



ADDRESSING POLICY CHALLENGES TO FOOD SECURITY IN KENYA

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ABSTRACT

Resolving national food security policy challenges in Kenya has the potential to eradicate hunger and guarantee consistent access to food by all. Food insecurity, the lack of regular physical, social, and economic access to nutritious and sufficient food all year round, has put citizens at a greater risk of malnutrition and poor health. The food crisis, particularly in arid and semi-arid areas has severely deteriorated due to worsening drought in Kenya and the Horn of Africa. The number of people affected was projected to increase by 47.5% by the end of 2022. Key contributing factors include repurposing of traditionally viable agricultural land; under-exploitation of irrigation-fed agriculture; absence of locally-led and community-managed food basket reserves; and inadequate diversification of the variety of national food reserves. The paper recommends the establishment of communal and county-specific food baskets and intensifying the exploitation and expansion of irrigation-fed agriculture in the major Water Basin Catchment Areas. There is also need to repurpose the usage of traditional agricultural land and revitalization of virtual grain reserves through the Kenya Agricultural Commodity Exchange (KACE).

KEYWORDS: Food Insecurity, Irrigation, Inflation, Supply Chain, Agricultural Land Repurposing, Irrigation-Fed Agriculture, Drought in Kenya, National Food Security Policy.

1. INTRODUCTION

Agricultural policies are essential in promoting food security by harnessing the sector's prospects. They enhance land utilization and promote value chain systems in production, storage, distribution, and marketing of agricultural produce. Since 1963, the Kenya government has reviewed its food security policies among them the Economic Recovery Strategy (ERS) 2003-2007; the 2007 Kenya's Vision 2030; the Constitution of Kenya 2010; the Agriculture Sector Development Strategy (ASDS) 2010; the National Land Policy 2009; the National Water Master Plan 2030; the Big Four Agenda on food security and nutrition 2017; and the National Irrigation Policy 2017, among others. Additional legislative frameworks include the National Cereals and Produce Board Act (Cap.338), the Land Control Act (Cap 302), the National Land Commission Act, 2012, the Land Act, 2012, the land registration Act No.28 of 2016, and the National Food Reserve & Trading Corporation Act, 2022. While Kenya has undertaken significant efforts in addressing food insecurity, consistent access to food by all people remains a major challenge. Therefore, there is a need to examine the relationship between the policy framework and food security in the wake of the persistent challenges.

2. BACKGROUND

The Kenya Kwanza government has revitalized efforts to address food insecurity in the country. President William Ruto flagged off relief food consignments to drought-stricken counties and recently lifted the 10-year ban on the importation and planting of genetically modified organisms (GMO). At the 77th United Nations General Assembly (UNGA) summit, the president lobbied for sustainable solutions to mitigate the degenerating drought situation in the Horn of Africa (UNGA, 2022). This has further been amplified by the war between Russia and Ukraine that has disrupted the global supply chains of food and agricultural inputs (ACLED, 2022). The supply deficits have increased commodity prices and negatively affected agricultural productivity amidst extreme weather and economic shocks. While the global economy is gradually recovering from supply chain disruptions, high levels of inflation and public debt have weakened the local currency and increased the cost of imports (FAO, 2022).

Kenya is among the top twenty countries classified globally as hunger hot spots and is experiencing the worst drought situation in 40 years (FAO and WFP, 2022; IGAD, 2022 July 5th). The potential for acute food shortage in the country has increased especially in arid and semi-arid lands (ASALs) (NDMA, 2022; ROSEA, 2022). The number of people affected and seeking humanitarian assistance increased from 2.8 million to 4.2 million between December 2021 and June 2022 (ROSEA, 2022). This was due to the effects of below-average rains (Famine Early Warning Systems Network, 2022). The number is projected to increase by 47.5% between October to December 2022 due to the expected depressed rainfall (NDMA, 2022). If the contributing factors remain unchecked, food insecurity is expected to deteriorate further, leading to more negative impact on livelihoods.

3. RESEARCH METHODOLOGY

This research paper used a mixed-method study design. Primary data was collected through interviews with key experts and practitioners while secondary data was collected through a comprehensive desktop review of documented sources. The data was analyzed thematically as per the research questions and objectives.

4. KEY FINDINGS

The following key findings constitute some of the major policy gaps that the country encounters in realizing the full potential of food security.

a) Repurposing of agricultural land

Increased and multiple sub-division of traditionally known parcels of farming land has led to decline in agricultural productivity, yet land is a major factor of production (Mugo et al., 2021). This is attributed to uncontrolled usage of private land within the farming zones under freehold and customary land systems (Omwamo, 2016). The land registration Act No. 28 of 2016, Section 28 does not restrict individuals on the usage of free hold. Section 76 of the Act also does not grant powers to the land registrar at county governments to guide development (GoK, 2016). Further, the Land Control Act (Cap. 302) that guides transactions on agricultural land is pegged on the administrative architecture of the 1963 constitution as opposed to the devolved governance system. Consequently, it's not aligned with the provisions of the Constitution of Kenya 2010, the

Environmental and Land Court Act, 2011, the Land Registration Act, and the Land Act, 2012. Besides, the Land Control Bill, 2022 which seeks to repeal and replace the Land Control Act (Cap. 302) to establish Land Control Committees to guide agricultural land management, is still pending in parliament. This is against the vision of the 2009 National land policy towards efficient, sustainable, and equitable use of land (GoK, 2009).

High population growth rate in both urban and rural areas has increased demand for household settlement, leading to further land sub-divisions. The trend enhances swift decline in farmland, threatening food security. There is also a rise in the conversion of large tracks of the land into satellite cities such as the Northlands, Tilisi, and Tatu cities (Thomson Reuters Foundation, 2019). This trend is significantly shrinking arable land as unplanned and unsustainable real estate grow. The commercialization limits food production activities like agriculture while speculating for potential investors. In Kiambu county, approximately 17,000 acres of coffee plantations and livestock keeping are being turned into satellite cities. In Nyandarua and Nakuru Counties, the once thriving cotton and pyrethrum farming is dwindling due to the increased urge to subdivide and sell. Further, in Laikipia and Narok Counties, wheat farming is fading away as a result of multiple factors such as the sub-division of communal land and persistent drought, hence making commercial agriculture less viable. While farming provides a livelihood for 80% of Kenya's rural population, arable land per person declined from 0.42 Hectares (ha) in 1961 to 0.12 ha in 2016, a 71.4% decline (World Bank, 2020). With Kenya's population registering a 336.7% increment between 1969 to 2019 (KNBS, 2019), the pattern is expected to continue.

b) Irrigation

The National Irrigation Policy 2017, targets to increase the area under irrigation to approximately 1.34 million ha by 2030 (GoK, 2017). There exists an aspiration to accelerate irrigation expansion at an annual rate of 40,000 ha since 84% of the farming land requires irrigation for sustainable and optimal crop production (GoK, 2017). However, only 13.5% (180,503 ha) of the land is under irrigation. (AgCK, 2020; KIPPRA, 2021; GoK, 2017). Particularly, water basin catchment areas of Lake Victoria, Ewaso Ng'iro North, Tana River, and Athi River remain majorly under-developed (GoK, 2017) and highly dependent on rainfall. Irrigation-based farming is not widely utilized due to weak budgetary allocations, low technology adoption, low utilization of water, and poor land tenure systems. This has led to reduction of agricultural productivity per acre and increased unit production costs which further impede affordability of readily available modern farming technologies.

The country has been unsuccessful in its attempt to boost food security through the exploitation of its irrigation potential (KIPPRA, 2021). Consequently, heavy reliance on rain-fed farming amidst extreme weather conditions has led to persistent food deficit, making it one of the most food insecure in the Horn, East, and Southern African (FAO and WFP, 2022). Large-scale irrigation projects such as the Galana Kulalu are operating below actual production capacity. The scheme was expected to make KES 1.2 billion in maize sales per season. However, in 2019, it only achieved 22.5% of the revenue (National Irrigation Authority, 2021). This was influenced by the under-

development of the 20,000 acres of leased land, weakness in the contract design and implementation, extreme weather conditions, and reduction in subsequent funding (GoK,2019).

The failure to entirely tap into the existing country's irrigation prospects and the persistent weather extremes has made the country a net importer of major staple foods such as maize, wheat, and rice. As of 2019, wheat and rice production deficits were 85%, and 81% respectively (Lee et al., 2017). Maize production was approximately 1.77 tonnes/ha, 70.5% lower than the full capacity of 6 tonnes/ha under conducive agronomic and management conditions. As such, the value of imported maize increased by 19% in 2019/20 (Kamer, 2022). The country was the largest maize importer accounting for 21% of sub-Saharan Africa's expected maize imports of 3.4 million tonnes (Sihlobo, 2022). It is estimated that in 2022/23 approximately 700,000 tonnes will be imported to supplement the country's demand. The deficit persists against the backdrop of the availability of about 6 Million Hectares of arable land and lackluster focus on large-scale irrigation of farms producing traditional foods such as sorghum, millet, and cassava.

c) Management of food basket reserves

The management of grain depots in Kenya is the responsibility of National Cereals and Produce Board (NCPB) under the national government (Obonyo, 2012). This hampers the exploitation of devolved and communal food reserves in supporting self-sufficiency and local food security. The significance of community and county-specific food basket reserves is not enshrined in the National Cereals and Produce Board Act (Cap.338). The Act mandates the NCPB to regulate storage, distribution, marketing, and processing of maize, wheat, and scheduled agricultural produce.

While the NCPB has 121 warehouses spread across the country, it is non-inclusive as it comprises representatives of licensed large-scale grain growers only. The depots lack diversified composition of food crops as they only store limited number of grains particularly maize, wheat, rice, and beans. There is no reference to other traditional food crops like tubers and roots, oil-seeds, animal foods and fruits. In addition, while the government operates Warehouse Receipt Systems (WRS), they have limited outreach countrywide. Only five NCPB stores, Kitale, Eldoret, Nakuru, Meru, and Nairobi, have been certified to allow owners or dealers of grain commodities to deposit their cereals. In return, they are issued a Warehouse Receipt as a proof of ownership as they wait for prices to be in their favor. The inadequate coverage of the initiative fails to cushion all farmers from post-harvest losses and price exploitation by unscrupulous middlemen.

There is a lack of active collaboration between the NCPB, the county governments, and local communities to facilitate the development of community food basket reserves based on local knowledge and experiences. The inclusion challenge is attributed to the vertical management of the national reserve depots. The situation weakens active contribution of all actors and stakeholders in ensuring food security at grass-root levels. Principally, inclusion and participation of local stakeholders remains crucial as they are more informed about the evolving drought situations.

While the NCPB depots are aimed at spreading the national reserves across the country, they do not ensure equitable access to, and sufficiency of food reserves in some of the drought prone counties

and constituencies. This is not only due to the inadequacy of depots, but also lack of diversified food basket reserves that are community-owned across the 47 counties. Consequently, it increases the risk of exposure facing single national reserves such as mismanagement, corruption practices, and storage pest infestation. The absence of community grain banks impedes access to food within a short distance of the affected zones. Experiences from other jurisdictions such as Fiji and Indonesia indicate that countries have policy frameworks that anchor community and devolved government food reserves in law. In Fiji there are community-managed food reserves particularly in Yasawa islands to address food insecurity in the wake of tropical cyclone Evan in 2012(Tokalauvere, 2018). Besides, Indonesia, has legislated for three tiers of national food reserves consisting of the central government, local government, and community food reserves(Mardiyati & Planning, 2017). Again in sub-Saharan Africa, countries such as Burkina Faso, Cameroon and Morocco have systems of community granaries to secure food access in times of disasters and during lean season (Mardiyati & Planning, 2017; Cortès & Carrasco, 2013).

d) Diversification of Strategic Grain Reserves (SGR)

Kenya's policy on national strategic food reserve is only limited to physical stock and its cash equivalent. The overreliance on physical Strategic Grain Reserves (SGR) impedes fast and adequate response during food emergencies. The National Food Reserve & Trading Corporation Act, 2022 provides the legal framework for the management of the physical SGR. The reserves are associated with high levels of wastage and huge costs due to poor storage. Further, they are touted to have the potential to distort market prices, yet they are supposed to buffer shortfalls in the food supply. This hampers the effectiveness of their primary function in resolving food emergencies resulting from increased incidences of drought.

The strategy to hold physical stock is faced with myriad management challenges. Key among them is the distortion of markets due to price volatility and inability to predict future harvests. In addition, governance deficits including mismanagement of resources and corruption have beleaguered the national grain reserves, leading to poor performance in service delivery. In October 2021, the national food reserve was empty despite the allocation of KES 12 billion (financial year 2021/2022) intended for restocking. Instead, the NCPB demanded KES additional 10.34 billion for the same amid worsening drought and hunger in the country (The Star,2021).

While Kenya lacks virtual grain reserves, experts opine that they have the potential to reduce operational costs such as transport and storage. Virtual grain reserve refers to the purchase of strategic food reserves for future delivery through commodity futures markets as opposed to physical purchase in the open market for storage in the SGR(Chapoto et al., 2019).The use of futures contracts enables prediction of the market grain prices a few months ahead.

The contracts enhance reserve availability between the buyer and the seller and act as a substitute for the actual physical reserve of the grains. They also enable buyers to have access when the need arises. The agreement clearly outlines the quantity, price, time, and location where the commodity should be delivered(Kaur & Bansal, 2013). In case the grain is not required, the buyer can withdraw from purchasing the grain before the maturity of the futures contract and get a refund of the retainer

deposit from the seller. Zimbabwe was the first African country to have a virtual agricultural commodity exchange in 1995 but collapsed in 2001 due to government-imposed market constraints (Mbeng Mezui et al., 2013). In Kenya, similar efforts were made in 1997 to establish the Kenya Agricultural Commodity Exchange Limited (KACE), yet it has failed in delivering its mandate. This is due to the inability to find the right mix of appropriate and affordable technology platforms and complementary services to the virtual commodity trading. Consequently small scale farmers continue to have inadequate access to market information and experience increased transaction costs while trading (Mukhebi & Kundu, 2014). Besides, the KACE is faced with financial challenges attributed to delays in payment and unbalanced revenue sharing. The technology service providers take the lion's share of the premiums charged. Other countries such as South Africa and Malawi have virtual grain reserves in the form of the Agricultural Commodity Exchange. They hold a proportion of their SGR in the form of options or futures contracts. Besides, the virtual reserves can also be in the form of an SGR fund that the government can use to purchase food reserves when need arises (Chapoto et al., 2019).

The futures are very competitive as they allow purchase of grains during seasons when prices are relatively low (Rashid et al., 2010). The contract gives options for delivery at a later date when the country expects market supply shortage in maize stocks which is characterized by rising prices (Mbeng Mezui et al., 2013). Further, the model provides the flexibility of the possibility to end the contract if no additional grain is required (Jayne et al., 2014). Contrary, the physical grain reserves has no flexibility for future delivery and termination of the contract as grains have to be procured and stored early enough during the harvesting season.

Separately, the virtual reserves don't require to account for unforeseen deficits by purchasing excess physical stock in advance (Chapoto et al., 2019). This helps to reduce huge costs of procurement and storage incurred in physical grain reserves. There are also reduced direct market interventions by the government creating an enabling environment for the private sector as a key player. The free market improves the efficiency of responding to the national food crisis (Mbeng Mezui et al., 2013).

5. CONCLUSION

Guaranteeing availability of food on a reliable and regular basis to all citizens in Kenya is a major national security concern. However, this is threatened by increased repurposing of traditionally viable agricultural land, underutilization of irrigation-fed agriculture, poor management of communal and devolved grain reserves, and lack of diversified grain reserve portfolio. Therefore, policymakers should address food security crisis in a sustainable manner by sealing the gaps that impede the realization of the prospects of the agricultural value-chain systems.

6. RECOMMENDATIONS

The following interventions are crucial in bolstering food security in Kenya.

1. The Parliament of Kenya should fast track finalization of the enactment of Land Control Bill, 2022 that seeks to control the usage of designated agricultural parcels of land.
2. The Ministry of Lands should:

- a) Fast-track the formation of the proposed Land Control Committees as soon as the Act is enacted.
 - b) Sensitize Kenyans on sustainable methods of enhancing food security.
3. The Ministry of Agriculture in collaboration with the Ministry of Devolution should:
- a) Intensify zoning and capacity-building of regional food baskets in the country to establish varied and community-specific food reserves across all the 47 counties based on their specific agricultural activities.
 - b) Zone and designate specific and planned types of food production baskets in different regions while establishing agro-industries for value addition of the stored crops at the local level.
 - c) Intensify the establishment of long-term land-leasing programmers at counties to attract large-scale agricultural investors to boost county irrigation-fed agricultural productivity.
 - d) Innovate the right mix of appropriate, user-friendly, and affordable technology platforms and complementary services to the virtual commodity trading as well as resolving the unbalanced revenue sharing between KACE and the technology service providers.
4. The National Cereals and Produce Board should establish a joint commercial comprising of public and private ventures to address governance challenges in the management of physical grain reserves.
5. The National Treasury should:
- a) Increase the allocation of strategic grain reserve fund, which the government can utilize to purchase grain futures contracts when necessary.
 - b) Offer alternative financing such as Public Private Partnership (PPPs) to enhance the use of irrigation technologies and schemes to increase utilization of arid and semi-arid areas for food production.

REFERENCES

- Agricultural Council of Kenya*. (2020). *A new dawn for irrigation in Kenya: a review of the proposed irrigation's regulations 2020*. – Agricultural Council of Kenya (AgCK). 1–14. <https://www.agck.or.ke/a-new-dawn-for-irrigation-in-kenya-a-review-of-the-proposed-irrigations-regulations-2020/>
- Atieno, R. and Alila P.O. (2006). *Agricultural Policy in Kenya*. January, 20–22.
- Bjornlund, V., Bjornlund, H., & Van Rooyen, A. F. (2020). Why agricultural production in sub-Saharan Africa remains low compared to the rest of the world—a historical perspective. In *International Journal of Water Resources Development* (Issue sup1, pp. 1–34). <https://doi.org/10.1080/07900627.2020.1739512>
- Chapoto, A., Subakanya, M., Beaver, M., & Kuteya, A. N. (2019). Indaba Agricultural Policy Research Institute. Rural Agricultural Livelihoods Survey, May. <http://www.iapri.org.zm>

- Cortès, G. P., & Carrasco, I. G. (2013). *First line of defence: Assessing the potential of local food reserves in the Sahel*. October. <http://www.foodreserves.org/?p=335>
- Food and Agricultural Organization. (2021). Land use statistics and indicators Global, regional and country trends Land use statistics and indicators Global, regional and country trends 1990-2019. *Faostat*, 14.
- Government of the Republic of Kenya. (2013). *National Water Master Plan 2030*. October, 1–281.
- Government of the Republic of Kenya. (2017). National Irrigation Policy, 2017. Ministry of Water, Sanitation and Irrigation.
- Government of the Republic of Kenya. (2009). *National Land Policy*. 3. MINISTRY OF LANDS.
- Government of the Republic of Kenya. (2009). Sessional Paper No. 3 of 2009 on National Land Policy. *Government Printer*, 3, 73. <http://www1.uneca.org/Portals/lpi/CrossArticle/1/LandPolicyDocuments/Sessional-paper-on-Kenya-National-Land-Policy.pdf>
- Government of the Republic of Kenya. (2022). “National Food Reserve & Trading Corporation Bill, 2022.” <https://kilimo.go.ke/wp-content/uploads/2022/06/National-Food-Reserve-and-Trading-Corporation-Bill-2022-1.pdf>
- Hornum, S. T., & Bolwig, S. (2020). The Growth of Small-Scale Irrigation in Kenya. The Role of Private Firms in Technology Diffusion. Report prepared for the TEMARIN project. *The UNEP DTU Partnership*.
- Jayne, T. S., Sturgess, C., Kopicki, R., & Sitko, N. (2014). Agricultural Commodity Exchanges and the Development of Grain Markets and Trade in Africa: A Review of Recent Experience. *Indaba Agricultural Policy Research Institute (IAPRI)*, 88(October).
- Japan International Cooperation Agency. (2013). *The Development of the National Water Master Plan 2030. Final Report Volume - I Executive Summary*. October.
- Kamer, L. (2022). Import value of maize in Kenya 2016-2020 Import value of maize in Kenya from 2016 to 2020 (in million Kenyan shillings). 2020–2021. <https://www.statista.com/statistics/1170304/import-value-of-maize-in-kenya/>
- Kaur, S., & Bansal, A. (2013). An overview of national commodity exchanges in India. *International Journal of Electronic Finance*, 7(3–4), 299–307. <https://doi.org/10.1504/IJEF.2013.058600>
- Kenya National Bureau of Statistics (2019). 2019 Kenya Population and Housing Census. Government Printers, Nairobi, Kenya.
- KIPPRA. (2021). Re-engineering of Galana Kulalu food security project to maximize its potential. *Kippira*, June, 1–11. <https://kippra.or.ke/re-engineering-of-galana-kulalu-food-security-project-to-maximize-its-potential/>

- Mbeng Mezui, C. A., Rutten, L., Sekioua, S., Zhang, J., N'Diaye, M. M., Arvanitis, Y., Duru, U., & Nekati, B. (2013). *Guidebook on African Commodity and Derivatives Exchanges*. 92.
- Mukhebi, A., & Kundu, J. (2014). Linking farmers to markets in Kenya: The evolving KACE model. *Cahiers Agricultures*, 23(4–5), 282–287. <https://doi.org/10.1684/agr.2014.0710>
- Mugo, F. W., Ndegwa, P. E., & Mwangi, P. I. K. (2021). *Managing Fragmentation of Agricultural Land for Livelihood Security in Kenya*. 2 (1), 63–64.
- National Irrigation Authority (2021). Galana Kulalu Irrigation Development Project. <https://irrigation.go.ke/index.php/projects/flagship-projects/galana>
- National Drought Management Authority. (2022). *National Drought Early Warning Bulletin. September*, 1–26.
- Omwamo, R M. (2018). *Land Tenure Model. September 2016*.file:///F:/FoodInsecurity/Landtenurebasedmodelforguidingandcontrollingdevelopmentinkenya.pdf
- Macrotrends. (2022). Nairobi, Kenya Metro Area population 1950-2022. 1–4.<https://www.macrotrends.net/cities/21711/nairobi/population>.
- Njora B.,and Yilmaz Hasan (2021). Analysis of the impact of agricultural policies on food security in Kenya. *Applied Economics Letters*, 24(1), 49–53. <https://doi.org/10.1080/13504851.2016.1161708>
- Mardiyati, S., & Planning, M. N.-. (2017). Revitalization Model of Community Granary Institutional as Strengthening of Food Self-Sufficiency in Takalar District. *Researchgate.Net*, 6(8), 1795–1800. <https://doi.org/10.21275/ART20176408>
- Obonyo, S. O. (2012). *Challenges of strategy implementation at national cereals and produce board, Kenya. School of Business, University of Nairobi*.<http://erepository.uonbi.ac.ke/bitstream/handle/11295/12368/Challenges%20of%20strategy%20implementation%20at%20national%20cereals%20and%20produce%20board,%20kenya?sequence=4>
- Rashid, S., Winter-Nelson, A. and Garcia, P.(2010). Purposes and Potential for commodity exchanges in African economies. *International Food Policy Research Institute* (01035).
- Sihlobo, W. (2022). *Changes in sub-Saharan maize trade spell potential trouble for Kenya*. 6–8.<https://theconversation.com/changes-in-sub-saharan-maize-trade-spell-potential-trouble-for-kenya-181487>
- Tokalauvere, L. (2018). Food Banks in Yasawa: Communal Farming and Resilient Behaviour. 36–40.

- The Kenya National Bureau of Statistics. (2022) Economic survey 2022. Published by: Kenya National Bureau of Statistics, Real Towers, Upper Hill.*
- The United Nations General Assembly. (2022). 77th Session United Nations General Assembly. 1–2. <https://sg.usembassy.gov/77th-session-united-nations-general-assembly/>*
- The Government of Kenya. (2019). Financial Statement of National Irrigation Board. Office of the Auditor General. <http://www.oagkenya.go.ke/>*
- The Star (October 2021). WORSENING DROUGHT, HUNGER. Food reserves empty as NCPB chiefs quizzed over Sh12bn, Iringo and Kimote say the board has not bought any cereals due to lack of funds. October, 1–15.*
- The International Fertilizer Development Center. (2021). Transforming Kenya's Food Basket: Joshua Wairegi's Story. 1–9.*
- Thomson Reuters Foundation (2019). 'Islands of wealth in a sea of slums'? Kenya divided over satellite cities. March, 1–12.*
- World Bank (2020). Kenya Arable Land 1961- 2020*