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# BUILDING RESILIENT MARKETS IN FOOD SYSTEMS

## LEARNING BRIEF

### INTRODUCTION & RATIONALE

Increasing frequency and intensity of shocks and stresses in arid and semi-arid lands (ASALs) like Turkana and Samburu counties undermine local food systems. Prevailing shocks affecting local food systems include locust invasion, COVID-19, inter-ethnic conflicts, drought, and their related spikes in food prices. Increases in food prices are driven largely by barriers to delivering foods to rural markets as well as high demand. Most households in these counties rely on local markets for the majority of food they consume. Furthermore, commercial, market-driven, *and* subsistence agricultural production in these counties is extremely limited due to challenging climate and ecological conditions that pose risks for smallholder agro-pastoralists and limit the potential for investment in crop production more generally. This underlies the need to strengthen the resilience of markets in the food system, from the standpoint of food supply chain linkages with other productive regions in Kenya, as well as the potential of improving the productive capacities of producers in Samburu and Turkana, both of which are crucial to improving food security and addressing malnutrition for the most vulnerable households.

This learning brief summarizes insights from USAID Nawiri's Food Market System Assessment; literature reviews; findings from the Cost of Diet, Household Economy Analysis (HEA), and Labor Market Analysis reports; and workshops with public and private sector stakeholders the team undertook to identify local solutions and strategies. These insights inform USAID Nawiri's approaches

to strengthen local and regional food systems to improve households' ability to access safe, affordable, and nutritious foods year-round.

## LEARNING JOURNEY

While private sector constraints to operating effective food market systems are relatively well understood, a more thorough analysis of these constraints was required to determine appropriate interventions and partnerships to extend the reach of food market systems to contribute to reducing malnutrition in the two counties. The study aimed at better understanding market system functionality with regard to seasonality, physical access, market diversity and connectivity, availability and stability of input supplies, transportation services, and formal and informal financial services. The team consulted with county government officials regarding critical investments required for building a resilient market system in Samburu and Turkana that addresses both the supply and demand for nutritious food. Key discussions centered around 1) What are the key systems influencing resilient diets (i.e., demand for nutritious food), what services do they provide, how functional are they?; 2) What are the key barriers / constraints that prevent the demand and consumption of nutritious diets (knowledge, beliefs, laws, financial means, infrastructure); and 3) what capacities and incentives do actors need to contribute to the supply of nutritious food in markets?

## INSIGHTS AND IMPLICATIONS

**INSIGHT N°1: Designing climate-sensitive, shock-responsive, and context-specific livelihood diversification strategies focused on livestock production and off-farm livelihoods to build household resilience of poor and very poor households is a determinant for increased access to nutritious foods in the market all year round.**

Pastoralism is the primary livelihood in both counties and livestock provide an important source of food and cash income for middle and better-off households. Livelihood outcomes are shaped by pastoralists' vulnerability to manifold and convergent shocks (drought, rangeland depletion, animal health) that have seen trending declines in livestock production and productivity even for better-off wealth groups in recent years. Findings from the food market system study found a direct link between household purchasing power for buying more nutritious and diversified foods and income from livestock sales. Furthermore, the HEA found that all livelihood zones in Samburu and Turkana counties demonstrated that the means of obtaining food is mainly through market purchase which accounts for 60-70% of the households' food needs. The poor and very poor in most livelihood zones within both counties depend on self-employment and casual labor as important income options for both women and men. Poor and very poor households struggle to maintain the minimum 4.5 tropical livestock units per capita required for sufficient domestic consumption (including milk for young children) and sale of livestock products due to frequent shocks and stresses. The HEA revealed that it is not clear to what extent livestock will continue to be a viable livelihood option for the poor and very poor in some areas of Turkana in the context of recurring drought.

In a study conducted by Kenya Market trust and Pathways to Resilience in Semi-Arid Economies (PRISE) in 2019, it indicates that climatic projections based on all three Representative Concentration Pathways

(RCPs<sup>1</sup>), 2.6, 4.5 and 8.55<sup>2</sup> projected potential impacts of climate on livestock in the ASAL counties will result in lower cattle production per unit area.<sup>3</sup> Coupled with land tenure changes (which are addressed in the Governance and Systems Strengthening for Nutrition Learning Brief), especially in Samburu County, impacts of climate change are getting more pronounced and complex. Increased income leading to increased demand for nutritious food will require a layered approach working with markets to increase availability of nutritious food to impact on cost of foods hence making it more affordable for the poor and very poor.

**Implications** - Improving investments in livestock production systems where the sale of livestock is used to fund purchase of essential grains and staple foods, support coping strategies during seasons of scarcity when households tend to purchase less food and/or less nutritious/less diverse foods. The practice to sell livestock at the peak of drought when livestock conditions are often at their worst result in poor terms of trade, therefore, pastoralists dependent on markets for their household food supplies are disadvantaged and unable to meet their dietary needs. Designing risk-informed livestock program interventions alongside the drought management cycle that anticipate and adapt livestock management and access to markets based on heightened drought risk (and risks from other shocks and stresses) is fundamentally important to improving access to food for households in ASALs. USAID Nawiri is investing in Resilience Design (RD) to return ecosystem function using the Smallholder Farming Systems Approach.<sup>4</sup> During Phase I, USAID Nawiri adapted this approach to the dryland context to support smallholder farmers (pastoralists and agro-pastoralists) and those who support them have a deeper understanding of livestock production systems within their agroecosystems. This will be implemented by working with households and communities to map their resources and use agro-ecological principles to restore ecosystem function for better soil fertility, moisture retention, vegetation cover and water availability.

Based on lessons learned from USAID Nawiri REAP activities, USAID Nawiri in partnership with key stakeholders will focus on fodder production and conservation for dry season feeding. This will be implemented by exploring barriers and incentives for adopting forage production and conservation practices. In addition, it will test whether promotion of fodder production and use has an impact on household nutrition and evaluate the value for money in investing in fodder promotion activities to inform scale up options.

USAID Nawiri will sequence and layer activities building out of cash mechanisms and connections to nutritious foods in local markets through our drought response. Although vulnerable to drought and flooding, livestock rearing will remain an important livelihood for food security and social protection. With the impact of continued land degradation exacerbated by climate change, greater investment is needed in restoring ecological function for temperature regulation as well as forage availability and water

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<sup>1</sup> RCPs are scenarios that include a time series of emissions and concentrations of all greenhouse gasses. Scenarios describe plausible trajectories of different aspects of the future that are constructed to investigate the potential consequences of anthropogenic climate change.

<sup>2</sup> RCP 2.6 represents low emission scenarios, RCP 4.5 represents medium range and RCP 8.5 represents high range emission scenarios

<sup>3</sup> Contextualizing Pathways to Resilience in Kenya ASALs under the Big Four Agenda, 2019, Kenya Market Trust and PRISE

<sup>4</sup> Mottram, A., Carlberg, E., Love, A., Cole, T., Brush, W., and Lancaster, B. 2017. Resilience Design in Smallholder Farming Systems: A Practical Approach to Strengthening Farmer Resilience to Shocks and Stresses. Washington, DC: The TOPS Program and Mercy Corps.

management and quality. The program will integrate long-term strategies aimed at improving breeding practices and strengthening current herd management practices. Complementing these resilient landscape activities will be a focus on community breeding and selection of high-performing animals (heat tolerant, high milk yielding, low feed inputs) from local genetics. Where appropriate and in partnership with county governments, alternative species (e.g., camel or poultry) as well as improved breeds (e.g., dairy and Boar goats) will be promoted. The approach to increasing availability and ownership of suitable improved breeds and alternative species will be co-designed with county officials.

**INSIGHT N°2: Engagement with the food system actors across value chains and viable market solutions and business models are required to increase efficiencies and stabilize year-round supply of nutritious foods through improved market connectivity/integration.**

Analysis of external, primary, secondary and tertiary markets provided critical insights on systemic constraints that have led to the current weak market linkages and integrations, hence inefficiencies in the food market supply chain.

The further the market from the county headquarters the less availability of nutritious diversified foods, and higher the market prices and increased instances of food safety issues. The study indicated that there is nascent yet growing demand for fresh produce outside of primary and secondary markets (where demand for these goods is very high) among the rural and harder-to-reach areas.

Transforming local food systems to ensure year-round availability of nutritious foods will require significant public and private investment to address high transport and security costs, a lack of bulk storage options, and to rehabilitate and upgrade irrigation systems. Households in Samburu purchase and consume more fresh produce in dry/lean seasons when household incomes decrease. In Turkana, household food demand aligns with periods of increased cash flow and income from livestock sales. The demand and consumption of more diverse food products increases in the rainy seasons and does not appear to mimic demand-substitution patterns observed in Samburu. Furthermore, findings show that households purchase more diversified nutritious foods when women have physical access to markets and income to purchase nutritious foods. As market actors, women dominate retailing activities in the case of staples and vegetables, while men dominate wholesaling, transport, and intermediary activities of food products, as well as livestock trade. USAID Nawiri through SBC and gender approaches will work to balance household decision-making, workloads, and household economy to improve health-seeking behaviors related to food and expenditure choices that improve nutrition.

The primary markets located at the county headquarters are most relevant and have both wholesale and retail activities. They are easily accessible year-round given good infrastructure; Secondary markets are mainly retail markets with some wholesaling activities. The poor state of roads in disrepair or that are heavily impacted by seasonal rains and flooding limit trade in addition to increasing the risk of spoilage. Tertiary markets are mainly supplied by secondary markets, hence they tend to be small, have few retailers in the villages and are remote.

**Implications:** The need to strengthen the food system supply chains and tertiary (last mile markets) by working with traders and vendors through support for aggregation/distribution, transport, vendor, and supply networks by focusing and leveraging investments and access to finance for supply chain actors is critical. Facilitating investment in new markets to improve access and appropriate storage facilities in

strategic corridors in the counties will support food traders and vendors to stabilize supply constraints through regular bulk purchasing and transport. In designing financial inclusion strategies for market actors, it's important to take into account that women have fewer opportunities for accessing financial services, training, and credit due to lack of ownership of productive assets such as land and livestock which rest in the hands of men. Therefore, partnership with financial service providers to design innovative gender-sensitive financial products targeting market actors (mostly women) will expand their business activities. Furthermore, to ensure that food safety is not compromised in remote markets, it is important to strongly focus on capacity strengthening on food safety and quality and on post-harvest loss management.

**INSIGHT N°3: Sustainable improvements in nutrition outcomes for the most malnourished groups from food system interventions requires increased emphasis on last mile market actors to expand viable economic opportunities coupled with support to household-level economic resilience through enterprise development and income generation.**

Overall demand for fruits, vegetables, and nutritious foods is increasing, yet barriers across the food system as well as high transport costs due to the poor state of road networks, limited access to credit for working capital investments throughout the supply chain, prevent local actors from meeting this demand consistently across Samburu and Turkana counties. The HEA Study indicates that, during focus groups both adolescent mothers and older mothers in Samburu County indicated that milk and dark green leafy vegetables (kale, solanum leaves, amaranth, cowpea leaves, Swiss chard) were among the foods less available in the markets due to changing weather conditions. In Turkana County, a similar target group mentioned popular dark green leafy vegetables (kale, spinach, cowpea leaves), multiple fruits and fresh goat milk. They also talked about changing weather patterns and reducing household income, thereby constraining what they could purchase at markets.

In contrast to rapidly expanding towns in both counties, households in the last mile face exponentially higher costs to purchase fruits and vegetables and businesses have few incentives to risk transporting and selling perishable products with inconsistent market demand. The lack of good roads and transport links remain barriers to moving the produce along the chain, deterring private businesses from making investments because they fear that their connection to either input sources or markets will be unreliable. In addition, it is worth noting that inefficiency around transport is a factor of the small ordering capacity due to lack of capital/credit facilities that could smooth timely supply from secondary markets to more remote locations. Coupled with the risks of inconsistent demand and the poor state of roads and infrastructure, entrepreneurs and small traders who sell food products in both counties have limited availability and access to institutional support such as banks, Savings and Credit Cooperative Societies (SACCOS), or other service providers who could potentially provide access to finance and other business support services.

The food market systems assessment findings shows that fortification increases the cost of fortified (maize) grains, and hence the price. As a result, most households do not purchase fortified products because they are more expensive in the market. The issue, however, is cost; fortification dramatically increases the cost of fortified (maize) grains, and hence the price--the process itself is more cost-intensive, as well as the regulatory regime enforced by the Kenya Bureau of Standards for fortified food manufacturers. Most households do not purchase fortified products because they are significantly more expensive in the market.

**Implications:** USAID Nawiri can address these last mile challenges through organizing small traders/vendors including REAP participants and graduates into groups to form a network of food supply actors, creating or strengthening networks/linkages with large-scale traders in major towns within or even outside the counties, building their capacity on how to improve business efficiencies and integrating technology to reduce inefficiencies of small-scale vendors. The program will forge partnerships with private sector actors to strengthen advocacy and influence to the counties to improve on the business environment for small-scale traders for improved access to financing, apply flexible tariffs and levies as well as reducing the costs of formalizing their businesses. In addition, designing incentives for the private sector to make long-term investments for improving infrastructure is critical. REAP-supported businesses could be leveraged to serve as a model for non-REAP businesses. An accreditation program for graduating supported businesses to be able to access finance for capital investment and credit facilities through leveraging membership and shared resources will serve as an anchor to access formal business support from banks, SACCOs, and other formal institutions. In addition, small investments in challenge funds or grants to spur innovation and leverage increased access to internet services could lead to transformation in the local food system with improved nutritional outcomes.

USAID Nawiri aims to develop a private sector engagement plan that will explore options of public-private partnerships or direct market linkages to the markets especially if successful investment in crop production through the revival of the micro-irrigation project in partnership with the county government and other actors materializes. Consultations with both large- and small-scale food manufacturers indicated that market-based or market systems programming concerning food fortification would be challenging without substantial subsidies to manufacturers who have significant investment costs in equipment and inputs due to the stringent food safety standards enforced under GOK regulations. Being unable to lower the retail price of fortified maize flour would limit the viability of expanding fortified food products to rural and last-mile households through market supply channels. However continued investigations will be ongoing through USAID Nawiri to look at how fortified foods can complement other last mile market interventions

**INSIGHT N°4: Reliable and consistent productive water access is a key barrier to nutritious food production requiring increased investment in systems that support small-scale irrigation development and improved management and functionality of water infrastructure as a foundation for sustainable production of nutritious foods in Samburu and Turkana.**

Irrigated agriculture sites in both counties are in woeful disrepair, maintaining low levels of productivity and operated seasonally. These irrigation schemes are constrained from producing at larger scales due to a combination of factors: (i) Perennial water insecurity within the counties; (ii) Lack of durable infrastructure; (iii) Weak governance structures of the community-led irrigation management committees; (iv) Lack of access to quality inputs or inability to purchase the inputs (seeds, fertilizers, pest control measures, basic farming equipment; (v) Limited knowledge on modern agronomic practices in the face of challenges like climate change and water insecurity. These schemes have limited access to technical agronomic support, extension services and training on farm management, and climate-adaptive production techniques for irrigated agriculture; and (vi) Weak market linkages for their produce. From the community consultations, there is still a lot of expectation to be given freely most of the input supplies and production for subsistence use.

**Implications:** Samburu and Turkana County governments have invested in developing the potential for irrigated agricultural land use, with a potential to develop up to 3,000HA and 10,000HA of irrigated

agricultural lands respectively. USAID Nawiri will partner with the County Government and other partners to identify small-scale irrigation schemes with the most potential to leverage productive outcomes either those that are currently operational or that are identified within county development planning for future establishment. In addition, investments in strengthening linkages of producer/farmer groups and agro-pastoral communities with improved (private and public) agronomic extension, marketing linkage support by partnering with buyers, facilitate tripartite agreements and partners with private sector provides last mile supply of affordable crop and livestock input and services for production and post-harvest management.

## **CONCLUSION & PRIORITY AREAS FOR ONGOING LEARNING**

Food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Food markets and their governance in Samburu and Turkana counties play a significant role in food security. Investment in the graduation model aimed at improving the socio-economic status of the poor and very poor is informed by the fact that market purchase is the most important way of sourcing food by these groups in these counties, representing 60-70% of total food needs. Therefore, sustainable reduction on persistent global acute malnutrition (P-GAM) will require a multi-pronged approach that includes strengthened capacities of the food market supply chain actors and systems actors to enhance food availability and access to nutritious foods for the poor and very poor without disruption from shocks and stresses. This further requires improving the resilience capacities of households to improve their livelihood outcomes and increase household income (purchasing power) that will have a direct impact on increased demand for nutritious foods so that supply chain actors have more consistent demand which would be a natural market incentive. Improving access to nutritious and diverse food at an affordable price, alongside supporting livelihoods will contribute to a balanced household economy (income/expenditure) through production and purchase of nutritious foods and diverse diets and will form a key component of USAID Nawiri's resilient livelihoods approach to sustainably reducing malnutrition.

### **PRIORITY AREAS OF LEARNING**

- In partnership with the private sector, county government, and other stakeholders, ongoing exploration of cost-effective options for strengthening local markets to increase local availability of nutritious foods for poor households will be critical.
- Extend learning from the resilience design (RD) pilot and expand (integrate) activities to include food production for household consumption or markets. The resilience design approach, more commonly referred to as agro-ecology, includes proven agronomic practices meant to restore and strengthen ecological processes (nutrient cycling, water retention, etc.). Based on positive feedback and requests to include food production by communities and county governments, USAID Nawiri will monitor whether RD is a practical approach to increasing food production in the ASALs without causing longer-term negative consequences experienced in some dryland farming systems.
- Food Fortification: Given the potential impact food fortification can have on malnutrition at scale, investments to identify the current systemic constraints industry players face to shape an advocacy plan on the same. In addition, through continued food market monitoring explore how fortified foods can complement other last mile market interventions.

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