

Market Systems Resilience Assessment Report

Milk, Cowpeas, Leafy Greens

Baidoa, Somalia – April 2023

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1. Executive Summary

This report looks at the market systems resilience of three market systems in Baidoa, Somali; namely milk, cowpeas, and leafy greens. These three markets were selected based on a mapping exercise of locally-available nutritious food. The assessment ran from April 5-20, 2023.

Building on market systems development (MSD) approaches, this assessment uses a Market Systems Resilience (MSR) lens to gain insights on the capacity of the three market systems to absorb, adapt, or transform in the face of multiple shocks and stresses. It does this by interrogating eight MSR domains (four structural, four behavioral): Connectivity, Diversity, Power Dynamics, Rule of Law, Cooperation, Competition, Decision-Making, and Business Strategy. In addition, two resource related elements have been included in the analysis—access to finance and market infrastructure—to form a clearer picture of the resilience capacity of these markets.

Three key messages from the assessment are:

Connectivity among market actors is very high across all three market systems. Market actors communicate freely both horizontally (e.g. farmer to farmer) and vertically (e.g. farmer to trader). Trust is based on culture, religion and . Somalis find dignity in being helpful, hospitable and charitable to others with everything (money, food, time, personal connections, etc.). Hence, strong relationships are viewed as an important element of business and trust is high between many market actors. This finding is important because it is possible that markets can be used as a mechanism for early action in response to specific shocks or to encourage innovation and behavior change. Some of the mentioned effects of drought include devastated crop production which also made it near impossible for herders to find fodder for their animals. This led to reduced milk volumes in the market and increased prices due to demand that outstrips supply. As producers (who are also consumers) lose their livelihoods to drought, coupled with the high food prices in the market, they can barely afford to purchase food.

Cowpea traders mentioned good connectivity as a survival support factor. This is because they would be able to get supplies from distant markets e.g. in Ethiopia and Kenya, even during periods of drought.

While the drought was the most frequently cited shock, volatile prices and lack of storage (as appropriate to each market system) are also having a negative impact on market systems.

The need to improve market infrastructure (e.g. designated market stalls & shades, sanitation amenities, storage/cold facilities in Hanano, Bukriyey, Dugandug village markets, access roads, etc) across all market systems (and/or provide the financing to allow market actors to do this) is clear, and addressing these issues at multiple levels has the potential to improve food security and contribute to stabilizing prices.

There is a need and an appetite for diversification of food products. Competition is not strong enough to naturally bring out innovation and, given the multiple shocks of drought and conflict, market actors do not have the resources to invest. But supporting diversification (increased processing, drought-resistant crops) would improve market resilience significantly.

List of Abbreviations

AS-	Al Shabaab
BRCiS -	Building Resilient Communities in Somalia
CAHWs-	Community Animal Health Workers
FEWSNET-	Famine Early Warning Systems Network
FSP-	Financial Service Providers
HH-	HouseHold
MSD -	Market Systems Development
MSR -	Market Systems Resilience
NRM-	Natural Resources Management
WFP-	World Food Programme
FAO-	Food and Agriculture Organisation
USAID-	United States Agency for International Development
VSLA-	Village Savings and Loaning Associations

Glossary

Definitions for the most common terms and concepts used in Market System Resilience (MSR) approaches. It is a living and growing glossary as the terminology around MSR is changing continuously: many terms have multiple definitions and some are even actively contested.

Inclusive market systems: market systems that engage and benefit a range of actors including the poor, women, youth, ethnic minorities and/or other marginalized groups who are often excluded — or even exploited — by traditional market systems.

Innovation: new or improved behavior, practice or technique adopted by a market player as a result of programme intervention that confers a benefit to the poor. These can be goods or services and/or new roles that support a different way of working.

Market map: a framework used to visualize the relationship and linkages between all of the different actors within a market system.

Market system: multi-function and multi-player arrangement comprising the core function of exchange and the supporting functions and rules which are performed and shaped by a variety of market players.

Market systems approaches: approaches to poverty reduction based on the central idea that the poor are dependent on market systems for their livelihoods. Therefore changing those market systems to work more effectively and sustainably for the poor will improve their livelihoods and consequently reduce poverty.

Market systems resilience: the ability of the market system to draw on system-level resources—such as social safety nets, early-warning systems, emergency relief systems—in the face of shocks and stresses.

Resilience: market players can adapt models and institutions to continue delivering pro-poor growth as the market and external environment changes.

Supporting market system: market systems whose performance has a direct influence on how the market players in the principal market system behave and perform. Supporting market systems have their own core function, supporting functions and rules.

Thin markets: markets that are relatively uncompetitive in which there are few market players and/or a large number of 'absent' supporting functions and rules.

2. Methodology

a. Selection of Market Systems

A preliminary mapping exercise of locally available and utilized nutritious foods in Baidoa was conducted to help identify the three main nutritious foods that were the focus for this study. A list of the identified foods and food products was developed, which included: sorghum, sesame, maize, mung beans, carrots, milk, onion, okra, tomato, banana, paw paw, lemon, grapefruit, sweet pepper, guava, watermelon, meat, mango, sunflower, spinach, lettuce, groundnuts, bottle gourd, sweet potato, pumpkin, coconut, rice, eggs and cowpeas. Seven criteria were then applied to select three key locally produced nutritious foods to be supported and promoted. The criteria used included:

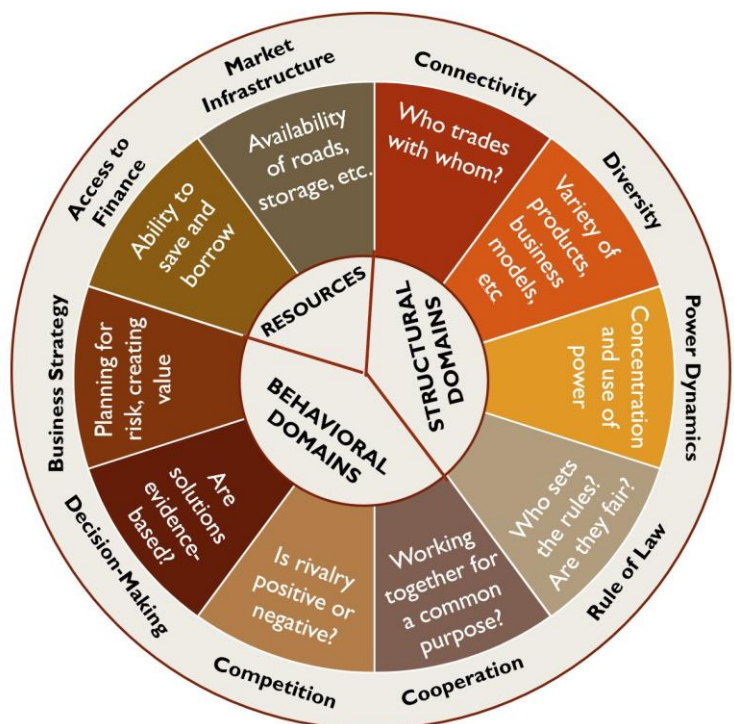
- Good local production potential i.e. locally grown nutritious food products.
- Locally accepted and accessible by a majority of the locals.
- Require low capital for investment in production.
- Fast maturing crops i.e. Short season.
- Potentially capable of developing secondary markets.
- Good bulking/ aggregation potential.
- Show resilience to various shocks (drought, floods, socio-economic crises, etc.)

Based on the evaluation of this criteria; milk, cowpeas and leafy green vegetables were selected as the three market systems of focus in this study.

b. Market Systems Resilience Approach

The Market Systems Resilience (MSR) Approach recognizes markets as 'complex adaptive systems' and has been [championed by USAID](#) for several years. It is intended to support analysis and program design, so that market systems are better able to manage shocks and stresses, meaning market systems function more effectively and therefore support household resilience. While MSR is relatively new and involves complex concepts, MSR is best used by combining insights from multiple domains to understand their interplay within specific contexts.

MSR seeks to expand the emphasis on market-related shocks (not just natural or conflict related shocks) in order to understand the risks faced by businesses and the system overall. This



can shift how programs prioritize engaging with market actors on specific issues.

In this assessment we looked at the four structural domains: Connectivity, Diversity, Power Dynamics, Rule of Law; as well as the four behavioral MSR domains: Cooperation, Competition, Decision-Making, and Business Strategy. In addition, we added two resource-related elements to the analysis—access to finance and market infrastructure—to form a clearer picture of the resilience capacity of these markets.

For each of these elements, the assessment team used the field data to assign a score on a scale of 0 (no evidence of this element) to 5 (element is functioning positively and at a high level). The qualitative data from field work was coded (or 'tagged') to the relevant domain, the market system, and the type of respondent. This added rigor to the data analysis and made comparisons during scoring easier to do. Guidance on comprehensive definitions for each domain and appropriate indicators for domains was drawn from USAID's [MarketSystems Resilience: A Framework for Measurement](#), and contextualized to the Somalia context. BRICS may find it useful to use these scoring charts as a baseline for market systems work.

c. Field work

The team visited markets in Baidoa and the surrounding village markets (Hanano, Bukriyey, Dugandug) which serve a section of Baidoa population and depend on the Baidoa main market for supplies.

In total, eight Focus Group Discussions and seventeen Key Informant Interviews were conducted across all market systems (actors and non actors), with Somali enumerators (3 female and 3 male). Each focus group discussion consisted of six members with similar characteristics (e.g. same function and market system). A purposive sampling approach was used to identify key informant interviews (KII) respondents based on the market mapping for the three market systems. A snowball sampling approach was also used to help in understanding particular market domains.

Each interview was conducted by two personnel (an interviewer and a note taker) using the designed question guide. All interviews were recorded and uploaded to a cloud-based storage system which enabled the supervisor to track progress and monitor the quality of the information being received on a daily basis.

3. Key Findings – Across All Market Systems

Given the nature of MSR analyses, it is not surprising that the three market systems—milk, cowpeas, leafy greens—showed nearly identical results across the assessed domains. Some findings that were consistent across all three market systems were:

- 1) **There were 215 mentions of shocks throughout the interviews, and drought recorded the highest number of mentions in the responses.**

However, prices (including volatility and high food prices), as well as lack of storage facilities (as appropriate to milk, cowpeas, or greens) were also mentioned frequently, as were market access issues due to poor roads, security, and flooding. In regard to drought, some of the market actors mentioned diminishing grazing land and pastures due to lack of rain as a challenge, ultimately leading to a decrease in milk production. One trader mentioned that during the drought, it is difficult to get milk from the producers because the livestock herders move to where they can get water and pasture and they sometimes may

Shock/Stress	Frequency of mention
drought	76
prices or inflation	56
lack of storage	29
pests/animal disease	19
roads	16
security	8
floods	7
fuel price	4
Grand Total	215

move very far into the distant remote places from town and reaching them becomes difficult thus making milk transportation and delivery a hard task.

- 2) **Across all market systems there was a clear message that the drought reduced income.**

Producers experienced this as a lack of products to sell, whereas businesses (traders, retailers) experienced this as reduced consumer demand (due to both higher costs/prices and lower household income). However, data collected through the diversity domain indicates that access to family and business networks and the diversified income sources are key resilience capabilities for market participants to recover from market shocks such as demand changes due to interruptions in the end-markets or supply chains. Also, one other behavioral feature the traders mentioned to have adopted in response to reduced purchase power/demand; particularly in the milk market system is the development of a schedule amongst themselves on when each of them should visit the village to collect milk. Traders would therefore fetch the milk from the village in-turns giving each a chance to earn a living.

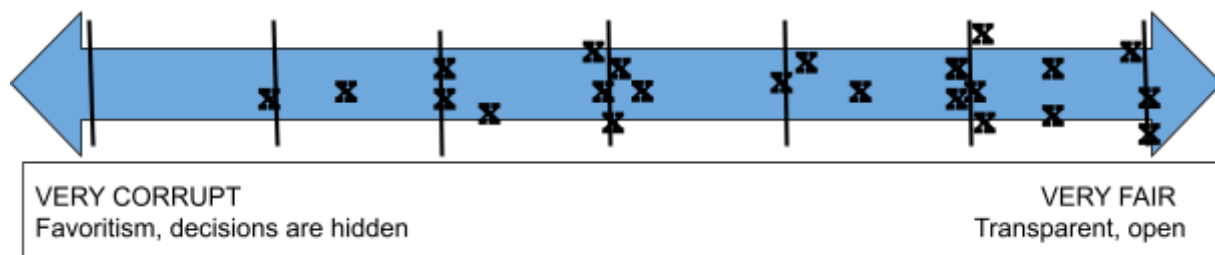
- 3) **Access to Finance:** Market actors frequently borrow from each other (or allow slow payment/delayed payment, e.g., take something today, and I pay for it next week). This appears to be happening at nearly every level (e.g. farmers allow traders to pay after sales are made, traders allow retailers to pay after sales, credit is given to consumers, etc). This is not recognized by market actors as borrowing (in the same sense as a bank loan), but is nevertheless a form of value chain financing. Providing financial support to key market actors for the activities that would strengthen market resilience (e.g. improved storage, pest management, water management improvements) could be a way to improve household resilience and potentially manage inflationary pressures (as it would contribute to stabilizing

the supply of goods). Across all markets, respondents believe that the ability to borrow (formally and informally) depends on having good connections and being perceived as trustworthy; there was a very consistent message that clan relationships do not figure into the ability to borrow. Most respondents do not access formal financial services, but believe it to be difficult to borrow due to the need for collateral. On the other hand Financial institutions have a limited understanding of the conditions under which smallholders can become and stay competitive as well as the conditions under which inclusive value chains become resilient. Financial institutions perceive that lending to smallholders is risky and would incur high transaction costs.

- 4) **Connectivity is very high.** Market actors of all types and geographies communicate freely both horizontally (e.g. farmer to farmer) and vertically (e.g. farmer to trader). Good communication is viewed as important (for business and social reasons), and there are high levels of trust between different market functions. This finding is important because it is likely that market systems can be used as a mechanism for early action in response to specific shocks or to encourage innovation and behavior change.
- 5) **Because of the high level of Connectivity, it is unsurprising to find a relatively high level of Cooperation as well.** Cooperation is of course best when it adds positive value to the market environment—such as working together to advocate for a policy change—rather than cooperation for negative purposes such as collusion or price fixing. Examples of cooperation in the market systems assessed include: informal conflict-resolution mechanisms, the self-organization of transporters in the milk market, and the existence of cooperatives. Cooperatives are formed by at least 5 members and not more than 20 with a common goal in their areas of business interests whether farmers or livestock keepers. It is therefore built on a common interest and open to others with a similar interest. It has its own leadership and committees (finance/conflict resolution etc) with agreed by-laws and regulations including penalties. The cooperatives are registered with the relevant ministries including the ministry of trade and commerce. Their common interest is to thrive together in their own business and support each other.
- 6) **The market systems all show a Reactive Orientation** (as compared to “proactive”), this means that the markets are able to adapt to shocks and stresses, but have limited ability to transform due the limited *Diversity*, informal *Rule of Law*, and severity of multiple, layered shocks and stresses. While there may be individuals who are innovative and proactive in their decision-making, the market systems as a whole are not. For example, study results indicated that the cowpea market system is more resilient within three key domains: business strategy, diversity, and connectivity. Overall, however, both market systems are only somewhat resilient, indicating a problematic degree of vulnerability in an environment rife with shocks and stresses on many fronts.
- 7) **Respondents were clear across all markets that there are no significant Power Dynamics** (e.g. monopolies, bias against particular groups) within food markets, although Al Shabab does negatively influence market operations at times (see detail in the milk market system below).

Whether asked in groups or individual interviews, across all three market systems respondents reported that anyone could do business (e.g. male/female, any clan or sub-clan) and that access to finance was related more to good relationships and being known as trust-worthy than having any specific type of market power.

- 8) **Rule of Law:** At the macro level, Somalia is of course a context of prolonged conflict. However, in the markets surveyed, elders and cooperative groups provide conflict-resolution mechanisms when there is a dispute between market actors; and these mechanisms are widely trusted by both men and women respondents. There are concerns about bribes required (also thought of as being “taxed twice”) by Al Shabab, but largely government actors are seen as a positive element keeping markets clean and collecting (appropriate) taxes. When asked how much corruption existed in food systems in Baidoa, respondents placed their marks as seen below. This shows that while it is not universally true, most people believe that the market is neutral or more fair than corrupt. This perception did not appear to be affected by function in the market system (e.g. producer vs trader) nor did it appear to show any patterns related to the specific market system.



Despite this positive perspective from respondents, it is worth noting that on [Transparency International's 2022 Corruption Perceptions Index](#), Somalia scored 12 on a scale from 0 ("highly corrupt") to 100 ("highly clean"). Somalia ranked last among the 180 countries in the Index (where ranking first is perceived to have the most honest public sector). Therefore the findings from this assessment may relate to private sector perspectives, Baidoa-specific perspectives, or biased responses.

4. Key Findings – Milk

a. Overview

The main milk type available for the market is camel milk supplied from rural areas by the producers, followed by cow milk and goat milk largely supplied from the rural areas. During the rainy seasons, these types of milk are produced and supplied daily in large quantities to Baidoa. During the dry season, the milk production reduces due to lack of water and pastures, transport distances increase (and therefore costs) as livestock migrate to other areas in search of water and pasture. The consumption of imported milk powder increases during the dry seasons due to a decrease in fresh animal milk availability and subsequent increase in price. [FEWSNET shows high price differentials](#) between various surveyed markets, underscoring the price volatility described by market actors.

The most frequently mentioned challenge for the milk market is the lack of refrigeration and cold storage. This has a serious impact on the quality, price, and availability of milk, given how quickly milk spoils in the Somali heat. Other challenges in the milk market system include: poor roads (especially in the rainy season). During dry seasons the traders have to traverse long distances into the remote areas to collect milk. During rainy seasons, the roads are impassable. The other challenges include Al Shabab controlling the movement of milk, sometimes physically cutting off supplies to end-markets and lack of access to finance.

The challenges in the markets that are due to the drought have a gendered impact and an impact on marginal groups. For example, during the drought, the male milk transporters said that they use their motorcycles to transport people and other commodities to and from the rural villages in order to make an alternative income unlike female milk sellers in the main town who tend to become idle since there is no milk being supplied for selling. Also, data focused on market participants' competitiveness and connectivity indicate that both the cow pea, leafy vegetable and milk market systems are vulnerable to shocks and stresses due to high barriers to entry of marginalized groups, especially women and disadvantaged groups. As a result, concentration of social and financial capital among a subset of market participants threatens the ability of the whole market system to bounce back from shocks.

b. Market System Structure

The Milk market system begins with fodder production. Fodder production is a lucrative and underdeveloped commercial opportunity in Baidoa Somalia, with significant growth potential; contract farming (producing for the market) can easily be replicated across cooperatives in riverine and agro-pastoral areas. Most of the farmers reported that during the rainy season they grow a type of grass which they referred to as Sudan grass "alfalafa". This type of grass is stored for feeding the animals during the dry seasons and sometimes sold when there is surplus or the storage space is not enough at the farmer's level. The prices change such that during the rainy seasons, it is cheap and expensive during the dry seasons when the demand is high. It is packaged in a polythene bag and stored for future use.

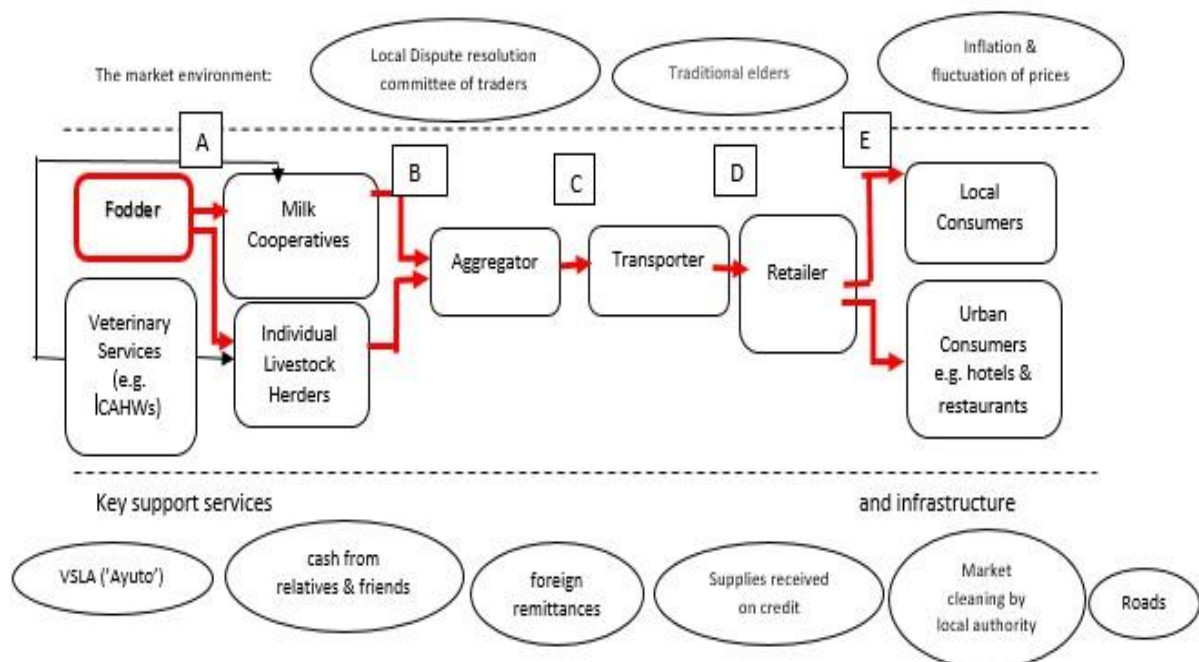
For a long time, there have been no well equipped and functioning veterinary centers in Baidoa offering animal health services. However, this situation is improving due to the intervention of humanitarian and development agencies (such as NRC, through the BRCiS project), there has been a training of Community Animal Health Workers ([CAHWs](#)) selected from the rural villages. They are provided with basic livestock treatment skills for instance treating seasonal livestock diseases with the State Ministry of Livestock actively facilitating the capacity building process.

Milk production is undertaken by livestock herders and is either bulked under a dairy cooperative arrangement where it is collected by transporters or it can directly be sourced from the individual livestock herders by the traders/transporters who then deliver it (via

motorcycle) to retailers in the urban center. Men are generally in the role of suppliers or transporters, while women dominate the retail end. Market retailers generally buy 8 or 9 Jeri cans of milk (900-1000 Somali shillings each) from transporters daily. Bay cooperative is such an entity in Baidoa and is made up of 20 associations of farmers and livestock keepers registered under one umbrella called Bay cooperatives. Each association under Bay cooperatives is registered with its relevant ministries and performs key roles such as representation, coordination, facilitation, registration, advocacy and campaign etc.

Cooperatives work closely with financial institutions such as the banks where they make their savings from members' contributions and in turn borrow money from the banks to finance and manage their businesses.

The lack of a milk processing unit in Baidoa (or the surrounding areas) limits the potential growth of the sector. Milk spoilage is one of the challenges mentioned, and especially so during rainy seasons when there is increased production and roads are impassable, villages inaccessible. Milk processing will not only provide a ready market for milk producers and address milk losses, but also provide more economic activity opportunities locally e.g. decent jobs, business opportunities along the dairy market chain support system, etc. A milk processing unit would mean that milk is less likely to be left unsold and/or spoil. Firstly because the processing unit would have refrigeration and then because milk would be converted into, for example, powdered milk, so it would not be 'wasted' at the end of the day if left unsold. Processors are also sometimes able to increase production and quality through purchase contracts because the herders are willing to invest more in their animals (e.g. fodder purchase) if they know their production has a guaranteed sale. The Somalia region of Ethiopia has examples that may be useful to BRiCS.



Main Pain-points in the Milk market system due to drought (based on the Milk market system map above).

Pain Point Area	Nature of Pain	Actor Affected	How the actor is affected
A	- Reduced fodder	Herders	- Low milk volumes - Reduced/loss of livelihoods due to the dying and loss of animals/livestock - Low incomes
B	- Long distances to aggregate milk	Aggregators	- Has to cover long distances to collect milk - Increased cost of doing business
C	- Long distances between farmers and retailers - Milk losses/spoilage during transportation	Transporters	- Has to cover vast distances to get milk to the retailers in town - Increased cost of doing business
D	-Reduced or no raw milk supplies	Retailer	- Reduced or lost livelihoods - Low or no income
E	- Reduced or no raw milk	Consumers	- Food insecurity - Poor nutrition

In terms of market environment: there are good local dispute resolution mechanisms; taxes are perceived to be high by most market actors with taxation conducted by government at the markets as well as by the local militia at some ad hoc roadblocks, hence double taxation; there is manipulation of the market by Al Shabab (by preventing the movement of milk); and there are gender norms around who holds which functions in milk markets. Other than the issue of AS, it is not perceived by actors that any of these norms impact the proper functioning of the market.

With regards to key infrastructure, roads are poor, and often impassable during the rainy season, leading to milk losses, especially in villages with poor connectivity. This increases the cost and lowers the quality of the milk provided.

Most impassable roads during the rainy season include the:

1. Baidoa-Midow-Awdinle-Berdale road
2. Baidoa-Midow-Awdinle-Qasadere-Ufurow road

There are savings groups (VSLA or 'Ayuto') and informal value chain financing available to market actors, as well as support such as foreign remittances. However, some financial institutions expressed concern about loaning to milk retailers. Officers from financial institutions such as IBS and Amal banks were interviewed and have expressed preference to farmers

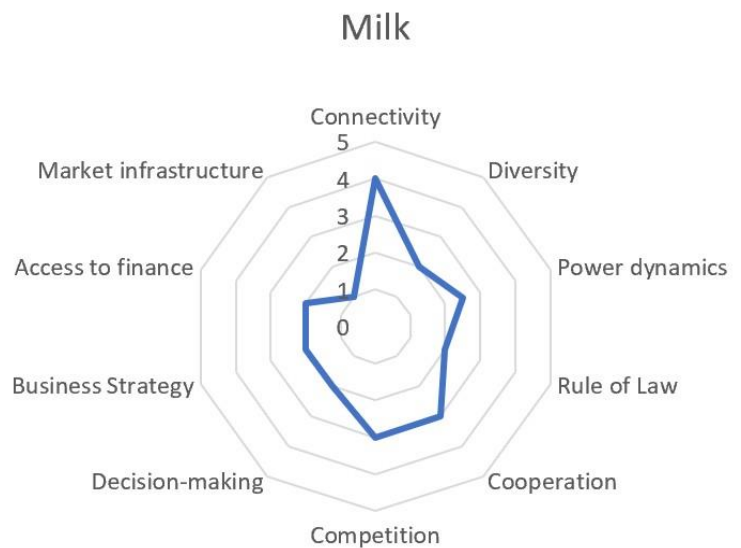
(producers of cowpeas and vegetables) at the expense of livestock herders (milk producers/retailers) when it comes to giving loans. They said that in most cases crop farmers possess lands which can be used as collateral while herders do not, especially when the drought persists they move from one place to another and most of the animals die. Infrastructure in this market system includes roads and transport vehicles (usually motorcycles). Roads are often impassable during rainy seasons, leading to milk losses in the villages due to poor connectivity between the producers and the off-take market besides increasing the cost of marketing the produce.

Retailers are organized and are members of associations which are entirely under the cooperative. Retailers do a one-off business to support their households from the income they make. Based on their ability to buy or sell, they are not limited to one producer as their only source. They also sometimes borrow stock products on credit until such a time when they repay the money.

c. MSR Analysis

As discussed above, the MSR assessment shows that in the milk market system there is an extremely low level of *Market Infrastructure* (score=1): animal husbandry is poor, making production volumes lower, milk is not tested for quality at collection points, jerry cans (unrefrigerated) are used for transport, no/very limited refrigerated storage is available, and there are no milk processors in the Baidoa areas. In the rainy season, delays caused by transporters struggling with poor roads also reduce the supply and freshness of milk.

Diversity is also low (score=2) in that dairy products are limited (fresh or soured milk from cows or camels), and that there are no milk processors (for example to produce dried milk powder, which is currently a product purchased only by the better-off due to cost). The market system is characterized by small producers (with 4-15 animals, for a poor HH these are largely shoats and cows), informal transport and



trade arrangements, and there were no medium or large businesses found in the market system due to inadequate management skills and government policies (e.g. heavy taxation) that are main obstructions for small and medium-sized enterprises in Somalia. The low purchasing power in the market systems partly as a result of the shocks also acts as a dis-incentive for medium to large investment in the market systems

Competition in the milk market system certainly exists but does not appear to be high (score=3). This is in part due to the low volume of milk currently being produced—demand far exceeds availability (herd sizes are [reported at 30 and 70 percent below average](#)). At the retail level, market actors compete based on relationships and value-addition to customers (customer credit, having a variety of products, being convenient, etc..) building on *Connectivity* (good customer relationships) and driving the practice of providing customer credit. As one respondent noted: “*The price of the milk is fluctuating day after day and in such instances, “we remain committed to do our best not to harm one another in seeking profits”*”. Collection of milk from the villages by traders in-turns, the reverting of milk transporters to other income streams (e.g. ferrying of people and other goods) during drought that causes reduced milk production levels are some of the adaptation behavioral examples. The relative lack of competition may be stifling innovation somewhat, although innovations required in this market system generally call for a level of investment that is beyond the capacity of small producers—insulated boxes or milk cans for transport, solar fridges, etc. would provide additional value in the market and make some market actors more competitive (by increasing the freshness of the product and stabilizing supply somewhat). Milk cans for transport apply to producers. Insulated boxes (or refrigerated trucks, though unlikely) would be for transporters. There are no quality standards formally in place, and retailers and consumers do not appear to differentiate on quality. The increased cost of fuel and decreased production of milk is also having a significant impact on prices, impacting customer sales. Availability, affordability, accessibility, is what is helping them make purchasing decisions.

There were more stories of corruption in the milk market than in other markets (*Rule of Law*, score=1). Some transporters indicated that Al Shabab forbids the ‘export’ of milk from certain areas. It is not impossible for transporters to get around this issue, but the reports indicate transporters are frequently forced to pay significant bribes in order to move milk to certain locations. There were also reports of suppliers paying transporters to divert their delivery to a different location, because the supplier would be better paid in the second location than in the first location where the original order was made. Livestock herders live in remote areas controlled by AS and that gives AS the opportunity to control the supply of milk to other places like Baidoa which is in the control of the government forces. AS have the tendency of putting strict measures in the movement of people and goods from areas where they control and milk is not different given the conflict/political differences in areas either controlled by the government forces or their affiliates.

Most affected roads by insurgency (AS)

1. Baidoa-Salbuy-Seydhelow-waney road
2. Baidoa-Nunei-Danbalka-Burhakaba road
3. Baidoa-Midow-Awdinle-Qasadere-Ufurow road
4. Baidoa-Makuda-Gofgadud Shabellow

The evidence on *Decision-making* (score=2) and *Business Strategy* (score=2) show that they are linked: decision making is often based on discussions with other market actors and business strategies (to the extent they exist) are focused on generating value for customers such as discounted pricing, quality products, etc (linking to *Connectivity*). Market actors do not appear to be making many decisions based on evidence or data (such as price forecasts or weather data)—there is still a strong sense of “we have always done it this way” in respondent responses. Without this data, and a clear understanding of how to apply the data to their decision-making, business strategies are naturally limited. This also influences appetite for innovation and the use of available finance.

5. Key Findings – Cowpeas

a. Overview

Cowpeas are a major crop—alongside other food crops such as sorghum and beans—in Baidoa and there is relatively high demand for it as compared to other pulses. In the past, the [largest trade flows were from the Baidoa area to Belet Weyne](#), with some also moving down to Mogadishu or into Ethiopia and Kenya. Now, locally produced cowpeas are reportedly supplemented by imported beans from neighboring countries as a drought adaptation strategy. Prices generally fluctuate seasonally, following supply trends; the price of cowpeas is low after harvest due to more supply in the markets and high before it is harvested as the demand for available cowpeas rises. In [March 2023, FEWSNET](#) showed that for most areas the prices were relatively steady, though higher than last year (2022); the exception was found in areas on the coast where prices dipped significantly in Dec/Jan, but seem to be recovering.

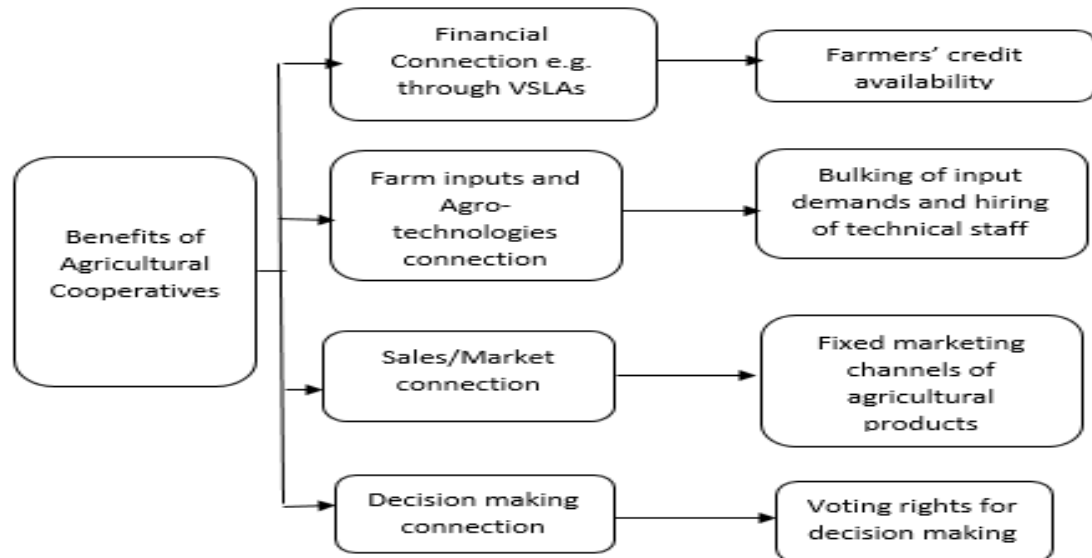
Lack of appropriate storage—to prevent pest infestation and manage the timing of sales after harvest—is the greatest issue facing cowpea producers. Water management, both irrigation infrastructure and protection from floods was another critical issue mentioned frequently by those interviewed. Other challenges mentioned by market actors across the cowpea market system are: impassable roads during the rainy season; access to inputs such as pesticides and equipment; and fluctuating and high prices.

b. Market System Structure

The cowpea market system begins at the agro-dealer; the supplier of the requisite farm inputs (seeds, fertilizers, etc). Most of the farmers reported that there is no local seed production in Baidoa and even in Mogadishu. For the vegetable seeds, they are imported and are sold at the local shops. But for other seeds (cowpeas, sorghum, maize and other staples), they recycle and use their own seeds. Within the cowpea market system in Baidoa, there are also on-farm service providers such as tilling tractors, and spray service providers in crop pest and disease management.

Cowpea producers are generally small scale, although there are a few larger farmers (with about 3ha) who produce on a larger scale. There are also cooperatives whose members are the small scale producers.

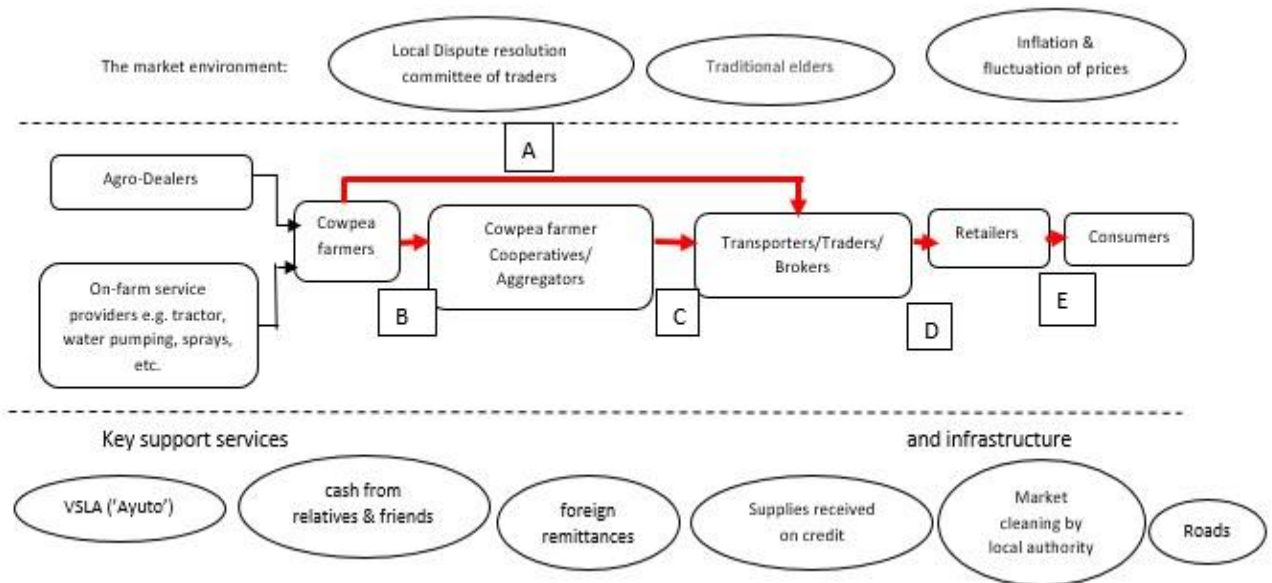
The cooperatives unite single growers to boost their cowpea productivity as they increase yields. Cooperatives enable farmers to own and control, on a democratic basis, business enterprises for procuring their supplies and services (inputs), and marketing their products (outputs) with great efficiency. They also provide loans and financial services to members e.g., through the VSLAs. The VSLAs are organically and internally set up by cooperative members and it serves a common need of all the members in addressing challenges related to credit access.



Both the individual cowpea farmers and farmers in cooperatives sell to traders or brokers who then supply the retail outlets in the urban locations.

Transporters are important because they are the ones who logistically move the produce from the farmers based in the remote villages to the markets in the urban centres.

Traders then sell to retailers. There are around 20 retailers in the main Baidoa market, who buy from around 5 suppliers (traders) each and sell to over 100 customers per week. Customers include individual buyers in the local market and/or institutional buyers such as hotels and restaurants.



Main Pain-points in the Cowpea market system due to drought (based on the Cowpea market map above).

Pain Point Area	Nature of Pain	Actor Affected	How the actor is affected
A	- Reduced cowpea yields	Farmers	- Low or no income - Reduced/loss of livelihoods due to low or no cowpea productions
	- Reduced or no cowpea supplies	Transporters	- Low or lost livelihoods
B	- Reduced or no cowpea supplies	Cooperatives/Aggregators	- No/Low business hence no/reduced incomes - Increased cost of doing business due to sourcing from distant markets
C	- Reduced or no cowpea supplies	Transporters	- Low or lost livelihoods
D	- Reduced or no cowpea supplies	Retailers	- Low or lost livelihoods
E	- Reduced or no cowpeas	Consumers	- Food insecurity - Poor nutrition

Important elements of the market environment are the local dispute resolution committee of traders set up by traders to help resolve any emerging disputes among themselves.

Further, there are the traditional elders who also assist in dispute resolution. Other elements of the market environment are the inflation and fluctuation of prices.

Key infrastructure includes roads and the physical markets where the cow peas are sold. Key support functions that exist in the cowpea market system include financial services and loans through the VSLAs, cash from friends and relatives including foreign cash remittances as well as trader supplies from producers on credit. Financial inclusion via formal FSP seems to be rare across all the cowpea market system due to lack of accurate documentation and record keeping at the business level, lack of collateral, stringent regulations e.g., need for guarantors, etc. Cooperative members form the membership to the VSLAs and provide members with the opportunity to borrow money against their savings. It is however not the main source of finance as banks, relatives and friends also provide loans in addition to MFIs where members of the VSLA groups save.

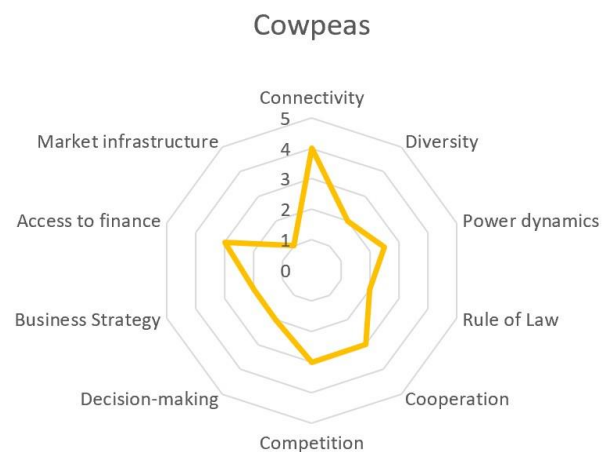
c. MSR chart

Market Infrastructure - there is a severe shortage of storage at both the farmer and aggregator (trader) level. This increases the potential for post-harvest losses and makes it more difficult to manage demand flows. (score=1)

Access to Finance: Cowpea producers are able to get loans from family, through savings groups, or through the cooperatives VSLA schemes. However, traders reported that they had trouble getting access to finance due to lack of connections (score=3). Nevertheless, traders also provide financing to producers, but then struggle when farmers are unable to pay back these loans. This means that traders' cash flow is restricted and they are unable to purchase cowpeas (for aggregation) from suppliers.

Traders also seek financing from producer cooperatives through delayed payment to the farmers and cooperative members. Addressing financial challenges at this point in the chain could resolve multiple issues for a number of actors providing a high potential leverage point. Traders feel they don't have any cushion if something goes wrong, and this is their main motivation for seeking additional finance from cooperatives and banks.

Diversity: While it is clear there are no informal rules preventing someone from starting a business in this market system (whether male or female, or of a different clan), there is limited *Diversity* (i.e. in addition to cowpeas, most farmers don't grow a wide variety of crops) in the products grown by cowpea farmers (leading to limited resilience). Seeds are brought in from as far away as Mogadishu, and there is an appetite for drought-sensitive crops, so activities to expand the *Diversity* of crops should be explored. In addition, the



majority of businesses are small (whether producer, trader or retailer); some *Diversity* is added by the existence of cooperatives but for the other reasons noted the score for *Diversity* remains low (score=2).

As reported with the other market systems, there are no quality standards for cowpeas. This affects *Competition* (score=3) because with standards in place, it could eventually lead to larger contracts such as WFP local purchase and/or export. Use of improved production methods and acceptance of standards could lead to increasing both income and food security. However, consumers are very price sensitive and may not be willing to pay more for improved quality; especially given that increased production costs have already pushed up retail prices, and cowpeas are generally more expensive than other pulses. As in other market systems, *Competition* is very much linked to *Connectivity*, as relationships are very important in trade. Farmers may get inputs from as far away as Mogadishu, while traders often buy from producers in other districts, or even bring supplies in from Kenya and Sudan. There are no local agro suppliers and farmers tend to get things from Mogadishu. Farmers reported that they buy their supplies from Kenya and other neighboring countries because they lack an alternative source where they can get the supplies from. This is not determined by the price of the commodities but rather the availability of the product in other countries.

Rule of Law (score=2): Market actors provided many reports of mechanisms to address conflict resolution through existing committees or elders. Yet, while market actors report high levels of fairness in the market, they also felt formal mechanisms (such as police) were more likely to be circumvented (with bribes) than informal ones, and retailers provided examples of suppliers selling their goods to others for a better price. Traders frequently complained about high taxes. Market actors consistently indicated that no one dominates the market (*Power*, score=2.5) and that prices are transparent and known by all market actors.

Decision-making is most often done jointly, with inputs from spouses and other family members such as parents. It does not include a high level of evidence or input beyond the family unit. The existence of a cooperative and some larger farmers associations affiliated to the cooperative, offer the opportunity to provide positive examples to other, smaller or less-well connected producers (score=1). While market actors interviewed seemed to have a 'value generation' attitude towards their business and a longer term perspective (*Business Strategy*, score=1), those not associated with the cooperative did not show any evidence of strategic thinking. However, with capacity building, there may be an opportunity to incorporate "nutrition-sensitive market approaches" into their work, as the nutritional benefits of cowpeas are recognized.

6. Key Findings – Leafy Greens

a. Overview

Market actors in this market system frequently pointed out that there is no 'vegetable market' in Baidoa, by this they mean there is no set location for trading of vegetables, meaning sales are ad-hoc on the side of the road. Market actors felt their produce would last longer and they could sell more, in more hygienic conditions, if an appropriate space with shade was provided. Further, to address vegetable losses due to perishability and lack of storage infrastructure, market actors (particularly within the vegetables and milk market systems) felt that agro-processing and value addition will be a suitable solution that will also generate more livelihood opportunities for local communities.

Other challenges mentioned by market actors across the leafy vegetable market system are: inaccessibility to inputs such as quality seeds, perishability and crop loss, pests and diseases, impassable roads during the rainy seasons, lack of security at the farm, distribution channels and in markets due to conflict, unauthorized bribes and extortion. Lack of access to finance, rampant inflation and unstable market conditions coupled with very low levels of income and purchasing power which inhibits purchase of vegetable produce were also mentioned. Women who sell vegetables diversify their business commodities and sell fruits such as watermelon and other vegetables such as potatoes especially when the green leafy vegetables supply is low or no supply at all.

The conditions to offer loans for market actors, such as guarantor & collateral was found to be a significant impediment to access to loans, especially for Women and Youth.

b. Market System Structure

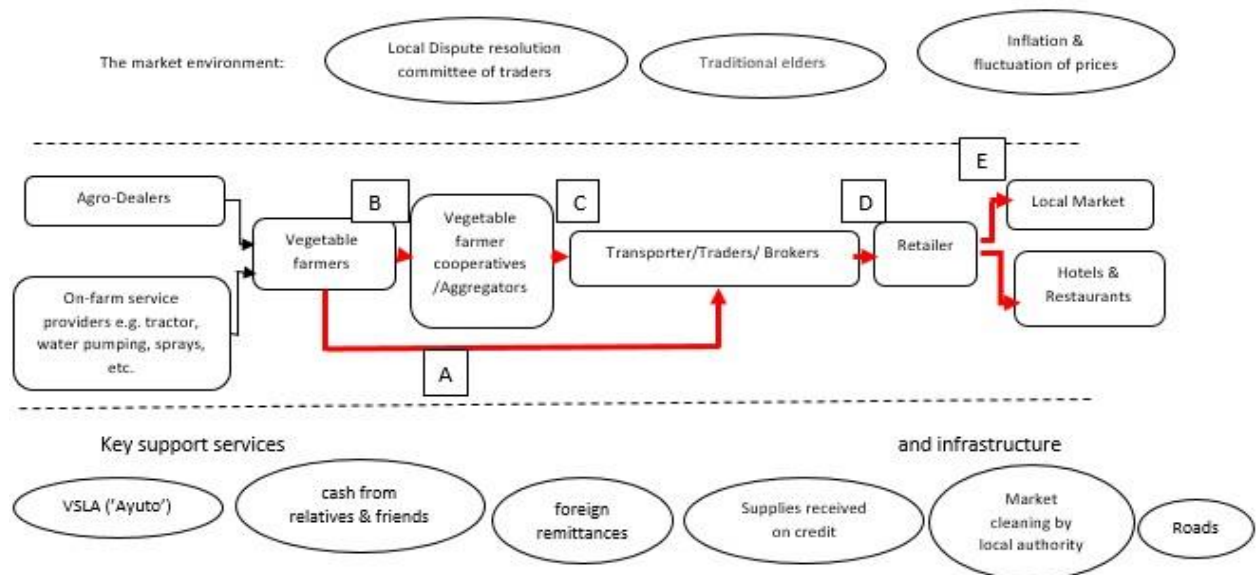
There is a very large number of producers of leafy greens. They tend to have 5-8 traders who purchase from them. Leafy vegetable farmers operate both singly and also in cooperatives.

Cooperative aggregate their fresh produce and hence unite single growers to boost their productivity in leafy vegetables as they aim to increase yields. For example, it is through the organized structures that producers receive training from government and development organizations e.g. on Good Agricultural Practices. They also provide loans and financial services to members e.g., through the VSLAs.

From the farmers (either singly or in cooperatives), the leafy vegetables are bulked together and transported by the transporter to the retailers in the urban centres of Baidoa.

This is after the farmers have sold their produce to traders or brokers who hire the services of the transporters for the movement of the produce from the farmer's gate or cooperative aggregation point to the market.

Traders then sell to retailers. Retailers buy from 5-15 suppliers, selling to 40-70 customers in a week. High number of retailers sell a variety of vegetables. The retailers sell along the roads and open places within the marketplace.



Main Pain-points in the Leafy Vegetable market system due to drought (based on the Vegetable market map above).

Pain Point Area	Nature of Pain	Actor Affected	How the actor is affected
A	- Reduced or no Vegetable supplies	Transporters	- Low or lost livelihoods
	- Reduced green vegetable yields	Farmers	- Low or no income - Reduced/loss of livelihoods due to low or no vegetable productions
B	- Reduced or no vegetable supplies	Cooperatives/Aggregators	- No/Low business hence no/reduced incomes - Increased cost of doing business due to sourcing from distant markets
C	- Reduced or no vegetable supplies	Transporters	- Low or lost livelihoods
D	- Reduced or no vegetable supplies	Retailers	- Low or lost livelihoods
E	- Reduced or no vegetables for consumption	Consumers	- Food insecurity - Poor nutrition

Important elements of the market environment are the local dispute resolution committee of traders, established by traders to resolve any disputes among themselves. Other key elements of the market environment include the traditional local elders as well as inflation and price fluctuations. Individual clan identity plays a key role since clan elders are responsible for resolving disputes among the community members.

Key infrastructure includes the market places and the roads. Market places here is referring to the ad hoc roadside buying & selling points and not designated market structures. The existing key support services include financial services through VSLAs, cash from relatives and friends including foreign remittances, and receiving vegetable supplies on credit thereby enabling traders to continue trading, and make repayments after sales.

c. MSR chart

Comments on *Market Infrastructure* (score=1) made up a significant proportion of all comments on this market system—lack of market space and lack of refrigeration tied for the most number of comments made (20 times in interviews with 23 people). Issues with transportation were not far behind with all market actors well aware of how transport delays can reduce the quality (and therefore profit). In the rainy season in particular, delivery delays increase the price of vegetables, even when quality may decrease.

Vegetable producers were also more vocal about their concerns about *Access to Finance* (score=2); more frequently expressing concerns about the need for collateral and connections to get loans for improving their business. However, credit in the form of delayed payment within the value chain seems to be given fairly freely; with farmers giving credit to aggregators (paid after product is sold), traders giving credit to retailers, and retailers giving credit to customers. This 'backlog' of credit most likely slows investments in the business (such as the purchase of a solar fridge). Cooperatives seek capital



investments from the banks and it is easier when one is a member of the VSLA groups within the cooperatives to access this credit than when approaching the bank singly as an individual.

Diversity (score=1): Traders and retailers specifically noted that they would like to have more diversity of products, as they believe it would bring in more customers. Although the data is not clear, it gives the impression that greens producers are less well-off than milk or cowpea market actors. It is also interesting to note (though perhaps not surprising) that greens producers appeared to be more aware of the health benefits of eating a variety of foods. This could make these market actors good partners for behavior change communications around healthy eating, as they have good *Connectivity* and nutrition outcomes are closely aligned with their own business success.

Retailers noted that there is an increase in *Competition* (score=2), due to the number of people who have moved to urban areas because of the drought and the general decrease in household spending. Producers also felt that there was increased *Competition* as compared to the past due to 'external' producers (from the neighboring districts, such as Berdere in Gedo and Qoryooley in Lower Shabelle regions respectively). Competition is highest during the rainy season when greens are abundant, and market actors lamented the lack of *Market Infrastructure* (such as freezers, dryers, etc) that could be used to smooth consumption. Due to surplus production during the rainy seasons in the neighboring districts, there is vegetable supplies to Baidoa responding to the local demand for green vegetables. Due to poor road networks, poor handling and packaging, insecurity, unreliable transport system, illegal levies, vegetables from other sources destined for the Baidoa market reach their destinations in poor condition with high cost.

Cooperation (score=2): Some farmers seemed to be more savvy about the investments (solar pumps, trucked water) although it is not clear from the data, there is the impression that these are farmers who are members of the cooperative. It is one umbrella cooperative, i.e., Bay Cooperative comprising around 20 associations, and it has direct connections with the relevant government ministries. Independent producers are difficult to find or locate for the purpose of the study. Every function in the market system reported good relationships with other market actors, an echo of the relationship between *Connectivity*, *Cooperation* and *Competition* found in other market systems.

Rule of Law and Power Dynamics - As found in other market systems, there are strong local conflict resolution mechanisms; most market actors agreed that corruption is low in the market system and that integrity and hard work are upheld (Rule of Law, score=2). One producer said: "*there is favoritism, but not very much*". As in other market systems, market actors agreed that no one dominates the market Power Dynamics (score=2.5).

Interestingly, there was more evidence of using "market information" to make decisions; particularly price information as well as information about markets where there is demand for vegetables. (*Decision-making*, score=2.5) in this market system more than in others, however the reason for that is not clear, rather than just relying on family preferences and

perspectives. As in other market systems *Business Strategy* (where it existed) was focused positively on generating value for customers (score=1).

7. Conclusion and Recommendations

a. Conclusions

Activity recommendations are found in the chart below, alongside the impact the activity is expected to have on the market system, assumptions and risks, and suggested indicators to help project design teams to understand how the impact might be measured. This can be particularly important for measuring changes in market systems.

Some overarching perspectives on these three market systems:

As noted throughout this assessment, *Connectivity among market actors is very high across all three market systems, and has the potential to be leveraged for other activities.* Strong market relationships are viewed as important both socially and for business; and trust is high between many market actors. This finding is important because it is possible that markets can be used as a mechanism for early action in response to specific shocks or to encourage innovation and behavior change. Use this element to increase *cooperation* between market actors. Trust can further be strengthened by offering excellent customer service, encouraging customers to leave reviews and feedback about the products sold, be reachable to customers, being transparent and always prioritizing the customers.

While the drought was the most frequently cited shock, volatile prices and lack of storage (as appropriate to each market system) are also having a negative impact on market systems. The need to improve *Market Infrastructure* across all market systems (and/or provide the financing to allow market actors to do this) is clear, and addressing these issues at multiple levels has the potential to improve food security and contribute to stabilizing prices. The roads that are usually rendered impassable during the rainy seasons and that may require improvement include:

1. Baidoa-Midow-Awdinle-Berdale road.
2. Baidoa-Midow-Awdinle-Qasadere-Ufurow road.

The opportunity to leverage investments from diaspora investors and/or remittances should be explored with regards to these market infrastructure investments, as diaspora will have a deeper understanding of risk for these investments, and yet they are more concrete than some of the work done by humanitarian and development actors.

There is a need and an appetite for *diversification of food products.* Competition and consumer demand are not strong enough to naturally bring out innovation and, given the multiple shocks of drought and conflict, market actors do not have the resources to invest. But supporting diversification (increased processing, drought-resistant crops) would improve market resilience significantly.

Access to Finance is relatively weak across the three market systems, but has the potential to be strengthened. This should be done in a holistic way, with a deeper understanding of the blend of finance options available to various market actors and how they can be layered to provide the best support. Programs to strengthen existing value chain financing (for example through matching grants and/or guarantee programs) should be given priority, and cash programs should understand and consider existing borrowing mechanisms within the market system as they design programs.

Based on responses from FSPs during the study, it was clear that Financial institutions in Baidoa, like the rest of Somalia, are acutely aware of their vulnerability to a range of shocks - economic, climate, political and conflict. In general, this has resulted in a preference for very prudent lending that parts with money only briefly: hence, the preference for trade or real estate, where deals are neatly time bound. Many banks lend out just a small portion of their reserves, so as to avoid crippling defaults in the event of a shock. A lack of insurance products--notably for banks themselves also increase their vulnerability to shocks and, therefore perpetuates cautious loaning strategies.

Financial institutions therefore prioritize traders over productive sectors and this penalizes poor groups. Constraints to accessing products include: the need for a financial guarantor, proving financial identity in a country with no national ID system, providing documentation i.e. licenses or registration documents, engaging in a time consuming loan process, and requirements for borrowers to have a credit history to access a loan. These loan requirements are difficult for many poor borrowers, particularly IDPs and women. Women do not have the same resources or social networks as men that would allow them to meet collateral and guarantor requirements. They suffer from restricting gender norms on mobility and they may face pushback from their husbands in securing loans and establishing new businesses.

An area that should be considered for additional study is water and natural resources management. Given climate change and the continued risk of drought, what water use efficiency technologies and climate smart agriculture technologies (e.g. hydroponics) can be introduced and how market systems play a role in rolling out such new technologies? How can multiple actors in the system (producers, agro-dealers, transporters, etc) be incorporated into the design and roll out of better systems for water management?

It is important to note, separate from this assessment, that the US Climate Prediction Center (CPC) has indicated a 62% chance of El Niño developing between May and July 2023 and an 80% chance of developing from July to September ([source](#)). This would mean many of the opposite effects on agricultural crop growing conditions in Somalia as have been seen in the three previous years under La Niña conditions. This prediction means that water management solutions should be given particular priority in the next 3-6 months.

b. Recommendations Chart

	Recommended Activity	Expected Impact on market system/MSR	Market Actors and others involved	Key assumptions or risks	Suggested Indicators and frequency of review
1	Build appropriate vegetable market infrastructure in Hanano, Bukriyey, Dugandug village markets as well as in Baidoa's main market to facilitate linkages to off-take markets.	Increased opportunities for vegetable sales, increased hygiene, accessibility for customers	government, vegetable sellers, and cooperatives.	Space can be made available, vegetable retailers will use the space, govt will keep clean, increased customers	Number of people purchasing vegetable at new location; reduction in spoiled goods (volume or frequency)
2	Provide financing for improved milk and vegetable storage facilities, and for investments in processing, etc in Baidoa town, to Bay Cooperative or interested private sector investors. This could be in the form of matching grants or through guarantee mechanisms with MFIs and banks.	Increased income for HH, increased availability of food, jobs created	financial institutions, mobile money providers,	Mkt actors would use financing if available; Individual/business interested in developing new businesses	value of investments, number of jobs created, increased volume of food available (liters of milk, kgs of cowpeas, etc)
3	Work with agro-dealers to promote solar-fridges , insulated containers for milk transport, and other small-scale technologies to improve product quality.	Increased income for HH, increased availability of food, jobs created	financial institutions, mobile money providers,	Individual/business interested in changing current business practice	increased volume of food available (liters of milk, kgs of cowpeas, etc); value of financing provided through new mechanisms
4	Invest in irrigation and Good Agricultural Practices based on Climate Smart Agriculture	Increased income for market actors,	Government, individual farmers	Farmers and other stakeholders interested in	increased volume of food available (liters of milk, kgs of

	<p>approaches (e.g. hydroponics for crop and fodder production)- Water sources are boreholes that can be solar powered for sustained water pumping. There are no rivers, however during heavy rains water harvesting and storage technologies can be adopted before applying water use efficiency technologies in utilizing the water efficiently</p>	<p>reduced price volatility</p>	<p>and farmer cooperatives</p>	<p>extending the harvest period. There will be adequate finance for investment.</p>	<p>cowpeas, etc); % increase in income; number of people using the new technology</p>
5	<p>Enhance prompt herders access to high quality veterinary services e.g. through the scaling of the Community Animal Health Workers model to Improve animal productivity (animal health, herd management)</p>	<p>Increase in production of milk and meat, improved food security</p>	<p>Government and milk producers (herders).</p>	<p>There is interest from all the stakeholders in improving animal milk productivity.</p>	<p>Average increase in animal milk production (liters);</p>
7	<p>Provide business training to strengthen decision-making and strategy for farmers and herders through their cooperatives</p>	<p>Improved decision-making and business strategy</p>	<p>Entrepreneurs and market actors along the milk, cowpea and leafy vegetable value chains.</p>	<p>Market actors will be interested in business training interventions</p>	<p>Increased business profits, well calculated decision making and business strategy development based on research data</p>
8	<p>Build on the strong Connectivity and Cooperation demonstrated by market actors: organize market actors to be a communication resource (e.g. for nutrition messages, early action)</p>	<p>A well informed customer base on nutrition and increased demand for nutritious foods</p>	<p>Market actors along the milk, cowpea and leafy vegetables market systems</p>	<p>Market actors will develop interest in being a communication resource (for nutrition messages, early action)</p>	<p>Increased demand and uptake of nutritious foods. Improved nutrition among the target beneficiaries.</p>

9	Establish and strengthen producer organizations while enhancing their management capacities through training. Strengthening will involve equipping them with knowledge, skills, resources and equipment for them to take up GAP e.g. hydroponic crop and fodder production as well as skills on post harvest handling of produce and agro-processing/value addition.	Stronger and well organized farmers deriving the social capital dividends	Farmers and farmer cooperatives	farmers will be interested in organizing themselves into formidable farmers organizations ready to leverage each others' strengths	Strengthened farmer organizations with strong management capabilities
10	Develop and promote models of easier farmer credit access e.g., by establishing Village Savings and Loaning Associations (VSLAs) while leveraging on the stronger farmer organizations.	Readily available financial services including credit for new investment	Financial Institutions, farmers and farmer cooperatives	The appetite for credit and finances for investment remain high	% increase in credit accessibility and investment
11	Lobby Government for the establishment of irrigation, and transport infrastructure as well as empowering the Somali farmers to tap into their markets.	Improved irrigation and road infrastructure that boosts efficient operations within the market systems of focus.	Government, farmers, etc	Government will embrace investment in infrastructure projects that will promote accessibility to nutritious foods	Number and type of infrastructure rehabilitated.