. Micro-project prioritization meetings are held at village and ward levels. There are however no records that show the procedure and results emanating from such a process. Major implementation decisions are based on the governor's manifesto and pronouncements. Garissa County will be investing in water-related projects, as spelled out in the governor's manifestos. Public participation forums are considered to be forums for pronouncement of the decisions from the executive as opposed to forums for debate. Most of the people attending these forums are supportive of the executive's decisions. Although

county governments are required to assist communities to develop the administrative capacity to enhance their exercise of power and participation in governance at the local level, more needs to be done to empower communities in Kenya.

7.7 Accountability, Monitoring and Evaluation

In Kenya, the office of the Controller of Budget exerts accountability on county governments by monitoring the use of county funds and implementation of county budgets. The Controller of Budget monitors the expenditure of public funds both at the national and county level. The County Assembly on the other hand exerts accountability on county executives regarding the implementation of development projects and programmes. Public officers are expected to adhere to certain values and norms as articulated in the Leadership and Integrity Act 2012, and this forms the basis of holding a county government and its public officers accountable.[256] This accountability is fed through an M&E and Information system that is constructed to meet the mutual needs of the county (internal reporting needs) and those of other bodies at vertical and horizontal levels (external reporting to national level, development partners, etc.). A well-managed M&E system is expected to include written reports that contribute to transparency and accountability, allow for lessons to be shared more easily, reveal mistakes, and offer paths for learning and improvements.[257]

Kenyan law provides that each county shall make all due diligence to institute an M&E system modelled on the County Integrated Monitoring and Evaluation System (CIMES) framework. The constitution requires adherence to principles of good governance and transparency in the conduct and management of public programmes. Both the county and national governments should increasingly focus on development results and how they can best be measured as spelt out in the guidelines for the Development of County Integrated Monitoring and Evaluation System.
The guidelines for CIMES were developed in 2016 with the aim of linking CIMES to the National Integrated Monitoring System (NIMES) (see section 6.5). However, the National Monitoring and Evaluation Policy that is supposed to be an operational guide and a legal framework for the coordination and implementation of NIMES and CIMES, is still in draft form. A second attempt at developing a monitoring and evaluation bill is currently underway.

An effective M&E system requires a robust M&E unit with adequate human resources, indicator handbook, appropriate policy framework and an M&E plan for the county.[258] The case studies have established that each county ministry does track its activities. However, M&E is considerably weak. Across the three counties, the agriculture sector did not have specifically outlined vote for M&E, rather it was considered as part of other substantive functions.

Low budgetary allocation to M&E activities has curtailed the establishment of a fully participatory M&E system since effective public participation is costly to conduct (DSA, travel, etc.). In Garissa for instance, there are not funds from the county government set aside for M&E, instead the county government relies on donor funding to carry out its mandatory function. In Makueni, while production data were well and systematically collected as part of regular extension work, there was

[256] Embracing social accountability for effective service delivery at the counties- Steven N. Nduvi, Young Professional-Governance Division, Kenya Institute for Policy Research and Analysis, 25 Sept 2017
[257] Monitoring and Evaluation Framework for Continuing Professional Development 2012 pg3-CPD Unit, University of Namibia
[258] Performance Management Framework for County Governments-Council of governors, Kenya, pg25.

no funding forthcoming for periodic impact surveys.

An attempt to improve capacity for M&E should not only critically investigate developing capacity for evaluation, but also tackle weaknesses in digitization, staffing for M&E, strengthening collaboration with the national government and development partners and civil society for synergy in data/information gathering, and putting in place a working database (with an efficient retrieval system).

7.8 Reporting practices in the counties

Reports are ideally for internal and external consumption. M&E reports present results on each element of the results chain (inputs, activities, outputs and outcomes). This way, citizens can hold their governments to account. The M&E reports are used in two ways: i) to make management decisions, such as resource allocations, or the change of strategy (managing for results); ii) to inform the citizens on the progress the government has made or otherwise (managing for accountability).[259]

The constitution of Kenya and the Public Finance Management Act 2012, require each of Kenya's 47 counties to publish budget information during the formulation, approval, implementation, and audit stages of the budget cycle.[260] This information allows the public to weigh in on county budget priorities, discuss trade-offs with their representatives in county assemblies, and track whether the budget is delivering on what was agreed during consultations between the public, executive, and assembly.

In the counties, the issue of external reporting revolves around four questions:

- Who should be given what information, when, why?
- In what form should be the information sharing?
- Where is the money to meet the costs of information sharing?
- Who is in charge of ensuring internal and external information sharing?

These are questions on policy and strategic protocol for information sharing, more a problem of external than internal reporting. While most of the technical upward reporting is covered under M&E frameworks (NIMES/CIMES), the weakest link emanates from the lack of an adequate enforcement system, especially in the wake of the feeling by county governments that they are on a par with the national government. Since the national government does not report to them, why should they incur costs to report upwards? CIMES is not well established, and so feeding into the NIMES is weak. Also, the expected submission of reports to COG has not been given the necessary emphasis. Most information-sharing with partners takes place in meetings, rather than in the form of formal exchange of reports.

The situation worsens when it comes to the provision of information to the public. Ideally, one would expect that the ministry of agriculture in counties would have a system for either on-line or on-ground dissemination of information to farmers at ward or village level. However, such systems

[259] Council of Governors Kenya. 2017. Performance Management Framework for County Governments. See: https://cog.go.ke/phocadownload/reports/Performance%20Management%20Framework%202017.pdf

[260] International Budget Partnership. 2019. Kenya: How much Budget Information are Counties Publishing Online- 2015 -2019. See: https://www.internationalbudget.org/budget-work-by-country/ibps-work-in-countries/kenya/understanding-county-budgets/tracking-county-budget-information-kenya/

do not exist. Furthermore, farmers cannot force the county governments to provide such a system simply because farmers are not organized and do not speak with one voice. The only exception is possibly Makueni County where communities are well organized.

Counties seem to be improving in terms of public information sharing. A report published by The International Budget Partnerships Kenya (IBPK) regarding sharing crucial documents such as the CIDPs, Annual Development Plans, County Fiscal Strategy papers, Annual Budgets Estimates, Budget implantation Reports among others, indicates that both Makueni and Kitui counties are on the right track, having shared four and five documents on their websites respectively. Garissa County on the other had only one document on its website.

While the counties are improving on sharing budget plans and other documents, they are still lagging in terms of sharing information on how these plans are executed and how resources are spent. It is also important to note that the average citizens in the counties are not competent users of the Internet, and neither are these resources generally available there. For better transparency and governance outlook, complimentary ways need to be devised for sharing information at the grassroots level, in addition to finalizing the National Monitoring and Evaluation Policy and instituting NIMES/CIMES.

8. Political economy challenges and opportunities in FNSSA policy decisions (national and county)

Political economy factors are often the root causes of inadequate allocation of public resources, social and economic power imbalances, poor institutional capacity, gender-based discrimination, poor design of policies, lack of coordination of programmes and a general lack of accountability. Overcoming these barriers and moving towards inclusion, transparency and accountability in government can be difficult as powerful interest groups are likely to resist changes that threaten the status quo. The discussion below examines the political economy challenges of developing a strategy that responds to diverse and ever-changing needs of the population in Kenya.

8.1 Political economy challenges at national level

Government can act as a market actor or as a market enabler in agricultural development. The choice between the two has remained a key thorny political-economy issue in Kenya since the colonial period, during which agricultural commodity markets came under administered pricing systems where marketing boards were established to pay higher prices to producers and enforce quality control, especially for export crops. The boards also invested in processing capacity and agricultural research and extension. Such policies were sustained during the post-colonial period and Kenyan agriculture benefited from the government interventions during the first 20 years of independence. Government supported both the commercial sector and smallholder production. However, Kenya's large state presence in the economy (including agriculture) gradually developed a reputation for corruption and inefficiency in the 1980s and 1990s despite the reform effort.[261]

In March 2004, President Kibaki launched a ten-year Strategy for Revitalising Agriculture (SRA, 2004–2014), the first serious attempt to provide strategic guidance to the development of the sector. The SRA proposed a radical reform of the role of the state within the sector and encouraged private sector-led growth. The strategy observed that the most dynamic sectors, e.g. horticulture, were largely free of state control, whereas state organizations in charge of the other commodities were generally inefficient. SRA's achievements, however, were limited and included the development of a Food Security and Nutrition Policy that was approved in 2011 and a modest agricultural growth rate of 3.1 percent *per annum* for 2003–2007. It failed to bring about the promised reform in public institutions. The radical language of SRA on state reform was not received positively by politicians who saw opportunities in using parastatals to generate rents for specific groups and as sources of political patronage. Support to parastatals was also provided by special interest groups who had been benefiting from rent seeking.[262]

[261] Alex Winter-Nelson and Gem Argwings-Kodhek. 2007. Distortions to Agricultural Incentives in Kenya. World Bank. Agricultural Distortions Working Paper 45. See: http://documents.worldbank.org/curated/en/364821468048840628/pdf/560380NWP0KE0v101PUBLIC10Kenya10708.pdf

[262] Colin Poulton and Karuti Kanyinga. 2013. The Politics of Revitalising Agriculture in Kenya. Future Agriculture. WWorking Paper 059. May. See: https://assets.publishing.service.gov.uk/media/57a08a2440f0b6497400044a/FAC_Working_Paper_059.pdf

In 2010 (four years before SRA was expected to come to an end), the Agricultural Sector Development Strategy (ASDS) 2010–2020, was launched. The team that prepared the ASDS included representatives of the then ten ministries concerned with agriculture and rural development. All ministers signed the new strategy and it was aligned with the country's new national development blueprint, Vision 2030, which was launched in 2008. Unlike the SRA, the ASDS avoided radical language on reforming state institutions but promised to 'Divest from all state corporations handling production, processing and marketing that could be better done by the private sector'[263] and to position the agricultural sector as a key driver in achieving the ten percent annual economic growth rate envisaged under the economic pillar of Vision 2030. Deemed non-compliant with the devolved system of governance, the ASDS became redundant in 2013, only three years after its launch.

The Big Four Agenda (2017) and the ASGTS (2019) do not include institutional reforms, The ASTGS rather proposed the establishment of new parastatals to manage agroprocessing hubs as well as knowledge and skill-building centres. The draft Agriculture Policy promised improving governance and physical infrastructure with no reference to the earlier promise to 'divest from all state corporations … that can be better done by the private sector' as promised in the SRA and ASDS.

Overall, mismanagement of resources and corruption associated with SAGAs or parastatals have not received sufficient attention in Kenya. The state has lost billions of shillings to non-performing loans lent out to these parastatals and government agencies. The majority of the parastatals that owe the treasury billions of shillings are in the agricultural sector and are unable to clear their debts, which stretch back decades.[264]

Widespread corruption is probably the biggest challenge of many parastatals in agriculture.[265] One of the five biggest scandals in 2018 was the NCPB corruption saga that involved top officials who conspired with traders that delivered cheaply imported maize to the NCPB depots while local farmers were being turned down at the depots. There were also collusions with cartels that bought fertilizer from NCPB at subsidized prices only to repackage with foreign materials and later sell them to farmers at hiked prices.[266] The latest biggest scandal involved building two irrigation dams. According to media reports, over KSH21 billion (US$210 million) were paid to a foreign insurance and construction company (CMC di Ravenna) whose officials have never been on the site and feasibility studies and design details have not even been completed.[267] [268] President Uhuru Kenyatta declared corruption 'a national security threat' and urged the Director of Public Prosecution (DPP), the Ethics and Anti-Corruption Commission (EACC), the judiciary, parliament, the private sector and

[263] Ibid.

[264] Standard Digital. 2017. Parastatals put further strain on State coffers with Sh15b unpaid loans. 22 February. See: https://www.standardmedia.co.ke/article/2001230277/parastatals-put-further-strain-on-state-coffers-with-sh15b-unpaid-loans

[265] Standard Digital. 2019. With corrupt parastatals and inept officials, we are doomed. 9 December. See: https://www.standardmedia.co.ke/article/2001305619/with-corrupt-parastatals-and-inept-officials-we-re-doomed

[266] Tuko. 2018. Corruption in Kenya - is there hope for improvement? See: https://www.tuko.co.ke/283552-corruption-kenya-hope-improvement.html#283552

[267] Daily Nation. 2019. Sh21 billion sinks in Kerio phantom dam projects. 26 February. See: https://www.nation.co.ke/news/Sh21bn-sinks-in-Kerio-phantom-dam-projects/1056-4999434-ew66ur/index.html

[268] Business Daily. 2019. Italian firm in Sh21bn dams scandal fails to surrender vehicles in debt row. 21 March. See: https://www.businessdailyafrica.com/economy/Italian-firm-fails-to-surrender-vehicles/3946234-5036418-t4870t/index.html

all Kenyans to 'rally around the path of transformation.' [269]

Finally, Kenya has not been able to establish effective institutions and regulatory frameworks that provide the right market incentives for the private sector and the farming community to adopt new and sustainable technological solutions. The inaction has allowed the private sector to seek rents and work with some politicians for political patronage. Unscrupulous business people are reported to have compromised the vetting committees charged with identifying genuine farmers entitled to subsidized inputs or price support through government institutions such as the NCPB.[270] Well-connected cartels in private and public sectors can get a preview of confidential contract details and decide who gets what contract and at what amount.[271] Kenyan politics have favoured cartels and corruption.[272] [273] Individuals implicated in graft are defended on the grounds of ethnic or political or regional interests and are elected to public offices.[274]

8.2 Political economy factors affecting implementation in the counties

Political economy issues have affected policy implementation in the counties. The initial years of implementation of the devolved system of government was characterized by conflicts between the national and county levels of government. This has been blamed on different interpretation of the constitution regarding the roles and responsibilities of both the national and county governments. This to a large extent hampered the implementation of policies at the county level. It led to many court cases that blocked implementation of many policy objectives. An example is the responsibility in licensing and the role of the Agriculture and Food Authority (AFA). The establishment of a coordination mechanism under the Intergovernmental Relations Act 2012, such as JASSCOM, has helped to ease the tensions and pave the way to productive dialogue.

A problematic parameter at county level is the failure of the legislature to always see things in line with the executive, resulting sometimes in protracted conflicts. In Makueni for example, the first five years of devolution were spent in establishing a working relationship between the legislature and executive. This affected implementation of many projects. At one point there were attempts to dissolve the County Government of Makueni by the executive. However, the intervention by President Uhuru Kenyatta saw the two resolve their differences and reaffirmed their commitment to the development agenda of the county. Makueni is now regarded as the best performing county in the country.

Currently, there is some sense of political impasse in Kitui. The conflict revolves around prioritization of county expenditure based on MCA aspirations *vis-à-vis* the governor's plans as spelled out in her manifesto.[275] This has blocked the passing of development expenditure plans, thereby limiting the implementation of many grassroots programmes, especially in water (the

[269] The Star. 2018. Scandals dogging Uhuru's second term. 26 May. See: https://www.the-star.co.ke/news/2018/05/26/scandals-dogging-uhurus-second-term_c1763898
[270] CGA. 2018. Cartels conning farmers in subsidized fertilizer deals. 12 November. See: http://cga.co.ke/2018/11/12/cartels-conning-farmers-in-subsidised-fertiliser-deals/
[271] Standard Digital. 2018. Tricks State officers, cartels use to loot billions in the name of tenders. 3 August. https://www.standardmedia.co.ke/article/2001290487/revealed-inside-the-dark-world-of-tender-cartels
[272] Colin Poulton and Karuti Kanyinga. 2013. Op. cit. https://assets.publishing.service.gov.uk/media/57a08a2440f0b6497400044a/FAC_Working_Paper_059.pdf

[275]

governor's election promise).

Every governor comes into office with her/his political, economic social vision presaged in manifestos. There is a tendency to elevate the governor's manifesto above other planning considerations. Even long-term development plans like CIDPs have, in some cases, been ignored because they were developed by previous governors. In Kitui for example, the current governor, did away with her predecessor's Vision for Social and Economic Transformation (KVEST 2015–2025). Substantial resources used in developing the document went to waste. In Garissa, on the other hand, the governor adopted the previous governor's vision and aligned it to his agenda on a water programme.

The separation of powers between the executive, judiciary and parliament and the devolution of defined services to county government has provided a conducive environment for policy implementation in Kenya. However, the functioning of the administrative norms of the institutions determines how effectively policies are implemented. The functioning of the administrative norms for FNSSA policy implementation is influenced by decision-makers, objectives of different actors, mechanisms by which decisions are made and constraints leaders face and conflict resolution mechanisms in place. Across the counties, there seems to be a silent strategy that gives priority in flow of funds, first to the governor's flagship projects followed by projects of emergency nature, then those driven by interests of MCAs and lastly those adhering to the planning documents.

Agriculture is not among the first three major recipients of county budgets even though it is the main economic activity driving both the county and national government. The leadership at the political level can be said to be blind to the importance of FNSSA.

The role of politicians is not just to approve budgets but also to give guidance on the programmes and activities that will be undertaken. There is a tendency that politicians make changes to the proposed programmes to suit their preferred interests, which in most cases are not evidence based but what is considered good for the electorates. For instance, 80 percent of KSH20.35 billion (Big 4 Agenda) planned will finance infrastructure and subsidy-related activities such as milk coolers, farm tractors and supply of other farm inputs, including fertilizers, animals and seeds. Most of these infrastructure-related activities on FNSSA at both levels of government are also for rent seeking, where procurement for the infrastructure is usually given to relatives and friends of the politicians. This is one of the reasons that the politicians amend programmes proposed by the executives during every annual work planning exercise. In 2015, the Ethics and Anticorruption Commission (EACC) conducted a major survey covering most of the counties (39/47) and found that corruption in the counties is manifested in bribery, abuse of office, conflict of interest, nepotism and favouritism among other factors.[276]

Currently, on the second and lower levels of executive policy implementation, there is a trend where implementation is tied to direct benefits that accrue to individuals spearheading implementation. The budget is tilted to the amount of allowances to be earned by undertaking FNSSA activities. This explains why many government programmes, not only FNSSA related, have substantial budgets on workshops for government officials instead of more money for training of value chain actors.

[276] Ethics and Anti-corruption Commission. 2015. Corruption and Ethics Survey Report in Devolved Services,2015. https://www.eacc.go.ke/wp-content/uploads/2018/09/Corruption-Ethics-Survey-Devolved-Services2015-1.pdf

Budget revisions are a common practice and have affected implementation at county level. Sometimes, these revisions are informed by political expediency, with major consequences on policy implementation. Over the years, planned budgets have been channelled to non-planned programmes at the expense of planned interventions. Funds planned for FNSSA have been diverted to save nonperforming SAGAs (e.g. state owned and loss-making sugar factories). For example, the government, which owns a 20 percent stake in Mumias sugar factory, had by April 2018 spent over KSH3.5 billion in an attempt to revive the company.[277] Most of such decisions are influenced by the political class and rent seekers.

Most FNSSA programmes rely on procurement of goods and services for implementation. Despite the procurement, rules and regulations, procurement of goods and services is often captured by 'high level cartels' that influence the procurement process, resulting in the supply of poor-quality goods and services.[278] The famous fertilizer scandal, National Youth Service and the maize scandal are good examples.

Public participation that is a constitutional requirement is effectively being practised at the community micro project level where communities have conception and oversight involvement. For larger investment projects and major decisions that require major investment/procurement, it can only be termed as a cosmetic exercise to fulfil the legal requirement.

8.3 Opportunities due to new political economy developments

Recent developments have improved the prospect of reversing the food and nutrition situation in Kenya. President Uhuru Kenyatta, for instance, has declared the Big Four Agenda (ensuring food security, affordable housing, manufacturing and affordable healthcare) as the priority areas that his government would tackle during his second presidential term in response to the needs of Kenyans. The goal of 100 percent food security has created an opportunity to prioritize food and nutrition security and allocate more resources to create a vibrant, commercial and modern agricultural sector that sustainably supports economic development. The challenges, however, are the structural and institutional bottlenecks that require a much longer time to fix and pave the way for achieving food and nutrition security by 2022.

Devolution is another opportunity that has brought some level of resources to the local level, particularly to counties that have been marginalized from national politics for a long time. The promises of devolution as enshrined in the 2010 constitution have given many Kenyans newfound hope and optimism for the future of the country. Devolution has brought to the forefront issues of service delivery, equitable distribution of resources, wider public participation, reduction of socio-economic disparities, national unity and integration, among others. Some country governments have made a difference by building the first ever roads in the most remote areas of some counties, as well as the construction of health clinics and Early Childhood Development Centres (ECDC). The 47 county governments set out to attain these goals but have faced complex challenges, ranging from resource mismanagement and limited revenue allocation to weak governance structure and

[277] Daily Nation. 2018. Little hope for revival of Mumias Sugar after Cash injection. 22 April. See: https://www.nation.co.ke/business/Little-hope-for-revival-of-Mumias-Sugar-after-cash-injection/
[278] Ethics and Anti-corruption Commission. 2015. Op. cit.

pervasive corruption.[279] [280]

Following the 9 March 2018 handshake between the President Uhuru Kenyatta and Opposition Leader Raila Odinga, the Building Bridges Initiative (BBI) advisory task force has been tasked to come up with a raft of recommendations on resolving nine key issues; ethnic antagonism, lack of national ethos, inclusivity, devolution, divisive elections, security, corruption, shared prosperity and responsibility. The task force noted that Kenyans are yearning for inclusivity on a political, economic, social, religious, cultural, age, and gender basis. The BBI report has just been made public and contains far-reaching changes that are consistent with improving the policy environment and governance to address hunger, poverty and unemployment. For instance, the recommendation on shared prosperity reads as:

> WE NEED AN ECONOMIC REVOLUTION, TO BUILD AN ECONOMY THAT CAN PRODUCE THE JOBS WE NEED, URGENTLY. KENYANS SPEAKING IN EVERY CONSULTING SESSION RUN BY THE TASK FORCE, IN EVERY COUNTY, SPOKE OF THEIR PROBLEMS FED BY POVERTY AND JOBLESSNESS OR UNDEREMPLOYMENT. NO COUNTRY HAS PROGRESSED BASED ON SUCH DISPARITIES — INCLUDING CORRUPTION, EXCLUSION, INCREASING POVERTY, HUNGER, UNEMPLOYMENT AND PERSISTENT INEQUALITIES — WHILE LACKING A COMMON NATIONAL CHARACTER. THE SINGLE MOST IMPORTANT MATTER FACING KENYANS WHEN IT COMES TO SHARED PROSPERITY IS GENERATING ENOUGH JOBS AND EMPLOYMENT, PARTICULARLY FOR YOUNG PEOPLE.[281]

The report makes it clear that the public perception of the country is one in which a rigged system rewards cronyism and corruption, as opposed to the productive and hardworking, and this is considered as the greatest risk to Kenya's cohesion and security. Tackling corruption is viewed as the single most important mission for the country. The task force concludes with major and actionable recommendations on freeing Kenya from cartel capture: 'that public officers should not be in business with government; and that wealth declaration forms should be made public, including a written narrative of how wealth above KSH50 million was acquired. It also calls for making Kenya a 100 percent e-services nation by digitizing all government services, processes, payment systems, and record keeping'. The report also recommends that every organ and arm of government be accountable to the people of Kenya.

With respect to devolution, the report recommended to retain the 47 counties and support the voluntary process of counties forming regional economic blocs. Kenyans are strong supporters of devolution and their counties, but they also want better value for money and more money to be used for development, as opposed to high recurrent and administrative costs. Parastatals carrying out county functions should be either wound up or restructured in accordance with the implementation of the already completed parastatal reforms policy. The report also concluded that no double taxation and double regulation at the national and county level should be allowed. Intergovernmental mechanisms should be developed and clarified to ensure that this aim is consistently met. A more transparent and well-structured public participation should be institutionalized, and governors should hold one-day open forums to update citizens on the state of delivery and governance in the counties.[282]

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[279] Asmaa El Messnaoui, Dorcas Omowole, Loyce Mrewa, and. Rhea Fe Silvosa. 2018. A Political Economy Analysis of Devolution in Kenya. University of Notre Dame and Institute of Economic Affairs.
[280] *Ibid.*
[281] BBI. 2019. Op. cit. https://d2s5ggbxczybtf.cloudfront.net/bbireport.pdf
[282] Ibid.

9. Conclusions

Food insecurity and malnutrition levels in Kenya are high and concentrated in marginal areas or groups such as ASAL and women-headed households as well as underfed and uneducated mothers. Kenya is also facing a double burden of malnutrition, with a growing number of overweight and obese children and women, mainly in non-ASAL areas. Micronutrient deficiencies are widespread among children under the age of five years and women. As a result, the cost of the different forms of malnutrition is very high in Kenya. UNICEF has estimated annual productivity losses of approximately KSH128 billion (US$1.28 billion) as a result of malnutrition. A recent USAID study estimated that from 2010 to 2030, undernutrition will cost Kenya approximately US$38.3 billion in GDP due to losses in workforce productivity.

Several factors have contributed to food insecurity and malnutrition problems of Kenya, but the most important contributors are poor performance of agriculture and inadequate attention to marginalized groups and areas. The decline in the production of staples such as maize and growing dependence on food imports have adversely affected both availability and access to food across the country. The livelihoods of many rural households in different parts of the country are seriously weakened by the collapse pyrethrum, coffee, cotton and sugar production. Pastoralists have seen their livestock depleted by recurrent drought and degradation. Failure to address the weather and climate change challenges of the country, especially in ASAL areas, and the slow progress in overcoming gender inequality have compounded the problems in the food and agriculture sector.

Despite the challenges, Kenya is endowed with diverse physical features, giving rise to one of the most diversified agricultural economy in East Africa. There are also emerging opportunities associated with a strong ICT industry, dynamic private sector and strong policy research institutes and think tanks. Recent political economy developments have also improved the prospect of reversing the food and nutrition situation in Kenya. The goal of 100 percent food and nutrition security of the Big Four Agenda and Devolution present a new opportunity to transform agriculture and develop remote and marginal areas. The BBI report contains far-reaching changes that are consistent with improving the policy environment and governance to address hunger, poverty and unemployment.

It is thus possible to end all forms of hunger and malnutrition in Kenya by 2030 through sustainable agriculture that depends on resilient, diversified and competitive small-scale farmers with equitable access to land, technology and markets. Achieving the Big 4 Agenda, SDG 2 and Malabo targets only requires structural transformation of the policy and governance landscape. The theory of change for the structural transformation is anchored on the formulation of an enabling policy and regulatory environment, development of institutional capacity, creation of effective coordination and establishment of good governance. A well-coordinated institutional and policy architecture focuses on ensuring that policies are adequate, relevant and aligned with the principles of evidence-based, forward looking and inclusive approach. In a coordinated system, policy coherence between national, sectoral and county level policy formulation, implementation and coordination is critical. At sectoral level, food and agriculture policy/plan formulation needs to be aligned with national processes, i.e. national strategy/plan, national cross-sectoral strategies/plans. It should also be aligned with CIDPs and agriculture sector plans at county level. Data and evaluation results provide the information for evidence-based policy decision-making and programming.

Implementation of the sector, cross-sectoral and county strategies and plans needs to be anchored to a coordinated budget and programming process of the MTEF and M&E systems. The alignment between CIDPs and county annual actions plans and budgets with the national MTEF needs to be stronger to allow a larger allocation of budget to counties, in line with the devolution of the implementation of agricultural policies. Integrated information technologies and data are used to improve monitoring and evaluation and accountability (by operationalizing NIMES and CIMES).

The whole process of policy formulation, alignment, implementation, coordination and M&E needs to give priority to: (i) building institutional capacity of MoALFC and county governments to ensure coherence and alignment of policies across national, sectoral, cross-sectoral and county levels; (ii) promoting public-private dialogue to advocate for an overarching policy; (iii) institutionalizing public participation to foster good governance and achieve inclusive development; (iv) strengthening coordination structures at all levels, including inter-governmental (JASSCOM) and inter-sectoral coordination (Food and Nutrition Security Council); and (v) establishing agricultural knowledge and information management systems and M&E systems to coordinate and establish one major hub of knowledge and information management system for FNSSA.

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ANNEX I: Determinants of stunting, underweight and wasting (logistic regression) – arid, semi-arid and non-ASAL counties

Dependent variables : Stunting [1=Normal (z-score>-2.0); 0 Stunted)]; Underweight [1= Normal (z-score>=-2.0); 0 Underweight)]; Wasting [1=Normal (z-score>=-2.0); 0 Emaciated)]										
		Stunting			Underweight			Wasting		
	Variables	Arid-Zones	Semi-Arid	Non-ASALs	Arid-Zones	Semi-Arid	Non-ASALs	Arid-Zones	Semi-Arid	Non-ASALs
Child	Age of the Child	0.427**	0.08	0.855***	-0.17	-0.282	-0.132	-0.202	0.481	1.297**
	Sex of the child (1=Male, 0=Female)	-0.173	-0.121	-0.620***	-0.313	-0.549**	-0.33	-0.034	-0.904*	0.101
	Child participated in Community Nutrition Program (1=Yes, 0=No)	-0.625**	-0.213	-0.115	-0.749***	-0.176	-0.283	-0.212	0.654	-0.399
	Child participates in Grown Monitoring Clinic (1=Yes, 0=No)	0.095	0.062	0.875**	0.181	0.488	1.225**	-0.503**	0.415	1.682**
	Child Had Diarrhoea 2 weeks before the date of interview (1=Yes, 0=No)	1.029*	-0.754*	-0.471	0.298	-0.931*	0.732	0.076	0.257	-0.819
Mothers	Mothers Education (Reference-Informal (Duksi & Madrasa)/None)									
	Primary	-0.686*	0.094	0.398	-0.008	0.067	0.488	0.456	-1.514*	-0.363
	Secondary	0.032	0.282	0.373	-0.236	0.867	0.377	-0.187	0.663	(omitted)
	Post-Secondary	-0.997	1.221	0.974	0.447	1.48	(empty)	(empty)	-1.066	(empty)
	Mother's Age	0.134	-0.037	0.077	-0.21	-0.502	-0.223	-1.039***	-0.674	0.421
	Mother's Weight (Thin <18.5 BMI)-Reference category									
	Mother's Weight (18.5 =<BMI<24.99)-Normal	0.14	1.022**	0.01	0.068	1.296***	-0.205	0.185	0.928	0.037
	Mother's Weight (Obese >25.0 BMI)	-0.497	0.818*	0.511	-0.216	2.306***	0.651	1.191**	1.806*	-0.046
Household	Sex of the HH (1=Male, 0=Female)	0.256	-0.622**	-0.159	0.166	-0.760**	0.438	0.009	-1.125**	-0.543
	Produce own food	0.061	0.365***	0.250**	0.232*	0.249**	0.368**	0.161	0.351**	-0.055
	Food Stocks	0.243***	0.085	0.105*	0.044	-0.059	0.046	-0.163***	-0.01	0.126
	Household Size	-0.304	-0.714*	-0.657**	-0.643	0.397	-0.416	-0.038	0.376	0.034
	Food Poverty (0=Food Poor (<1955 for Rural & <2555 for Urban); 1 Non- poor)	0.09	0.014	0.353	0.298	0.684*	-0.27	-0.068	1.295**	0.025
Health Care	No. of Months of Breastfeeding (natural logs)		0.058	0.634***		-0.268	0.413		-0.243	-0.365
	Excl. Breastfeeding (1 if =6 months, 0 Otherwise)		-0.118	-0.193		0.353	-0.481		1.235**	-0.51
	Excl. Breastfeeding_(1 if >6 months, 0 Otherwise)		0.601	-0.402		0.728	-1.234*		-1.310**	0.644
	Excl. Breastfeeding Less (1 if < 6 months, 0= Otherwise)-Reference		(omitted)	(omitted)		(omitted)	(omitted)		(omitted)	(omitted)
	Measles Vaccination (1=Yes, 0=N0)		0.510*	0.088		0.217	1.041		-0.101	0.932
Infrastructure	Improved Water access (1=Improved, 0=Unimproved)	0.367	0.577**	-0.195	0.037	0.383	-0.251	-0.082	0.48	-0.231
	Improved toilets (1=Improved; 0=Unimproved)	0.498	-0.615**	0.035	0.387	-0.421	-0.129	0.631*	-0.182	0.454
	Electricity Connection (1=Yes, 0=No)	1.01	0.5	0.061	-0.34	0.069	0.042	-1.478	-0.184	-0.884
Reported Shocks (1=Yes, 0=No)	Disease & Pests Outbreak	(omitted)	-1.300**	-0.847**	(omitted)	-1.858***	-1.652***	(omitted)	(omitted)	(omitted)
	Drought and Floods	-0.623**	0.112	0.067	-0.409	0.176	-1.610**	0.567**	-0.072	-0.537
	Livestock Loss	0.119	-1.071**	0.067	0.239	-0.765	-0.509	0.648**	-1.703***	0.908
Seasonality (Reference Q1 Sept-Nov	Q2: December to Feb	0.081	-0.313	-0.491	-1.355***	-0.122	-0.769*	-1.075***	-2.226***	-2.136*
	Q3: March-May	0.139	-0.136	-0.687**	-1.035***	-0.694	-0.298	-1.160***	-2.511***	-3.247***
	Q4: June-August	0.729**	-0.057	-0.788**	-0.589	0.037	-0.910*	-0.508	-1.356*	-2.920**
Residence	Residence (1=Rural, 0=Urban)	-0.189	0.102	-0.015	-1.112*	-0.691	0.393	-0.705	-0.756	-0.436
Agro-Ecology (Ref-Arid Zone)	Arid	(omitted)			(omitted)			(omitted)		
	Semi-Arid		(omitted)			(omitted)			(omitted)	
	Non-ASAL			(omitted)			(omitted)			(omitted)
	Constant	-3.327*	-3.3	-6.797***	1.94	1.757	-2.453	5.971***	2.437	-0.687
	N	665	705	758	665	705	686	661	685	613
	r^2_									
	chi^2	71.7	58.8	73	71.1	65.9	60.2	57.8	74.5	55.3
	ll (Log Likelihood)	-61810	-1.70E+05	-2.00E+05	-74225	-1.10E+05	-98196	-75636	-48213	-42601

ANNEX II: Determinants of stunting, underweight and wasting (OLS-regression) – overall sample, urban and rural

		Overall Sample			Stunting		Underweight		Wasting	
		Stunting	**Underweight**	**Wasting**	**Urban**	**Rural**	**Urban**	**Rural**	**Urban**	**Rural**
Child	Age of the Child	-0.603**	-0.322*	-0.141	0.602	-0.928***	0.579	-0.511***	0.189	-0.243*
	Sex of the child (1=Male, 0=Female)	-0.525***	-0.181*	-0.031	-0.293	-0.573***	-0.007	-0.229**	-0.06	-0.034
	Child participated in Community Nutrition Program (1=Yes, 0=No)	-0.035	-0.227**	-0.113	0.341	-0.131	-0.741**	-0.18	-0.776**	-0.009
	Child participates in Grown Monitoring Clinic (1=Yes, 0=No)	0.776*	0.011	0.223	0.574	0.786	0.042	0.054	-0.208	0.434***
	Child Had Diarrhoea 2 weeks before the date of interview (1=Yes, 0=No)	-0.123	-0.053	0.298	0.465	-0.433	0.297	-0.258	0.445	0.172
Mothers	Mothers Education (Reference-Informal (Duksi & Madrasa)/None)									
	Primary	0.071	0.031	0.145	0.665	-0.023	-0.01	0.028	-0.212	0.158
	Secondary	0.161	-0.068	0.083	0.162	0.397	-0.439	0.091	-0.429	0.202
	Post-Secondary	-0.294	0.603*	0.365	0.281	-0.285	0.21	0.723*	0.029	0.259
	Mother's Age	0.850***	-0.036	-0.285	0.327	0.964***	-0.365	0.059	-0.156	-0.324*
	Mother's Weight (Thin <18.5 BMI)-Reference category									
	Mother's Weight (18.5 BMI=<Normal <24.99 BMI)	0.845**	0.2	-0.089	0.698	0.852**	0.356	0.185	0.119	-0.093
	Mother's Weight (Obese >25.0 BMI)	1.018***	0.399**	0.174	1.330*	0.881**	0.603	0.352	0.181	0.26
Household	Sex of the HH (1=Male, 0=Female)	-0.116	0.029	-0.021	-0.984*	0.161	-0.502	0.174	-0.398	0.044
	Produce own food	0.160*	0.171***	0.025	0.603***	0.056	0.221**	0.149**	0.094	0.018
	Food Stocks	0.133***	0.009	-0.037	0.173	0.132***	0.055	-0.003	0.031	-0.053*
	Household Size	-0.448*	-0.335*	0.051	-1.028	-0.425	-0.218	-0.273	-0.143	0.18
	Food Poverty (0=Food Poor; 1 Non-Food poor)	0.067	0.221**	0.275***	1.024*	-0.024	-0.144	0.272**	0.188	0.367***
Health Care	No. of Months of Breastfeeding (natural logs)	0.613*	0.006	-0.206**	0.313	0.582	-0.4	0.038	-0.067	-0.234**
	Excl. Breastfeeding (1 if =6 months, 0 Otherwise)	0.277	-0.01	0.133	0.62	0.241	0.084	-0.031	0.305	0.141
	Excl. Breastfeeding_(1 if >6 months, 0 Otherwise)	0.543*	-0.115	-0.318	0.268	0.883**	-0.178	-0.006	0.427	-0.417*
	Excl. Breastfeeding Less (1 if < 6 months, 0= Otherwise)-Reference									
	Measles Vaccination (1=Yes, 0=N0)	0.062	0.154*	0.064	-2.565	0.068	-1.711	0.148*	0.162	0.043
Infrastructure	Improved Water access (1=Improved, 0=Unimproved)	0.354*	-0.082	-0.061	-0.213	0.490**	-0.282	-0.021	-0.32	-0.05
	Improved toilets (1=Improved; 0=Unimproved)	-0.115	0.011	-0.12	-0.285	-0.029	-0.048	0.007	-0.021	-0.134
	Electricity Connection (1=Yes, 0=No)	0.096	0.392**	0.058	0.344	0.202	0.299	0.423**	0.343	-0.081
Reported Shocks (1=Yes, 0=No)	Disease & Pests Outbreak	-0.462	-0.683***	0.069	-0.585	-0.447	-0.551	-0.699***	-0.195	0.099
	Drought and Floods	0.124	-0.271	-0.08	-0.528	0.264	-0.576	-0.141	0.061	-0.002
	Livestock Loss	-0.078	-0.202	0.087	0.158	-0.04	-0.795**	-0.068	-1.143**	0.255
Seasonality (Reference Q1 Sept-Nov	Q2: December to Feb	0.032	-0.019	-0.267*	-0.163	0.169	-0.089	0.062	-0.352	-0.222*
	Q3: March-May	-0.133	-0.271**	-0.381***	-0.753	0.016	0.258	-0.380***	-0.035	-0.435***
	Q4: June-August	0.136	0.017	-0.104	-0.648	0.271	0.344	-0.034	0.104	-0.125
Residence	Residence (1=Rural, 0=Urban)	0.480**	-0.023	-0.463***						
Agro-Ecological Zone (Reference-Arid zones)	Semi-Arid	-1.268***	0.897***	1.945***	-1.939*	-1.140***	0.13	0.917***	1.094*	1.896***
	Non-ASAL	-1.225***	1.160***	2.053***	-1.727*	-1.119**	0.696	1.138***	1.422**	1.952***
	Constant	-6.336***	-1.818**	0.114	-8.078*	-4.325**	-0.806	-1.546	-1.408	-0.059
	N	1788	1788	1722	379	1409	379	1409	366	1356
	r^2_									
	chi^2									
	ll (Log Likelihood)	-4478	-3473	-3274	-932	-3517	-758	-2689	-762	-2476

Legend: *p<.1; **p<.05; ***p<.01

ANNEX III: Policy statements from agricultural policy

A. Thematic policy statements

1. Food and Nutrition Security
2. Land Use for Crops, Livestock and Fisheries
3. Production and Productivity
4. Biotechnology in Agriculture
5. Post-harvest Losses
6. Water for Agriculture
7. Food and Feed Safety
8. Agricultural Trade and Marketing
9. Agricultural Inputs
10. Agricultural Mechanization
11. Agribusiness and Value Addition
12. Research and Development
13. Extension
14. Agricultural Financing and Investment
15. Institutional Reforms
16. Information and Data Management
17. Labour in Crops, Livestock and Fisheries
18. Agricultural Insurance
19. Private sector participation
20. Agriculture in a changing climate

B. Cross-Cutting policy statements

1. Disaster Management
2. Governance
3. Human Resource Development and Management
4. Gender in Agriculture
5. Youth in Agriculture
6. Human Diseases Affecting Agriculture
7. Vulnerable Groups
8. Drugs and Substance Abuse
9. Management of Shared Natural Resources
10. Literacy Levels

ANNEX IV: List of projects and programmes by MTP III and the latest MTEF

MTP III – List of flagship and other projects and programmes

i. Fertilizer Subsidy Programme
ii. Agricultural Mechanization Programme
iii. Food and Nutrition Security
iv. Livestock Production Programme
v. Value Chain Support Programme
vi. Youth and Women Empowerment in Modern Agriculture Programme
vii. Agricultural Insurance Programme
viii. Research and Capacity Building Programme
ix. Crop Diversification Programme
x. Coastal Disease Free Zone Programme
xi. Strategic Food Reserve

-

xii. Large Scale Production
xiii. Small Holder Productivity and Agro-processing:
xiv. Agricultural Technology Development Programme
xv. Climate Smart Agriculture
xvi. Market Access and Product Development Programme
xvii. Miraa Farmers Livelihood Improvement Programme
xviii. Pastoral Resilience Building Programme
xix. Traditional High Value Crops Programme
xx. Comprehensive African Agricultural Development Program (CAADP)
xxi. Promotion of Investment and Cooperation in Agriculture

And another 14 flagship and other projects and programmes are identified under Blue Economy

MTEF – List of programmes and delivery units under Agriculture Rural and Urban Development (ARUD) Sector Report

i. SP. 2.1: Land and crops development
   - Nyayo Tea Zone Development Corporation
   - Plant Genetic Resource (Plant Protection Services)
   - Agriculture Engineering Services
   - Kenya Climate Smart Agriculture Programme (KCSAP)
   -

ii. SP 2.2: Food Security Initiatives
   - Drought Resilience and Sustainable Livelihoods Programme in Horn of Africa (DRSLP)
   - National Agriculture and Rural Growth Inclusive Project
   - Aflatoxin management
   - Rice promotion project
   - Crop insurance project
   - Coffee industry revitalization

- Agriculture Development Corporation (ADC)
- Kenya Cereal Enhancement Programme Climate Resilience Agricultural Livelihoods Window (KCEP-CRAL)
- Fertilizer subsidy programme
- National Food Security Programme
- Nutrition Sensitive Agriculture Project
-

iii. SP 2.3: Quality Assurance and Monitoring of Outreach Services

- Agriculture Sector Development Support Programme (ASDSP)
- Enhancing gender responsive extension services in Kenya
- Smallholder Horticulture Empowerment and Promotion Project for Local and Up Scaling (SHEP PLUS)
- Bukura Agricultural College
- Agricultural Advisory Services
- Kenya Census of Agricultural Programme
- Kenya School of Agriculture
-

iv. SP.3.1 Agribusiness and Market Development

- National Accelerated Agricultural Inputs Access Programme (NAAIAP)
- Small-scale Irrigation and Value Addition Project
- Crops Resources, Agribusiness and Marketing Development
-

v. S.P 3.2 Agricultural Information and Management

- Agricultural Information Resource Centre
-

vi. SP6.1 Livestock Policy Development and Capacity Building

- Headquarters Administrative Technical Services
- Kenya Meat Commission
- Development Planning Services
- Livestock Resources and Market Development Services
- Livestock Training – Support Services
- Regional Pastoral Resource Centre – Narok
- Regional Pastoral Resource Centre – Griftu
- Regional Pastoral Resource Centre – Isiolo
- Dairy Training School
- Livestock Technical Advisory Services
- Project Development Monitoring and Evaluation
- Veterinary Headquarters
- Kenya Veterinary Board
- AHITI – Ndomba
- AHITI – Nyahururu
- AHITI – Kabete
- Meat Training School – Athi River

vii. SP 6.2 Livestock Policy, Research and Regulations

- Policy coordination
- Research Liaison and Agenda setting

- Regulatory, legislative affairs and administrative services
- Veterinary Medicines Council (VMC)
- National Livestock Development and Promotion Services (NLDPS)
- BIG four Initiatives (Support to Food and Nutrition Security initiative)

viii. SP 6.3 Livestock production and management
- Sheep and Goats Breeding Farms
- Breeding and Livestock Research Farm
- Animal Resource Development Service
- Range Ecosystems Development Services
- Apiculture and Emerging Livestock Services
- Animal Breeding and Reproductive regulatory Services
- Kenya Genetic
- Resource Centre (KAGRC)
- Smallholder Dairy Commercialization

ix. SP 6.4 Livestock Products Value addition and Marketing
- BIG FOUR initiatives
- Livestock Resource and Market Development Services
- Livestock Market and Agribusiness Development
- Livestock Value Chain Support Project
- Kenya Livestock Insurance Scheme
- Regional Pastoral Livelihood Resilience Project (RPLRP)
- Veterinary public health, hides and skins and leather quality control

x. SP 6.5 Food Safety and Animal Products Development
- National Bee keeping Institute
- Livestock Breeding and Laboratory Service
- Veterinary Medicines and Immuno-Biological Products Control
- Veterinary Public Health, Hides and Skins and Leather Quality Control
- Standard Market Access Project (SMAP)

xi. SP 6.6 Livestock Disease Management and Control
- Veterinary Laboratory Investigation Services (Regional)
- KEVEVAPI
- Veterinary Diagnostics and Efficacy Trial Centers
- Central Veterinary Laboratory – Kabete
- Vector Regulatory and Zoological Services
- National Animal Disease strategies and Programs
- Foot and mouth disease (FMD) national reference laboratory
- Disease Free Zone
- Ports of Entry and Border Post Veterinary Inspection Services
- Kenya Tsetse and Trypanosomiasis Eradication Council

xii. SP: 6.7 Agricultural Research
- KALRO

xiii. Fisheries Development and Management – 11 Programmes

Co-funded by the
European Union