



Food and Agriculture
Organization of the
United Nations



Somalia

Hand-in-Hand Investment Cases





SOMALIA AT A GLANCE

01 Total Population
16.2 MILLION

02 Longest Coastline
3 333 KM

03 GDP per capita USD
597.5 (World Bank, 2023)

04 Livestock Population
57 Million

05 Average Rainfall
per year
400 mm

CROPS

8.9 Million hectares of fertile arable land; and with potential for up to 265,000 hectares under irrigation

LIVESTOCK

Contributes to about 60% of the agricultural GDP and more than 70% of export earnings



Indicators (NTP 2025- 2029)

74% of Somalis are below 35 years – young work force

Projected real annual GDP growth rate: 4% in 2025 and 4.5% in 2029

Agriculture Sector (crop, livestock and fishery) contribute (70% GDP, 80% employment and 50 % export)

Undiversified economy- 60% of the population is dependent on livestock and crop (sub)sectors

30.4% unemployment rate



WHY INVEST IN SOMALIA

Strategic advantages

- ✓ Proximity to International Transshipment Lines
- ✓ Digitalization of most sectors & strong connectivity
- ✓ Established Export Market for Agricultural Products
- ✓ High demand for Somali livestock in Middle East markets
- ✓ Growing international demand for Halal animal products
- ✓ Affordable Labor and Agricultural Land
- ✓ Innovative Financial Sector
- ✓ Young and Affordable Labor Force
- ✓ High Market Demand for Innovation in Agri-tech

Government Strategies and Incentives

- ✓ Investment promotion zones
- ✓ Blended Financing opportunities
- ✓ No restrictions on the creation of private enterprises
- ✓ Opportunities for large-scale commercial farming
- ✓ Regional Market Access through COMESA, IGAD, and EAC
- ✓ Trade agreements to enhance competitiveness

Trade Corridors and Environment

- ✓ Export Development Programmes
- ✓ Customs Modernization and One-Stop Border Posts Programme
- ✓ Development of Industrial Clusters and Parks
- ✓ Enhancing Product Certification for Export.



GOVERNMENT PRIORITY INVESTMENTS: AGRICULTURE SECTOR



Increase agricultural production and productivity targeting 7 value chains (maize, sorghum, rice, cowpea, sesame, lime, banana)



Development & rehabilitation of irrigation infrastructure for rural development



Invest in Agro-meteorology, Early Warning, Drought & Flood management



Advance Agricultural research & extension services



Invest in Agro-business models and Agricultural finance



Agriculture mechanization & digital innovation



Strengthen institutional capacity and governance





GOVERNMENT PRIORITY INVESTMENTS: LIVESTOCK SECTOR



Strengthening veterinary services, disease surveillance and control, and regulatory frameworks.



Improve breeding, feed availability, and climate-resilient livestock systems.



Enhance export infrastructure, certification and value addition.



Promote sustainable grazing and rangeland management, water harvesting, and pastoralist resilience.

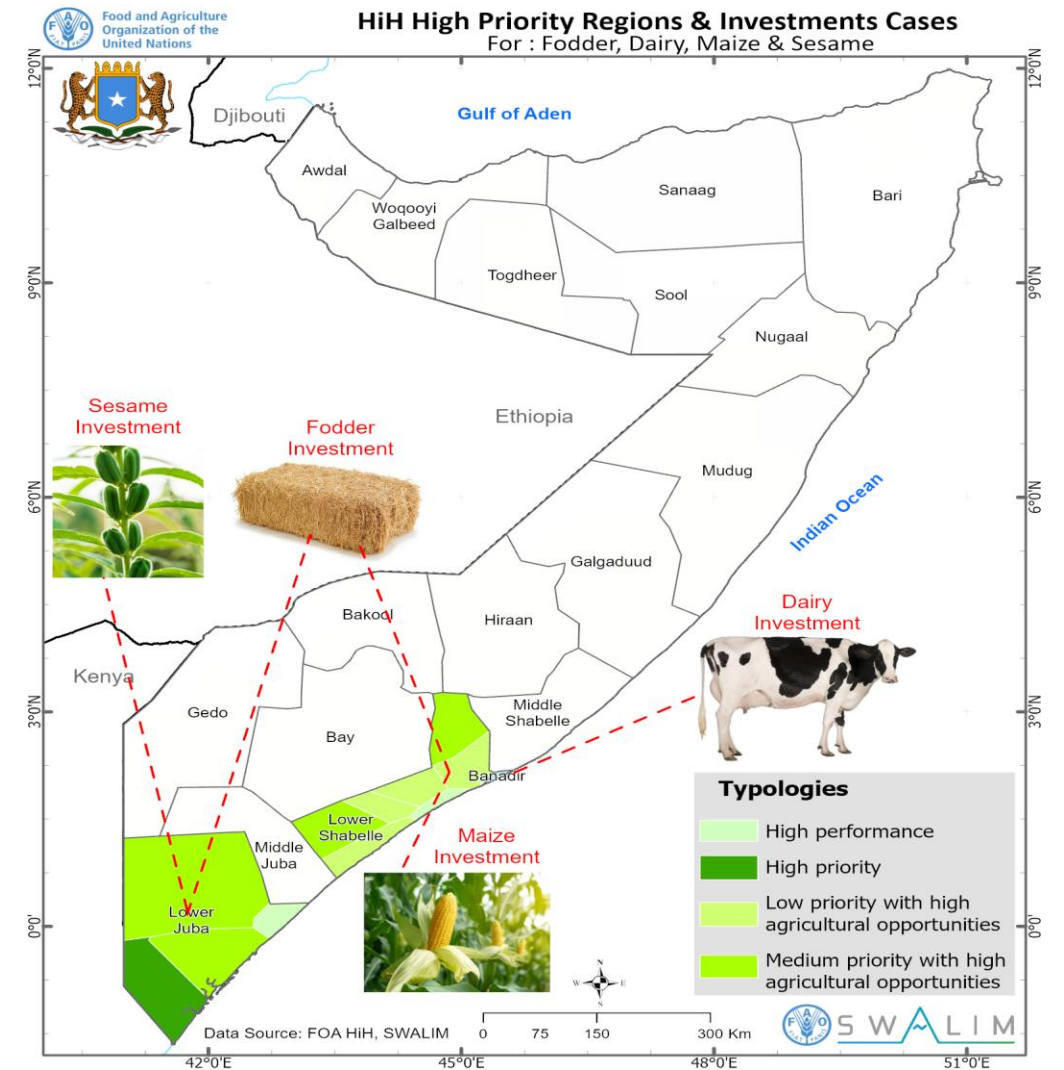
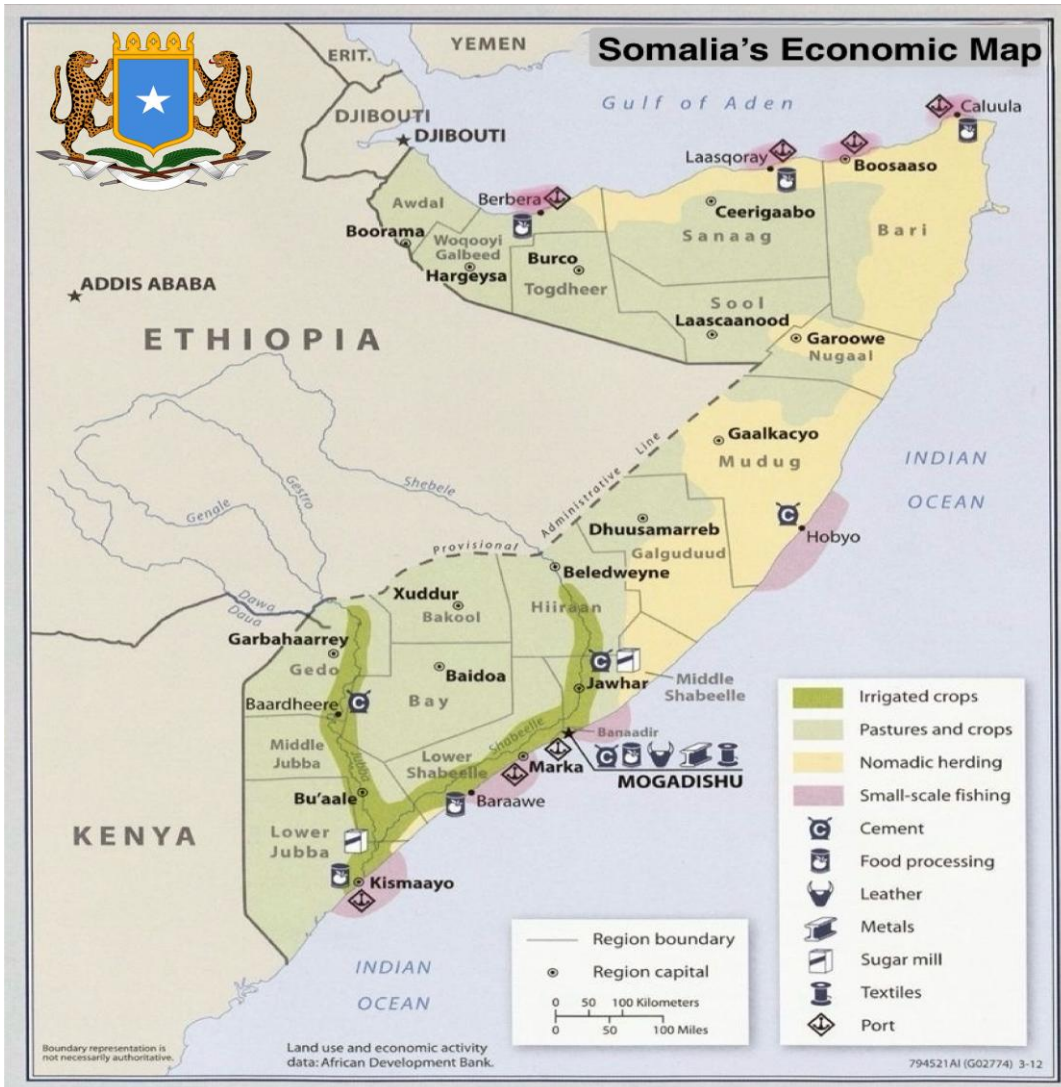


Strengthen institutional capacity through policies, research, and coordination with stakeholders.





SOMALIA ECONOMIC MAP and HIH INVESTMENT PRIORITY REGIONS

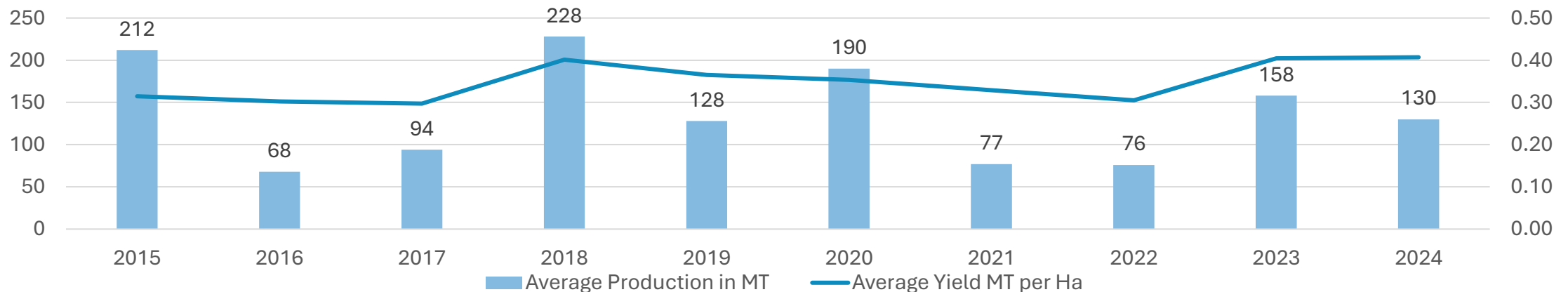




HIH INVESTMENT AREAS - SESAME

- ✓ **Somalia is one of the largest producers of sesame globally**
- ✓ **The main oil seed crop grown for consumption & export**
- ✓ **High potential of production especially in the South-Central Somalia**
- ✓ **There is a high demand of Sesame cake in Somalia for livestock feeding**

Sesame Production and yield trends



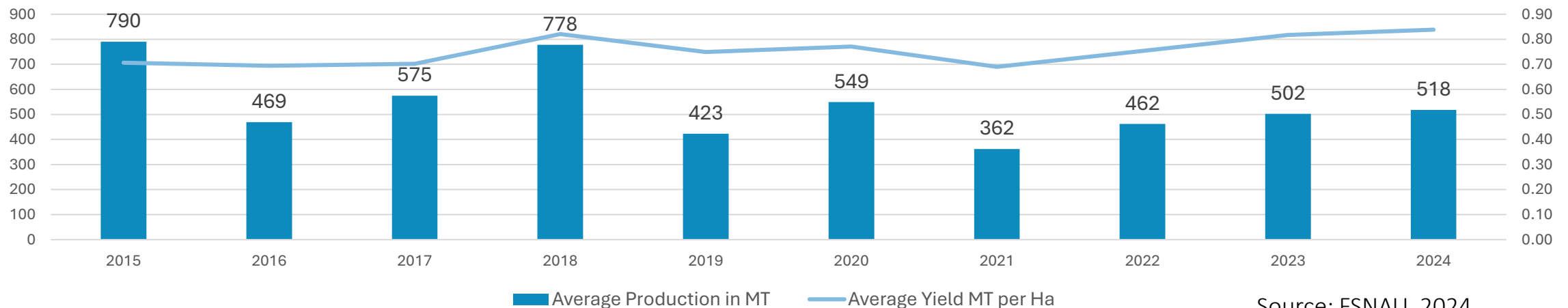
Source: FSNAU, 2024



HIH INVESTMENT AREAS - MAIZE

- ✓ A staple crop in the country, supplements food imports
- ✓ Main food vehicle in value addition and fortification efforts
- ✓ High potential of production in the bread-basket zone
- ✓ Maize is the main component of animal feed in Somalia

Maize Production and yield trends



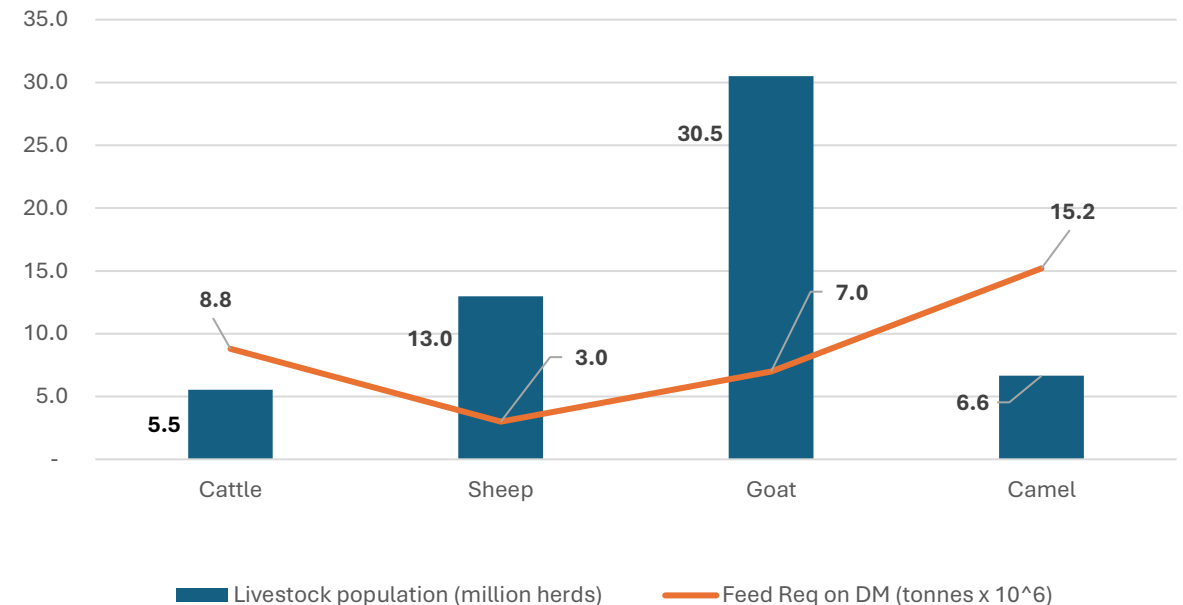
Source: FSNAU, 2024



HIH INVESTMENT AREAS - FODDER

- ✓ **Somalia has one of the largest livestock populations in the world**
- ✓ **The country is currently facing a significant feed deficit of 34%**
- ✓ **There is a strong investment opportunity in fodder production due to:**
 - ✓ *Significant demand for high-quality feed*
 - ✓ *Frequent droughts impacting natural pastures*
 - ✓ *The rise of commercial dairy farming, especially camel dairies*
 - ✓ *High volumes of livestock exportation, which increases feed demand.*

Livestock population and annual feed requirement as DM per animal



Note: DM requirement was calculated based on Tropical Livestock units (1TLU= 250kg). 1 TLU consumes 2.5% BWT=6.25kg Dry Matter.



HIH INVESTMENT AREAS - DAIRY

- ✓ **High Dependency on Imports:** Somalia relies heavily on imported milk and dairy products.
- ✓ **Promising Sub-Sector:** The dairy sub-sector has unleashed potential but faces challenges.
- ✓ **Growing Demand:** Increasing population and urbanization are driving the demand for milk and milk products.
- ✓ **Investment Opportunities:** There is substantial potential for partnerships with the private sector and investors for large-scale dairy operations in a ready local market.
- ✓ By 2029, government aims to achieve an average fresh milk production of 7,900 L per day as compared to 3,460 L per day in 2025.



OPPORTUNITY 1: SESAME INVESTMENT AREA

Goal

- ✓ Increase sesame production by 50% within 5 years (from 50,000 tons in year 1 to 75,000 tons from Year 3 to Year 5)
- ✓ secure a sustainable market for 100,000 producers through the establishment of a sesame oil processing factory.

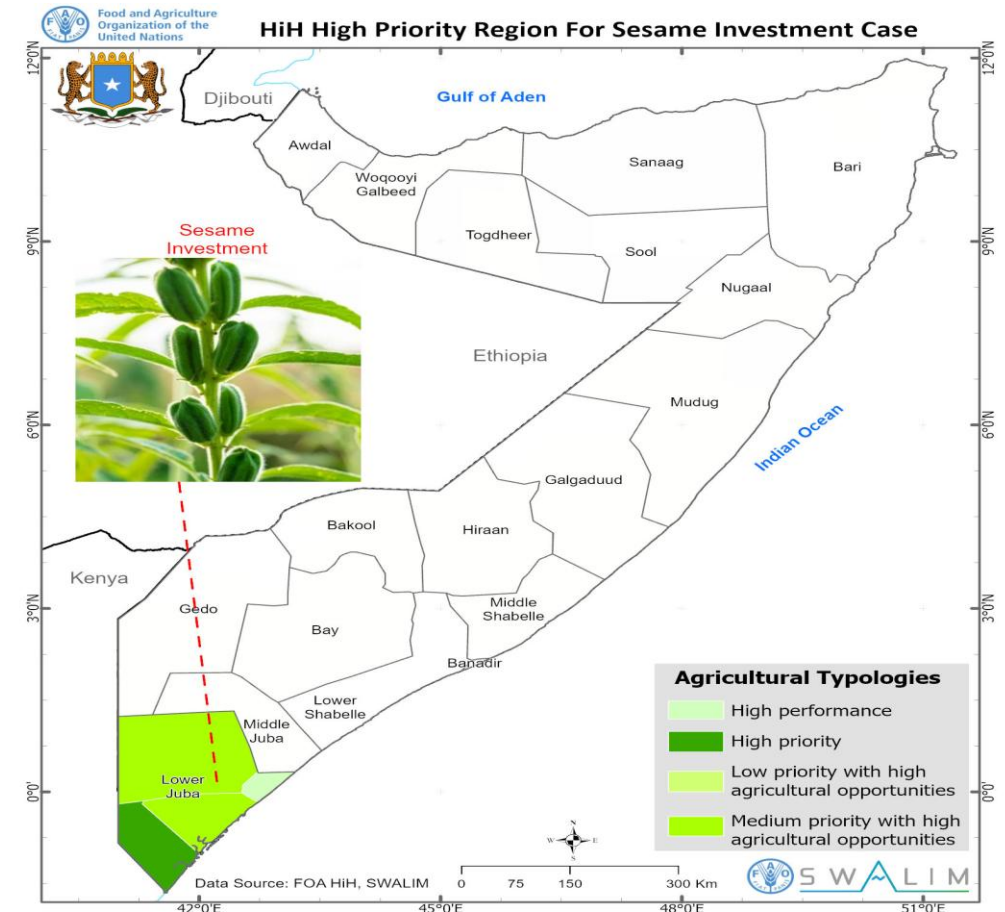
Target Region:

- ✓ Lower Juba

Targeted Market

- ✓ Export market (EAC, China) & domestic market

HHI Typology With target Region





OPPORTUNITY 1: SESAME INVESTMENT AREA

Aspect	Current Market Overview	Expected Market Opportunity
Production Volume	<ul style="list-style-type: none">Approximately 50,000 tons annually	<ul style="list-style-type: none">Increase to 75,000 tons annually (50% growth over 5 years)
Number of Producers	<ul style="list-style-type: none">Approximately 20,000 smallholder farmers	<ul style="list-style-type: none">Expansion to 100,000 producers through commercialization clusters
Market Value	<ul style="list-style-type: none">Approx. USD 75 million/year (based on \$1,500/ton)	<ul style="list-style-type: none">Potential to reach USD 112.5 million/year
Processing Capacity	<ul style="list-style-type: none">Minimal; mostly raw sesame exported	<ul style="list-style-type: none">Establishment of sesame oil processing factory for value addition
Market Access	<ul style="list-style-type: none">Primarily raw exports; limited domestic processing	<ul style="list-style-type: none">Diversified access to EAC, China, and domestic oil markets
Infrastructure & Inputs	<ul style="list-style-type: none">Weak irrigation, limited mechanization, poor seed systems	<ul style="list-style-type: none">Investments in irrigation, mechanization, seed production, and farmer organization
Value Chain Development	<ul style="list-style-type: none">Fragmented and informal	<ul style="list-style-type: none">Structured, scalable, and investment-ready sesame value chain



OPPORTUNITY 1: SESAME INVESTMENT AREA

Bottlenecks	Key Investment Areas	Risks	Mitigation Strategies
1. Low Productivity & Climate Vulnerability	• Rehabilitation of irrigation channels to improve water access and reduce climate risk	• Delays in infrastructure rehabilitation due to funding or technical constraints	• Engage development partners and government for cofinancing and technical support
	• Production and distribution of improved sesame seeds	• Limited access to quality seeds and weak seed systems	• Strengthen seed multiplication programs and promote private sector seed enterprises
2. Fragmented Production & Weak Farmer Organization	• Organize farmers into commercialization clusters and cooperatives	• Resistance to collective action or lack of trust among farmers	• Use lead farmers and local champions to build trust and demonstrate benefits
	• Capacity building on good agricultural practices and postharvest handling	• Low adoption of improved practices	• Extension services and demonstration plots to promote best practices
3. Limited Value Addition & Processing Capacity	• Establishment of a sesame oil processing factory	• High capital investment and operational costs	• Public-Private-Partnerships (PPP) and investment incentives to attract private sector
	• Mechanization services to improve efficiency and reduce labor constraints	• Limited access to machinery and maintenance services	• Promote mechanization service providers and leasing models for affordability
4. Market Access & Export Readiness	• Linkages to export markets (EAC, China) and domestic buyers	• Market volatility and trade barriers	• Diversify markets and engage trade facilitation agencies for compliance and promotion
	• Branding and quality certification for sesame oil	• Lack of standards and certification systems	• Collaborate with quality control authorities and export promotion agencies
	• Digital platforms for market information and traceability	• Limited digital infrastructure in rural areas	• Mobile based solutions and training for farmers and cooperatives



OPPORTUNITY 1: SESAME INVESTMENT AREAS

USD 5,333,179
NPV

26 – 28%
IRR

870,000
Beneficiaries

-131,364.31
tCO2e

	Sesame oils	Sesame seeds	Mechanization Services (33 tractors)	Irrigation renovation	Value chain actors' skills and institutions	Value chain actors' logistics dev.
Tot. inv.	6,656,582	1,443,737	2,992,615	68,500,000	1,000,000	1,500,000
NPV 17%	3,283,909	560,206	1,489,064			
IRR	28%	26%	28%			
ROI	3.5	3.2	3.5			
Payback period (years)	3.9	3.6	3.8			
Incomes increase per capita (all investments combined)	<p>The target is to increase by 25% the production: from 50,000 tons to 62,500 tons within five years (from 50,000 tons in year 1 to 62,500 tons from Year 3 to Year 5).</p> <p>Value of Sesame production in in Yr 1 and 2 – USD 50 Million/year, (USD 500/farmer/year)</p> <p>Value of Sesame production in in Yr 3, 4 and 5 – USD 62,5 Million/year, (USD 625/farmer/year)</p>					
Direct beneficiaries	<p>100, 000 farmers directly impacted through access to market, irrigation facilities capacity and logistic improvement</p> <p>70,000 livestock owners' access 14,400 tons of sesame by-products for animal feeding</p> <p>Total: 170,000 producers organized into clusters</p>					
Indirect beneficiaries	700,000 individual					



OPPORTUNITY 2: MAIZE INVESTMENT AREA

Goal

- ✓ Increase Maize production by 50% within 5 years (from 80,000 tons in Year 1 to 120,000 tons in Year 5)
- ✓ Secure a market for 100,000 producers, and substitute maize imports through the establishment of a maize flour processing factory

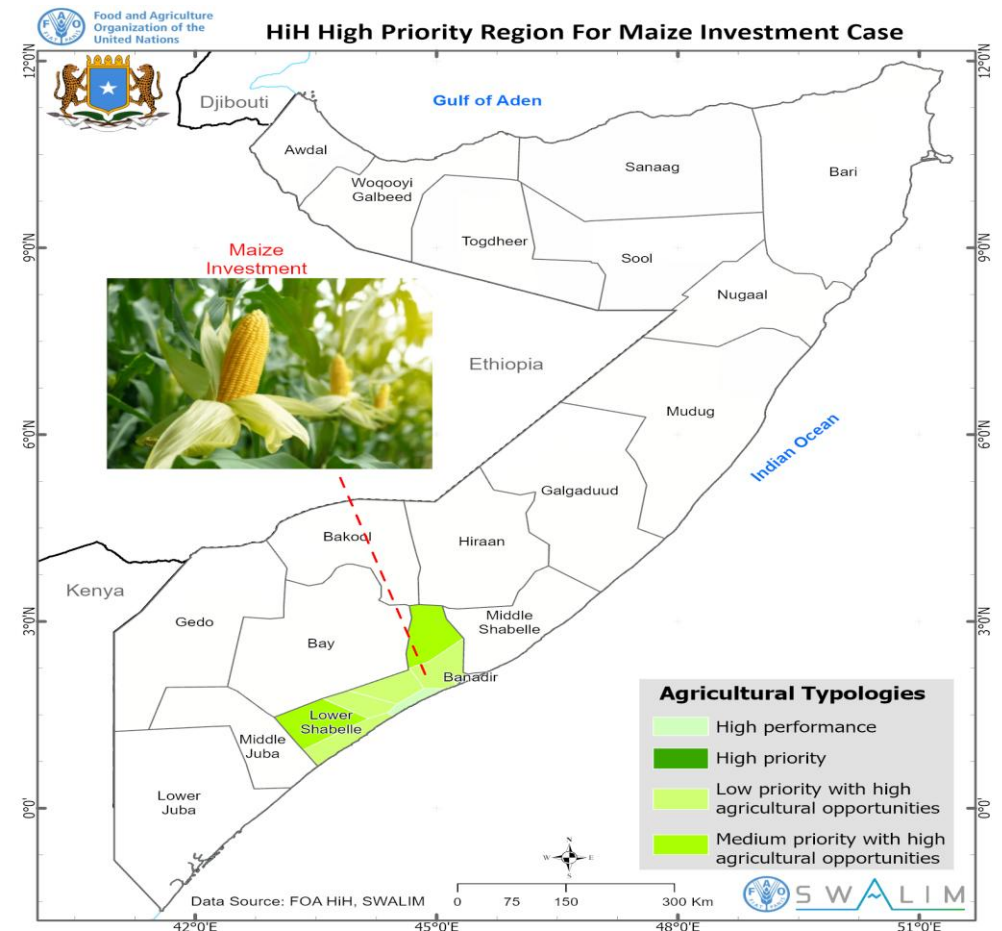
Target Region:

- ✓ Lower Shebelle

Targeted Market

- ✓ Export market (EAC) and domestic market

HHI Typology With target Region





OPPORTUNITY 2: MAIZE INVESTMENT AREA

Aspect	Current Market Overview	Expected Market Opportunity
Production Volume	<ul style="list-style-type: none">Approximately 80,000 tons annually	<ul style="list-style-type: none">Increase to 120,000 tons annually (50% growth over 5 years)
Number of Producers	<ul style="list-style-type: none">Predominantly smallholder farmers with low yields	<ul style="list-style-type: none">Secure market for 100,000 producers through commercialization and processing
Market Value	<ul style="list-style-type: none">Largely informal; dependent on imports for maize flour and products	<ul style="list-style-type: none">Substitution of imports with local production and processing for domestic and EAC markets
Processing Capacity	<ul style="list-style-type: none">Minimal; limited maize flour processing infrastructure	<ul style="list-style-type: none">Establishment of a maize flour processing factory to add value and reduce imports
Market Access	<ul style="list-style-type: none">Fragmented; weak linkages between producers and buyers	<ul style="list-style-type: none">Strengthened market linkages and structured supply chains for domestic and export markets
Infrastructure & Inputs	<ul style="list-style-type: none">Poor irrigation, low mechanization, limited access to quality seeds	<ul style="list-style-type: none">Investments in irrigation, mechanization (e.g., combine harvesters), seed systems, and farmer clusters
Import Dependency	<ul style="list-style-type: none">High reliance on imported maize and maize products	<ul style="list-style-type: none">Opportunity to reduce import dependency and retain value within the local economy



OPPORTUNITY 2: MAIZE INVESTMENT AREA

Bottlenecks	Key Investment Areas	Risks	Mitigation Strategies
1. Low Productivity & Climate Dependence	• Rehabilitation of irrigation channels to ensure year-round water availability	• Delays in infrastructure rehabilitation due to funding or technical issues	• Engage government and development partners for cofinancing and technical support
	• Production and distribution of improved maize seeds	• Limited access to certified seeds and weak seed systems	• Strengthen seed multiplication programs and promote private sector seed enterprises
2. Fragmented Production & Weak Farmer Organization	• Organize farmers into commercialization clusters and cooperatives	• Resistance to collective action or lack of trust among farmers	• Use lead farmers and local champions to build trust and demonstrate benefits
	• Capacity building on good agricultural practices and postharvest handling	• Low adoption of improved practices	• Extension services and demonstration plots to promote best practices
3. Limited Value Addition & Processing Capacity	• Establishment of a maize flour processing factory	• High capital investment and operational costs	• Public-Private-Partnerships (PPP) and investment incentives to attract private sector
	• Mechanization services including combine harvesters	• Limited access to machinery and maintenance services	• Promote mechanization service providers and leasing models for affordability
4. Market Access & Import Substitution	• Linkages to domestic and export markets (EAC)	• Competition from imported maize and flour	• Promote local branding, quality assurance, and consumer awareness campaigns
	• Digital platforms for market information and traceability	• Limited digital infrastructure in rural areas	• Mobile based solutions and training for farmers and cooperatives
	• Quality certification and packaging for flour products	• Lack of standards and certification systems	• Collaborate with quality control authorities and export promotion agencies



OPPORTUNITY 2: MAIZE INVESTMENT AREAS

USD 4,122,298
NPV

21 – 28%
IRR

826,000
Beneficiaries

5,121.45
tCO2e

	Maize flour factory	Mechanization Services (33 tractors)	Mechanization Services renting (17 combiners)	Irrigation renovation	Value chain actors' skills and institutions	Value chain actors' logistics dev.
Tot. inv.	5,529,744	2,992,615	1,799,439	68,500,000	1,000,000	1,500,000
NPV 17%	2,343,602	1,489,064	289,632			
IRR	27%	28%	21%			
ROI	3	3.5	2.8			
Payback period (years)	3.5	3.8	4.5			
Incomes increase per capita (all investments combined)	The target is to increase maize production from 80,000 tons in year 1 to 120,000 tons within five years (from 80,000 tons in year 1 to 120,000 tons from Year 3 to Year 5). Value of Maize production in in Yr 1 and 2 – USD 80 Million/year, (USD 800/farmer/year) Value of Maize production in in Yr 3, 4 and 5 – USD 120 Million/year, (USD 1200/farmer/year)					
Direct beneficiaries	100,000 small scale farmers, 18,000 livestock keepers accessing 3,600 tons of by-products. Total: 118,000 producers					
Indirect beneficiaries	708,000 individual					



OPPORTUNITY 3: DAIRY INVESTMENT AREA

Goal

- ✓ Increase milk production to substitute the powder milk imports (USD 200 Million per Year)
- ✓ Secure market for 8,000 livestock keepers (cows and camels)

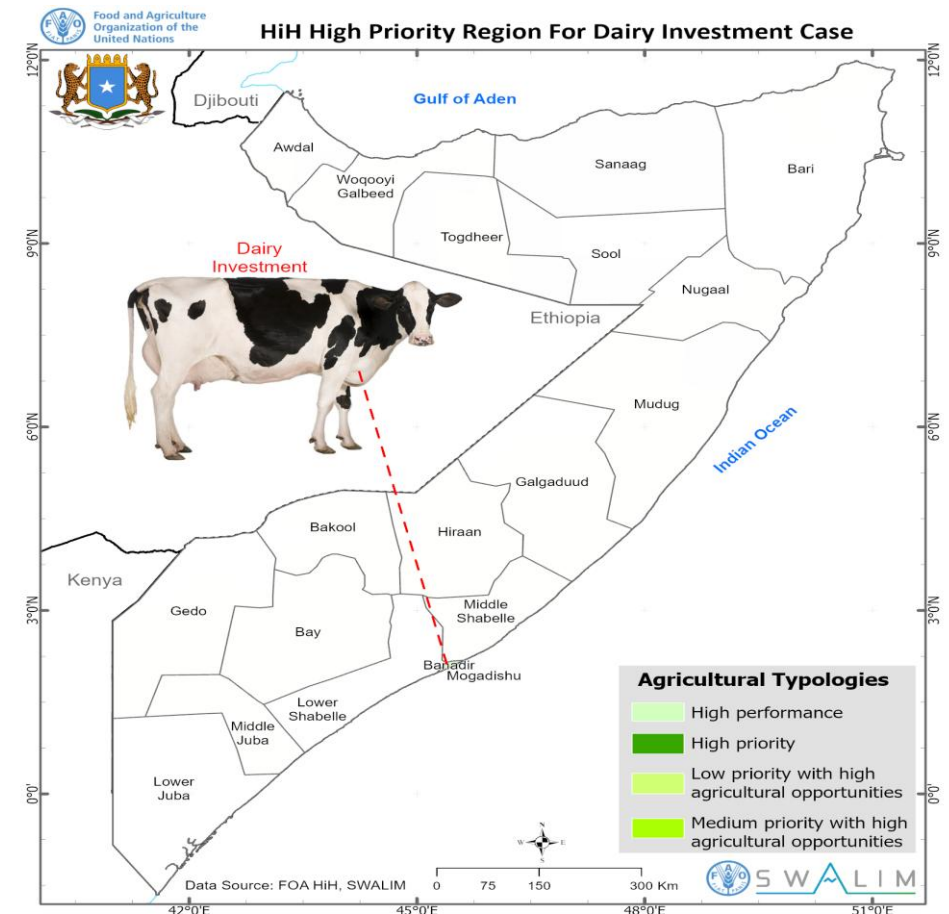
Target Region:

- ✓ Peripheral zone of Mogadishu

Targeted Market

- ✓ Mogadishu- high demand to substitute dairy products import (200 million USD per Year)

HHI Typology With target Region





OPPORTUNITY 3: DAIRY INVESTMENT AREA

Aspect	Current Market Overview	Expected Market Opportunity
Production & Processing	<ul style="list-style-type: none">Limited local milk production and processing; mostly informal and concentrated in Mogadishu	<ul style="list-style-type: none">Investment in dairy farms and processing facilities across federal member states to meet local demand
Market Demand	<ul style="list-style-type: none">High and consistent demand for milk and dairy products	<ul style="list-style-type: none">Local production expected to meet growing demand and reduce reliance on imports
Import Dependency	<ul style="list-style-type: none">Heavy reliance on imported milk and dairy products	<ul style="list-style-type: none">Potential to substitute imports worth USD 200 million/year with local production
Product Pricing	<ul style="list-style-type: none">Imported UHT milk: USD 1.60/liter; Imported yogurt: USD 10/liter	<ul style="list-style-type: none">Locally produced milk and yogurt can be priced more competitively, improving affordability
Geographic Distribution	<ul style="list-style-type: none">Dairy activity mostly limited to Mogadishu	<ul style="list-style-type: none">Expansion into federal member states offers untapped investment potential
Economic Impact	<ul style="list-style-type: none">Limited local value capture; high outflow of foreign currency	<ul style="list-style-type: none">Job creation, rural income growth, and improved food security through local value chains



OPPORTUNITY 3: DAIRY INVESTMENT AREA

Bottlenecks	Key Investment Areas	Risks	Mitigation Strategies
1. Low Milk Productivity	• Establishment of a model dairy farm with 200 improved dairy breeds	• Lack of land for dairy farm and fodder production	• Engage national forums and government to prioritize land allocation for strategic dairy investments
	• Fodder production on 100 ha to support dairy feed needs	• Bureaucratic delays in land access and competing land uses	• Early stakeholder consultations and government private sector coordination to secure land
2. Limited Market Access for Raw and Processed Milk	• Construction of a dairy processing factory near Mogadishu	• Inconsistent raw milk supply from small scale producers	• Organize milk collection systems and integrate smallholders into supply chains
	• Cold chain infrastructure for milk collection and transport	• Milk spoilage during transport due to lack of cooling	• Invest in milk collection centers with cooling tanks and transport logistics
	• UHT milk production to compete with imports	• Imported milk may still dominate due to brand loyalty and pricing	• Promote local milk branding, quality assurance, and awareness campaigns
3. Skills Gap in Dairy Processing	• Capacity building for dairy farmers and factory staff	• Lack of skilled manpower for modern dairy operations	• Partner with FAO, government, and vocational institutions for training programs
	• Formation of milk producer associations or clusters	• Informal milk collectors may resist formalization	• Incentivize producers through better prices, services, and long-term contracts
4. Market Information and Consumer Awareness	• Embedded services between factory and producers (training, inputs, vet care)	• Weak communication and feedback loops	• Use digital tools and extension agents to strengthen producer factory relationships
	• Digital marketing and consumer engagement via social media	• Limited digital literacy among producers	• Use mobile friendly platforms and local language content for outreach



OPPORTUNITY 3: DAIRY INVESTMENT AREAS

USD 1,840,657
NPV

24 – 38%
IRR

56,000
Beneficiaries

17,318.87
tCO2e

	Milk factory (10.000 lt processed /day)	Dairy farm (200 improved breeds)	Fodder production (100 ha with Sorghum, Maize and Alfalfa)	VC Actors' skills and institutions	Value chain actors' logistics
Tot. inv.	1,355,813	612,175	350,877	1,000,000	1,500,000
NPV 17%	1,300,335	202,046	338,276		
IRR	35%	24%	38%		
ROI	4.7	3.3	4.5		
Payback period (years)	3.1	4.3	3.1		
Incomes increase per capita (all investments combined)	8,000 livestock keepers selling to the dairy factory around 8,000 litters per day. Gross Revenue minimum for the milk suppliers is 8,000 x 0.5 USD per liter x 9 months x 30 days: USD 1,080,000/ 8,000: USD 135 USD per year. PS: Revenue figures are likely to increase significantly if intensification programs are developed and implemented targeting the 8,000 farmers.				
Direct beneficiaries	8,000 suppliers of raw milk will benefit from facilities and Labor in the dairy farm and in the fodder production (100 ha)				
Indirect beneficiaries	48,000 individuals per day (assuming a minimum of 0.5 liters of milk per household per day)				



OPPORTUNITY 4: FODDER INVESTMENT AREA

Goal

- ✓ Mitigate climate change to secure fodder availability (target: 38,000 tons of dry matter per year)
- ✓ Reach 200,000 livestock keepers and Livestock traders in quarantine sites

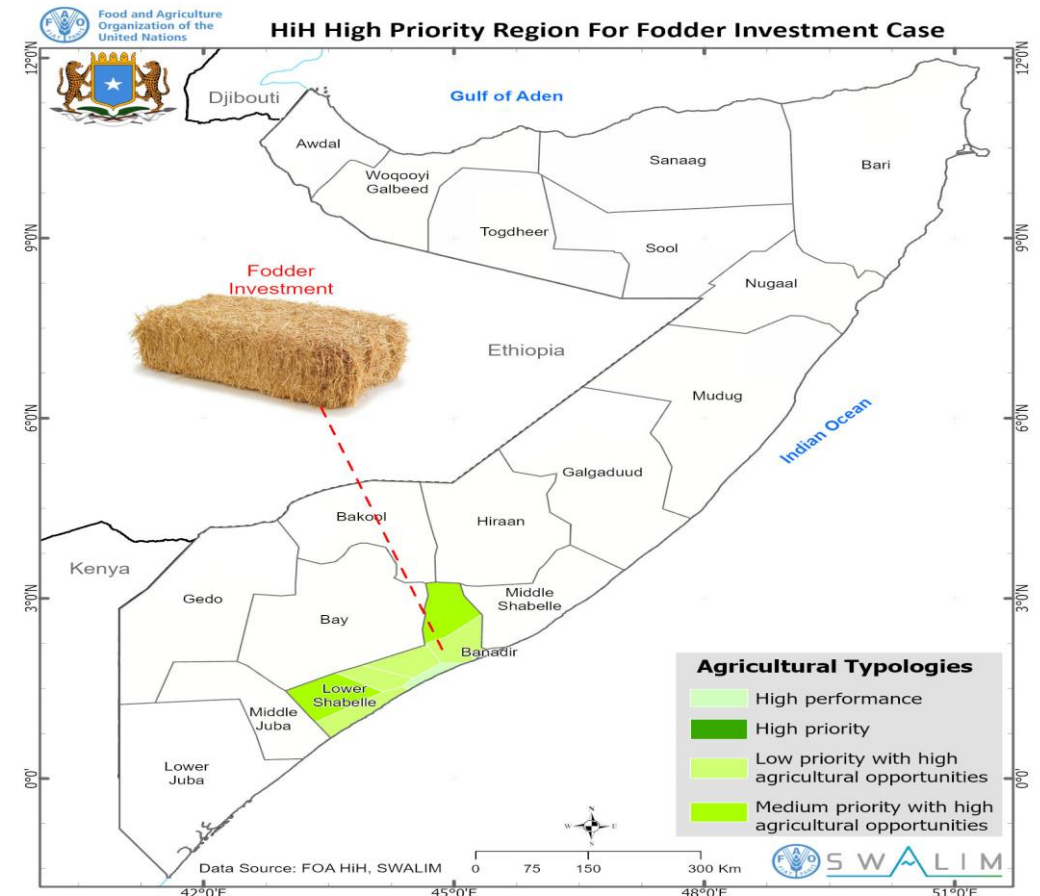
Target Region:

- ✓ Lower Juba and Lower Shebelle

Targeted Market

- ✓ 200,000 Livestock keepers in Juba and Shabelle regions

HHI Typology With target Region





OPPORTUNITY 4: FODDER INVESTMENT AREA

Aspect	Current Market Overview	Expected Market Opportunity
Commercial Production	<ul style="list-style-type: none">Limited commercial fodder production despite high demand	<ul style="list-style-type: none">Expansion of dairy and livestock sectors will drive increased demand for quality fodder
Market Demand	<ul style="list-style-type: none">Demand from dairy farms, livestock quarantine centers, and exporters	<ul style="list-style-type: none">Rising demand from pastoralists and agro-pastoralists due to climate change and drought
Feed Deficit	<ul style="list-style-type: none">Somalia faces a 34% feed deficit, affecting livestock productivity	<ul style="list-style-type: none">Opportunity to close the feed gap through scalable and sustainable fodder production systems
Production Systems	<ul style="list-style-type: none">Reliance on natural grazing and informal feed sources	<ul style="list-style-type: none">Shift toward intensive and semi-intensive livestock systems requiring consistent fodder supply
Climate Impact	<ul style="list-style-type: none">Drought and erratic rainfall reduce natural pasture availability	<ul style="list-style-type: none">Climate-resilient fodder systems (e.g., irrigated plots, drought-tolerant species) will be essential
Investment Potential	<ul style="list-style-type: none">Underdeveloped value chain with limited infrastructure	<ul style="list-style-type: none">High potential for investment in land, irrigation, seed systems, and processing (e.g., silage, hay)



OPPORTUNITY 4: FODDER INVESTMENT AREA

Bottlenecks	Key Investment Areas	Risks	Mitigation Strategies
1. Climate Vulnerability & Low Fodder Yields	• Climate smart fodder production on 2,000 ha (drought tolerant species, irrigation)	• Delays in land allocation due to competing land use and bureaucracy	• Engage local authorities and national forums to fast-track land access and integrate fodder into climate adaptation plans
	• Agroforestry and integrated land use systems	• Poor adoption of sustainable practices	• Demonstration plots and farmer field schools to showcase benefits
2. Market Access & Affordability	• Establish fodder aggregation centers near quarantine sites and livestock markets	• High transport and logistics costs	• Subsidized transport schemes and Public Private logistics partnerships
	• Organize producers into cooperatives for bulk marketing	• Weak institutional capacity of producer groups	• Capacity building and mentorship programs for cooperatives
	• Digital platforms for fodder trade and price transparency	• Limited digital access in rural areas	• Mobile based solutions and radio campaigns for outreach
3. Fodder Seed Supply Chain	• Local seed multiplication programs (Public-Private-Partnerships)	• Limited capacity of research institutions	• Support private sector led seed enterprises and regional seed banks
	• Collaboration with IGAD, FAO, and Somali research bodies	• Inconsistent funding and coordination	• Longterm donor engagement and national seed strategy alignment
4. Knowledge & Awareness Gaps	• Training on balanced feeding and fodder conservation (silage, hay, feed blocks)	• Resistance to change among traditional herders	• Use of community influencers and extension agents for behavior change
	• Awareness campaigns on climate smart livestock systems	• Low literacy levels	• Use of visual tools, local languages, and storytelling formats



OPPORTUNITY 4: FODDER INVESTMENT AREAS

USD 2,460,456
NPV

23%
IRR

1,365,530
Beneficiaries

14,611.12
tCO₂e

	Fodder production Juba	Fodder production Shabelle	Complementary program
Tot. inv.	5,008,099	5,008,099	5,000,000
NPV 17%	1,230,228	1,230,228	
IRR	23%	23%	
Payback period	3.8	3.8	
ROI	2.8	2.8	
Incomes increase per capita (all investments combined)	USD 440 – USD 505		
Direct beneficiaries	<ul style="list-style-type: none">• 195,000 livestock keepers will be supplied from the fodder farm of 38,000 tons of DM per year.• Labor: 500• Permanent staff : 30		
Indirect beneficiaries	1,170,000 individuals		





HIH OVERALL INVESTMENTS



\$ 183.2 mn	\$ 137 mn	\$ 12.5 mn	\$ 33.7 mn	2.64 mn	23 – 32%	13.75 mn	\$ 543	-94,312.87 tCO ₂ e
Tot. Inves.	Public Inves.	PPP. Inves.	Inves. Gap	Beneficiaries	Ave IRR	Overall NPV	Ave Income increase per Capital	Carbon Balance



SESAME



MAIZE



DAIRY



FODDER

Increase sesame production by 50% within 5 years (from 50,000 tons in year 1 to 75,000 tons from Year 3 to Year 5)	Increase Maize production by 50% within 5 years (from 80,000 tons in Year 1 to 120,000 tons in Year 5)	Increase milk production to substitute the powder milk imports (USD 200 Million per Year)	Mitigate climate change to secure fodder availability (target: 38,000 tons of dry matter per year)
Cost \$: 82,092,934	Cost \$: 81,321,798	Cost \$: 4,818,865	Cost \$: 15,016,198
NPV \$: 5,333,179	NPV \$: 4,122,298	NPV \$: 1,840,657	NPV \$: 2,460,456
IRR: 27%	IRR: 25%	IRR: 32%	IRR: 23%
ROI: 3.40	ROI: 3.10	ROI: 4.17	ROI: 3.8
Payback period: 3.77	Payback period: 3.93	Payback period: 3.50	Payback period: 3.5
Incomes increase per capita in \$: 500-625	Incomes increase per capita: \$ 800-1200	Incomes increase per capita: \$ 137	Incomes increase per capita: \$ 440-505
Beneficiaries: Direct: 170,000 Indirect: 700,000	Beneficiaries: Direct: 118,000 Indirect: 708,000	Beneficiaries: Direct: 8,000 Indirect: 48,000	Beneficiaries: Direct: 195,530 Indirect: 700,000
Carbon balance in tCO ₂ e: -131,364.31	Carbon balance in tCO ₂ e: 5,121.45	Carbon balance in tCO ₂ e: 17,318.87	Carbon balance in tCO ₂ e: 14,611.12