MoAI Monthly Report

A Country Report on Agriculture in Somalia

Issue: **August- 2024**

Transforming Somalia's Agriculture:

Merging Crop Suitability and Agro-processing for Climate Resilience and Economic Prosperity

The agricultural sector in Somalia serves not only as an anchor of the economy but also as an engine for livelihoods, contributing over 60% of the national GDP[1]. Although vital, it faces significant challenges, particularly regarding crop suitability in the context of climate change and the underdeveloped agro-processing industry. With the rising incidence of extreme weather events, such as heatwaves and floods—attributes of climate change—the productivity of key crops including maize, millet, sorghum, and cowpea is likely to decline. Additionally, the lack of investment in agro-processing and value addition has limited the economic potential of Somalia's agricultural produce, most of which is sold in raw form, leading to lower profits and increased vulnerability to market fluctuations.[2] Addressing these two interrelated challenges is crucial for ensuring the sustainability of agriculture in Somalia and the country's future economic growth.

1. Somalia National Economic Council, (2023): State of the economy Report
2. SomInvest, (2022): Priority Sector Investment Study.

Figure 1

As climatic changes become increasingly evident in Somalia, land suitability for crops is clearly transforming. A recent study using the FAO land assessment framework and advanced GIS-based multi-criteria decision analysis reveals that climate change will have varying impacts on land suitability for different crops across the country.

The research, which examined future climate scenarios using data from five global circulation models, shows that rainfed crops, will likely experience shifts in suitability levels, particularly in the near future suggesting a potential shift in agricultural focus.[1]

[1] Ibrahim J.A, (2023): Crop suitability assessment under the perspective of climate change: a case study in Somalia.

These findings underscore the urgent need for adaptive strategies in Somali agriculture. However, adaptation cannot solely focus on crop selection and agronomic practices.

The neglected sector of agro-processing and value addition must also be ad dressed to fully unlock the potential of these crops, not only for adaptation to climate change but also to secure economic benefits that help buffer the impacts of climate change.

The neglected sector of agro-processing and value addition must also be ad dressed to fully unlock the potential of these crops, not only for adaptation to climate change but also to secure economic benefits that help buffer the impacts of climate change.

Currently, Somalia's agro-processing sector is underdeveloped, characterized by limited infrastructure, poor investment, and a shortage of skilled labor.

The majority of agricultural products are either consumed domestically or exported in their unprocessed state, lacking the benefits of processing, packaging, and branding. This results in missed opportunities for enhanced profitability and greater market stability.

Integrating insights from crop suitability assessments with the development of the agro-processing sector would provide Somalia with a solid foundation for resilience and economic growth.

There should be a strategic shift towards better-suited crops, such as millet and sorghum, combined with investment in processing facilities for those crops, thereby revitalizing Somalia's agriculture. Producing and processing climate-resilient crops can help develop new value chains that contribute to improved food security, create new jobs, and increase export revenues for Somalia.

Although the barriers to this integrated approach are significant, they are certainly surmountable. Infrastructural investments—particularly in processing plants, storage facilities, and transportation networks—are required to sustain the agro-processing industry.

Simultaneously, it will be essential to increase farmers' and entrepreneurs' access to finance, accompanied by capacity-building programs aimed at developing sufficient skills in agro-processing.

This can be achieved through public-private partnerships that facilitate innovation while scaling up successful models in agro-processing and value addition.

Overall, making this integrated strategy work will require synchronized efforts from all stakeholders in agricultural sector. The Ministry of Agriculture and Irrigation should take the lead in ensuring concerted efforts toward promoting adaptive agricultural practices, collaborating with other stakeholders to align the sector with the realities of a changing climate. These efforts should be matched with the encouragement of cultivating crops that meet higher demands under future climatic conditions and value addition that will enhance profitability and resilience in the agricultural sector.

In conclusion, the intertwined challenges of crop suitability under climate change and the underdevelopment of the agro-processing sector present not only a predicament but also an opportunity for Somalia. By addressing these issues in a coordinated manner, Somalia can improve its agricultural productivity and open up new economic opportunities that secure long-term sustainability and prosperity. This holistic approach to agriculture—encompassing climate resilience and value addition—will provide the means to revitalize Somalia's agricultural sector, establishing it as a solid foundation for both the economy and food security for generations to come.

WATER HARVESTING

TECHNIQUES APPLIED IN SOMALIA: CURRENT SITUATION, PROBLEMS AND SUGGESTIONS"

introduction

Water Harvesting techniques have become adopted for the sake of livelihood are now being given additional interest because it is understood that water harvesting can help increase watersheds for agriculture, animals, and home consumption. Although the definitions are different, it is generally defined as water harvesting techniques, a technique of capturing, collecting, and storage of water and is used for various purposes. Water harvesting techniques can improve good access to water for crop and livestock production and domestic purpose of the family in Somalia. It can also mitigate all flood risks and reduce water waste in urban areas in the country by increasing groundwater recharge, reducing water scarcity.

Current water harvesting techniques in Somalia:

Somalis use different methods when choosing water harvesting techniques, always considering the purpose and goal of using it for livestock watering, agricultural irrigation and domestic use however it depends on the desired purpose. Some of the techniques used by Somalis include the use of Sand/sub-surface dam, Shallow wells, Cement water tank, plastic tank Crop, and animal water harvesting and conservation techniques.

Problem: Although water shortage and scarcity in Somali are well known because the water of Somali is the main problem in the world due to water-related issue have become extremely critical and acute as their use is not utilized and their loss and damage is high so People suffer or complain about frequent floods that damage people, crops and animals every year. damage is high so People suffer or complain about frequent floods that damage people, crops and animals every year.

Figure 1

The agricultural production of Somali depends on water over 85% of others consumption water such as industrialization, urbanization, and high population rate also depends on water over 25%, The main problem with water harvesting techniques in Somalia is that Techniques is not known and even those who know are not able to do it by themselves and rainfall pattern of some areas also some farmers depends on the cultivation of rainfed areas so that it is not always possible to use the two seasonal systems to obtain crop production so that additional source of water for agriculture and other purposes is indispensable.

water harvesting techniques is always done by different NGOs to help people those are not get sufficient water for their live and production but according the unpredictable climate, irresponsibility, negligence and insecurity issues makes difficult to access water from water harvesting techniques however doing project by NGOs has no purpose and is going on without accountability Just think about completing the work on this project because there is no result and the need is always there even no one cares about the dam when the silt fills up in the dam.

Conclusion: The solution to these problems is that people have to be learned knowledge of the water harvesting techniques and give training, demonstration and make more awareness so that people understand the benefits of this technology and the way they manage things to become knowledgeable people or experts who can do it on their own.

ROADMAP TO RECOVERY &

DEVELOPMENT OF COMMERCIAL SOMALI BANANAS

August 21, 2024

The purpose of this article is to shed light on the importance of Somali bananas economically, socially and politically.

The Somali banana once was one of the top export-income generators for the agriculture communities and as well as the country.

Somalia is known to export top quality bananas, a trade that attracted many int'l markets and multinational corporations.

The FAME and the NAME of Somali banana has become GLOBAL.

To date- it is well and alive in the Middle East countries, Italy and in Eastern Europe.

Even though, Somalia has not exported bananas lately, any healthy and good-looking bananas spotted in Middle East markets are called "Somali Bananas" – imported from other countries.

During the recent 'Somalia Agri-Tech Expo 2024', which was organized by the Ministry of Agriculture and Irrigation (MoAI), we learned that the demands of Somali banana is still very high in the Middle East.

Our Prime Minister confirmed to the participants that some countries in the Middle East, particularly, Iraq is highly interested to import Somali bananas, again, and sesames seeds. Therefore, we have a good gesture from the government to recover the banana industry and seek self-sufficiency from agriculture production.

Somalia can and should recover & develop Commercial Somali Bananas. Here, we will try to illustrate a simple roadmap and procedures, based on knowledge & experiences gained through hands-on training in modern commercial banana producing countries such as;

Figure 1

Columbia, Costa Rica, Ecuador & the Philippines.

The following activities are important for the recovery and development of the Somalia banana industry:

SUGGESTED ACTIVITIES:

01 PUBLIC-PRIVATE-PARTNERSHIPS (PPP):

The banana farmers and cooperatives are private.So are the banana marketing companies. These private farmers/cooperatives and companies need to be organized into an effective body that jointly recover and develop the industry. Thus, a public and private partnership (PPP) is a must.

02 BANANA COUNCIL (SOMALI BANANA BOARD):

An open meetings / forums organized by Somali agricultural scholars, commercial banana experts and farmers cooperatives who are willing to volunteer are ideal ways to start setting up governing body.

The governing body shall be tasked to develop policies and frameworks for the recovery and development of the Somali banana industry. This is the second step (establishing a Somali Banana Board)

03 PRODUCTION INCREASE/ DEVELOPMENT:

The current productions of the Somalia banana plantations do not have export qualities.

As such, a wide participation of interested banana farmers s and cooperatives need to be organized.

If only 12,000 hectares are cultivated, approximately 30 million cartons of 13.5 kg of bananas can be produced, which can bring an income of more than $200 million annually.

To increase the production is not a problem when you put in place the Banana Processing / Technical requirements.

04 BANANA PROCESSING / TECHNICAL:

The banana industry is a lucrative business and a labor-intensive agriculture program. Tens of thousands of employment opportunities will be created for the local [women youth] communities as it is a good income-generating program to invest in.

The following lists are crucial for commercial bananas.

The farmer cooperatives can and should carry out some of these activities:

a) Re/construction of banana processing centers
b) Infrastructure and construction of feed roads & basic materials
c) Road infrastructures (roads, irrigation canals etc.,)
d) Seed selections/treatments
e) Sustainable irrigation systems
f) Required inputs – fertilizers, pesticides
g) Export materials & technical training
h) Policy guidelines (Production minimum requirements)
i) Good Banana Production Practices (GBPP) Training – pre/post-harvest care
j) Modern logistics – traceability etc.

05 MARKETS /MARKETING:

We believe that we are not short of markets: The population of the Middle East is staggering over 450 million and according to some market analysists only Middle East can take (gap) around 40 million cartons of 13.5 kg per year (FAO). Turkey market receives more than 100 million cartons of 13.5 per year. Before the foreign markets are targeted, the potential local distribution in the regions within the country are overwhelming.

a) Markets in the Somali Region - (Northern Somalia)
b) Exporting to markets in neighboring countries (Djibouti, Ethiopia and Kenya).
c) Exporting to the Middle East and International Markets

World map by www.freeworldmaps.net

Prosopis Juliflora

in Somali Garanwa): Negative and Positive

Figure 1

Prosopis Juliflora is a plant that presents both opportunities and costs to the communities in areas which it has established itself.

Prosopis Juliflora(mesquite,or in Somali Garanwa) is an ever green shrubs or tree native to central America,the Ceribbean, and South America. The year of introduction into Somalia is not yet clear, however, there is little documentation that might give some ideas about the introduction. For example AFRICARE (1983) reported the introduction of Prosopis juliflora in Somalia as part of a reforestation project for sand dune stabilization in a refugee impacted areas in the Hiran region of central Somalia. In this study, eighteen tree/shrub species were planted and have become established.

Mesquite, or in Somali Garanwa is highly competitive due to the following factors: (i) it is fast growing and nitrogen-fixing; (ii) it is tolerant to arid conditions and saline soils; (iii) it is deep rooted and was found to reach a depth of 53.3 meters (175 feet); (iv) it contains chemicals that inhibits the germination and the spread of other plant species where it grows; and (v) its seeds are spread by animals that feed on its pods, although the leaves are not palatable.Due to its high competitiveness it has taken over farmland, rangeland and forests.

It also reduces the access to land because of its thick vegetation and thorns.

Its thorns also wound animals. Therefore, there is a need to control it and use it for the benefit of affected communities.

In several countries, starting in India, *Prosopis juliflora* was successfully use for charcoal production and the land under it can be recovered and used for agriculture (Reddy, 2007)

Esther and Brent (2005)9 suggest the benefits of *Prosopis juliflora* as: a) use of the tree as fuel wood and charcoal for subsistence and sale, b) use of pods for livestock fodder and ropes made from bark, c) increase honey production and e) reduced dust storm and control of sand dunes.

Some of the negative effects include: a) invasion into crop fields, grazing areas, wetlands and lakeshore, b) The cost of clearing, loss of grazing territory, and making fishing more difficult, c) making the area invaded by *Prosopis juliflora* less accessible to human and animals, d) hard wood causes cutting tools to wear out quickly, e) consumption of the sweet pods causing damage to the teeth of goats, f) sharp thorn causing wounds to goats and cattle, g) increase malaria incidence in the areas heavily invaded by *Prosopis juliflora*.

Due to the limited information and knowledge by the local people on the fast spreading, coppicing and undesirable characteristics of *Prosopis juliflora*, the plant is largely ignored or considered a useless weed. It is still paradoxical that Prosopis is advantageous and disadvantageous for the local people. Some groups are in need of it while others are looking for techniques to eradicate it from their surroundings.

Prosopis juliflora seems to be a good option for rehabilitation of seriously degraded dry sandy areas, where the spread will not get out of control. It is extremely important to limit the planting areas and ensure careful monitoring and control so that extensive spread cannot occur in the same manner that has caused difficulties in some irrigated agricultural schemes.

INFLUENCE OF INPUT SERVICES ON SESAME PRODUCTION AMONG SMALLHOLDER FARMERS IN SOMALIA

Abstract

The study investigates the impact of access to farm inputs on sesame production among smallholder farmers in Somalia.

The research, using quantitative and qualitative methods, suggests that extension support services providers should ensure access to inputs for sesame production.

Sesame, a vital cash crop in Somalia, ranks third in production after sorghum and maize.

The government has taken steps to improve agricultural extension services, including granting permission to extension providers and fostering a conductive environment for private and NGOs to offer support services.

Quantity of sesame production in Somalia

Sesame production primarily occurs in the Lower and Middle Shabelle and Middle Juba regions, with smaller localized production in the northwestern part of Somaliland (Sidow, 2010). Sesame production reached peak in 1982 and 1985, reaching 57,000 tons.

Post-civil war, it declined to 45,000-50,000 tons. Production declined to 38,133 tons in 2013, 35,584 tons in 2014, and 28,640 tons in 2015.

However, production surged to 60,000 metric tons in 2014, with 15,000 metric tons exported (SATG 2015).

The World Bank and FAO estimate that Somalia's sesame seed production is worth $300 million. In 2019, the country exported 28,672 tons, with a 107.528 percent increase in demand and a 311.89% growth in exports, generating $43.03 million in revenue (Salina Wamucii, 2020).

Somali sesame's exceptional quality and favorable international prices solidify its position as a significant cash crop for export (Jaspars et al., 2019).

Smallholder farmers in the sesame value chain face challenges in accessing high-quality agricultural inputs, highlighting the need for quality control and certified seeds, fertilizers, and pesticides.

Lack of training is a key factor contributing to low production (UNIDO, 2016).

FARM INPUTS ACCESSED BY THE RESPONDENTS

The study reveals that sesame farmers access various farm inputs for improved production, including tractors, chemicals, seeds, irrigation, and labor, according to Table

Table 1
Farm inputs accessed by the respondents

Farm input	Frequency	Percent	SD	Mean
Improved seeds	48	33%	14.67	29
Chemicals	40	28%		
Tractors	32	22%		
Irrigation equipment	17	12%		
Labour	8	5%		
Total	145	100		

Source: (Mohamed et al., 2024)

Farm inputs required in sesame production by the respondents

The study identifies the necessary inputs for sesame production, revealing that 48% require inorganic fertilizers, 33% organic fertilizers, 7% herbicides, 6% labour, and 5% pesticides.

Table 2

Farm inputs required in sesame production

Farm input	Frequency	Percent	SD	Mean
Organic fertilizers	49	34%	26	29
Inorganic fertilizers	70	48%		
Pesticides	7	5%		
Herbicides	10	7%		
Laborers	9	6%		
Total	145	100		

Source: (Mohamed et al., 2024)

For the result of this study, the ministry has provided the following recommendations to extension services provision

1. Farmers should focus on optimizing the use of essential farm inputs such as tractors, chemicals, improved seeds, irrigation systems, and labor to enhance productivity and efficiency in sesame cultivation.
2. Farmers should implement Integrated Pest Management practices that combine methods like herbicides and pesticides with organic pest control strategies to effectively manage pests while minimizing environmental impact.
3. The service providers should disseminate information on the latest agricultural technologies, pest and disease management strategies, and sustainable farming practices through workshops, field days, and extension materials.
4. The service providers should monitor the adoption rates of recommended practices and seed varieties among farmers and evaluate their impact on production outcomes.

DESERT LOCUST SITUATION

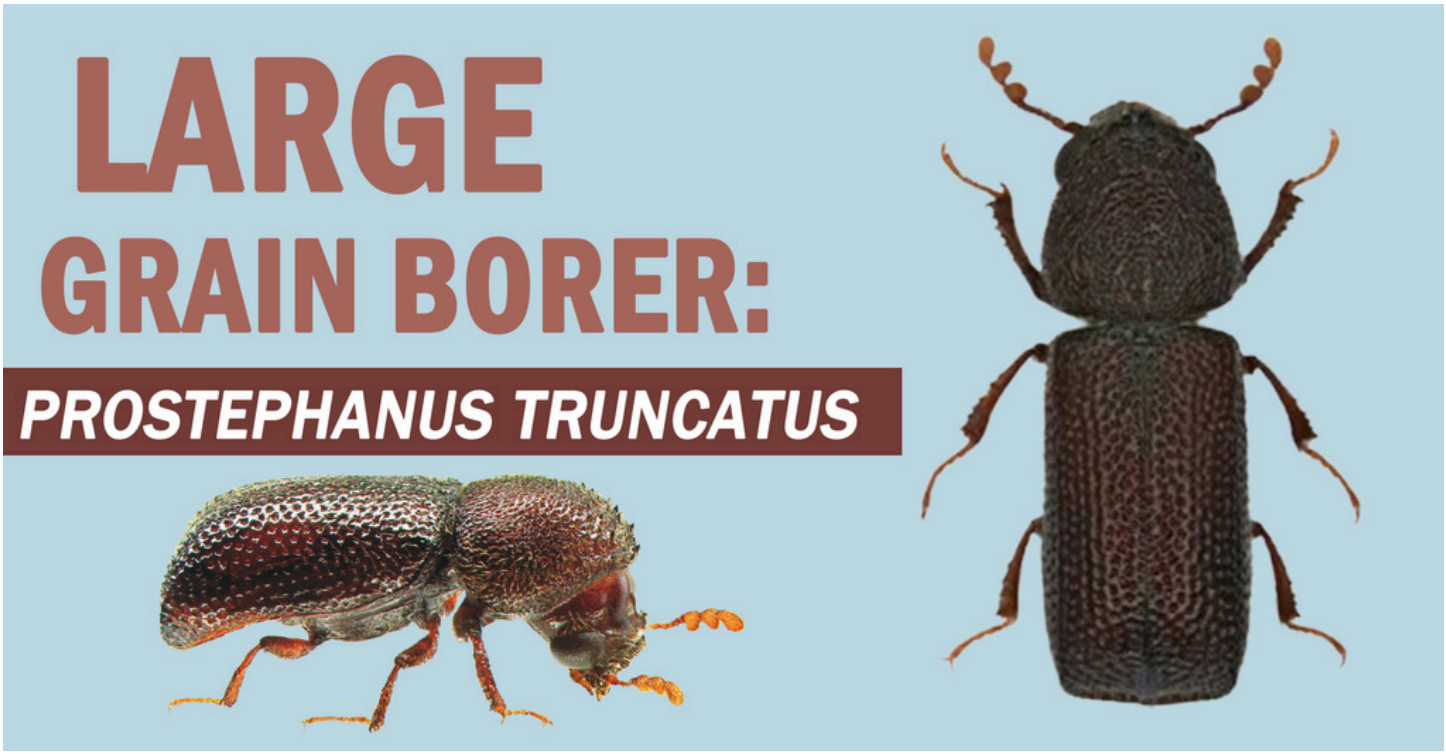
The Desert Locust (DL) situation was calm during August 2024. No survey had been conducted in the coastal, sub-coastal and inland areas of the Desert Locust breeding area in the northwest, Puntland and Galmudug regions.

The rains that fell during the last week of the month in the breeding areas particularly coastal area may contribute to the creation of favourable ecological conditions for locust breeding.

Figure 1

Forecasting

Ecological conditions may become favorable for locust breeding in some areas if abundant rainfall continues, especially in coastal areas like Zaila, Lughaya, and Berbera districts, which are primary Desert Locust breeding areas. This could lead to the creation of favorable conditions for locust breeding.



PROSTEPHANUS TRUNCATUS
LARGE GRAIN BORER

Identification

The adult beetle is 3 to 4.5 mm long and dark brown in colour. It has a cylindrical body shape, when viewed from above the rear of the insect is square shaped. The thorax bears rows of teeth on its upper front edge and the head is turned down underneath the thorax so that it cannot be seen from above. The female lays 30 to 50 eggs into the produce (maize, cassava, etc).The lifecycle can be completed within 25 to 26 days at optimum conditions - this is high temperature (about 30degC) and relatively high humidity grain moisture content).

Figure1

Damage

The larger grain borer was accidentally introduced from Central America into Tanzania in the late 1970s, and spread to other countries in the region. In West Africa it was first found in Togo in the early 1908s. It has now spread to many African countries becoming the most destructive pest of stored maize in both West and East Africa.

The larger grain borer is a serious pest of stored maize and dried cassava roots, and will attack maize on the cob, both before and after harvest. Adults bore into the cassava or maize husks, cobs or grain, making neat round holes and tunnelling extensively producing large quantities of grain dust as they tunnel. The adults prefer grain on cobs to shelled grain, thus damage on unshelled maize is greater than on loose, shelled maize. When infesting stored maize cobs with husk intact, the adults frequently begin their attack by boring into the maize cob cores, and eventually gain access to the grain at the apex

of the cob by crawling between the cob and husk. They may also bore directly through the husk. They cause considerable losses in stored maize; weight losses as high as 35% have been observed after only 3 to 6 months storage in East Africa. Losses in dry cassava can be very high too; the dried roots may be readily reduced to dust by boring adults. Average losses of 19% have been recorded after 6 months storage and as much as 30% in some cases.

Figure 2: Damage on Serial

Cultural practice

Prevention

Before storing new maize, clean and disinfect the storage area, removing and burning all residues To eliminate residual infestation, immerse used sacks in boiling water or use new bags to store maize Harvest early (when the black layer has formed between the tip of the maize and the cob) before the larger grain borer infests the grain When harvesting and storing, check that maize is free of pests, and store only clean cobs Shell and dry the maize until it is very dry (less than 12% moisture)

Store maize with dried lantana or eucalyptus leaves to repel the larger grain borer Use airtight, sealed containers Do not store grains for a long period. Infestation is usually low if grains are sold or used within three months

Monitoring

Monitor weekly the stored produce for damage (e.g. holes in the grains, frass and dust) and adults or larva.

Infestation at low levels is not obvious, so it is important to sample and carefully examine the grains.

Inspect holes and cracks where adults can hide.

Use a box sieve with a mesh of 1 to 2 mm to separate the insects and the grains Bags can be emptied in a thin layer onto a sheet in the shade to examine the content If any adults or larva are found, the infested produce has to be removed from the storage and destroyed Use pheromone traps: Flight traps e.g. funnel, delta or wing traps Place at 100 m away from the storage area or the standing maize crop Position 1 to 2 m from the ground

Control

Use natural enemies, e.g. the beetle Teretriosoma nigrescens, specific predator

Apply an ash-chili mixture to protect maize. Mix 2 kg of wood ash with 1 tablespoon of fine chili powder. Mix 1 part of ash-chili mixture with 4 parts of dried maize grain Mix 1 kg of diatomite powder per bag of maize or grain Mix finely crushed laterite (common red soil of the arid tropics) with grains in grain stores or sealed clay pots

Post harvest

In locations where the larger grain borer is a problem, shell infested cobs as soon as possible before storing and dry completely to below 12% moisture (safe for bagging); when the kernels are too hard to bite through with the teeth they are usually dry enough for bagging. Treat the grain with a botanical pesticide. Traditional varieties with good husk cover are much less likely to be attacked, thus when storing these varieties on the cob, reject any cobs with damaged or open sheathing leaves.

In the case of cassava, leave roots in the ground for as long as possible to reduce the storage period in order to minimise losses. After harvest, sun dry the cassava and immediately transfer it to sealed containers