Investment Opportunities in Uganda
Presented at the Hand-in-Hand (HIH) Initiative Investment Forum

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1. Introduction

1.1 Background

Agriculture is the leading sector in Uganda employing 70% of the total working population. Uganda has vast potential for growth with fertile land, regular rainfall, and mineral deposits. The country's GDP stands at USD 50 billion, with a population of 45.9 million people. Uganda's total Surface Area is 241,038 km2 (43,938 km2 is water surface); Currently, 80% of Uganda's land is arable but only 35% is being cultivated.

Agriculture contributes 24% to Uganda's GDP and 42% to the total export earnings, with the livestock sector (meat and milk production) accounting for about 21% of agricultural value added. The Agriculture growth rate stood at 5.1% in the FY 2023/24. The private sector's investments are expected to push GDP growth to 6.0% in FY 2024/25.

Uganda's exports have increased due to higher production, improved trade terms, and the resumption of gold trade, although imports have also surged, primarily due to oil-related investments, which has negatively impacted the current account balance. Despite these economic gains, poverty levels remain high, with 20.3% of Ugandans living in poverty as of 2019/20. Reducing poverty will require targeted investments, especially in transforming food systems and bolstering agricultural productivity.

The Government of Uganda among other initiatives, is implementing the **Hand-in-Hand Initiative** to accelerate agricultural transformation and promote sustainable rural development. This initiative aims to eradicate poverty (SDG 1) and end hunger and all forms of malnutrition (SDG 2), aligning closely with Uganda's Vision 2040 and the strategic direction of the National Development Plan IV (NDP IV). The Hand in Hand is aligned to the National Development Plan IV (2025/26-2029/30) which aims at growing the economy by 10-fold economic growth to USD 500 billion in 15 years. The plan focuses on increasing household incomes, creating more employment opportunities, and promoting sustainable industrialization for inclusive growth. The government of Uganda targets to reduce the percentage of the population living below the poverty line from 20.3% to 15.5% and Increasing income per capita from USD 1,051 to USD 2,008.

1.2 Investment incentives

Uganda has emerged as the best investment destination in East Africa, as recognized by the Annual Investment Meeting Awards in Abu Dhabi in 2023. The country ranks among the Top 10 in industrial development according to the African Development Bank's (AfDB) Africa Industrialization Index (2022). In addition, Uganda has one of the fastest-growing economies in the EAC, with a GDP of over USD 40.43 billion (World Bank, 2021). The GDP growth forecast for 2023 is projected at 6.2% (Fisher, Q2 2023). Foreign Direct Investment (FDI) inflows have consistently increased despite the impact of the COVID-19 pandemic, rising from USD 807 million in 2019 to USD 1.14 billion in 2021. This growth is largely driven by Uganda's stable macroeconomic policies, liberalized business environment, strategic location as a logistics hub, and increased regional trade.

Key incentives for investors in Uganda include:

i. Investments in Uganda are secure, with a stable political and economic environment.
ii. Foreign investors can own 100% of their projects, ensuring full control over operations and returns.
iii. Uganda provides access to large domestic, regional, and global markets through trade agreements such as the East African Community (EAC), Common Market for Eastern and Southern Africa (COMESA), the African Continental Free Trade Area (AfCFTA), the Everything But Arms (EBA) initiative, and the African Growth and Opportunity Act (AGOA).
iv. Uganda boasts one of the lowest labor costs in the East African region, making it an attractive destination for labor-intensive industries.
v. Ten-Year Tax Holiday: Agro-processors operating in industrial parks and free zones (export-oriented) enjoy Ten-year tax holiday.
vi. A 0% Import Duty on Plant and Machinery: Import duties on plant and machinery used in agro-processing are waived.

vii. Exemption from Import Duty and VAT: Almost all agricultural inputs are exempt from import duties and VAT, making it cost-effective for businesses in the agriculture sector to operate and expand.

Under the Hand in Hand, government of Uganda prioritized areas with, high-Moderate poverty: 8.7%-35.9% (UNHS, 2019/20), Level of malnutrition and stunting still high-25%-35% Zones are medium priority but with high agricultural potential & proximity to lucrative markets, Zones that have much milk and maize that is sold in informal markets/Low value addition.

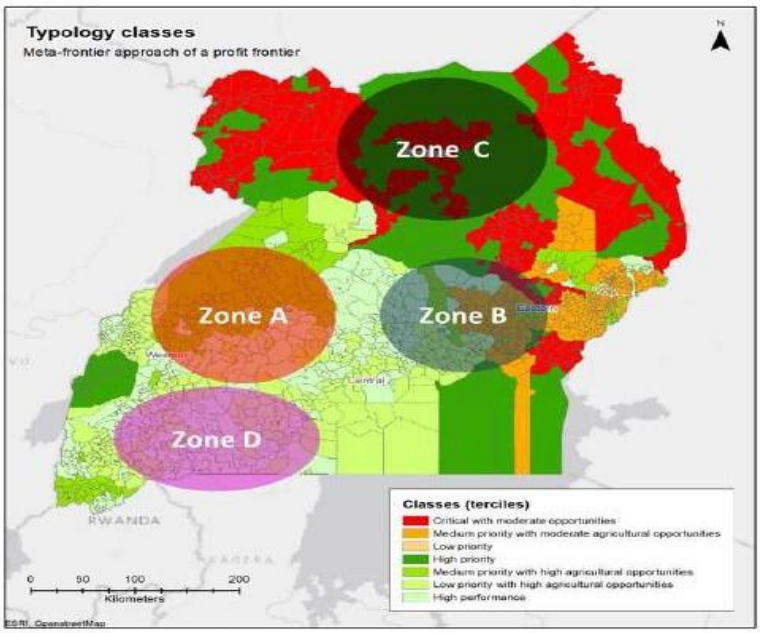
The Ugandan Government has prioritized investment in dairy, beef, and maize value chains under the "Hand in Hand" initiative, focusing on improving food security, nutrition, and trade. The government therefore developed investment cases along the dairy, beef, and maize value chains as evidence that shows how profitable and attractive the three value chains in selected zone are and to guide private and public sector to invest.

Methodology

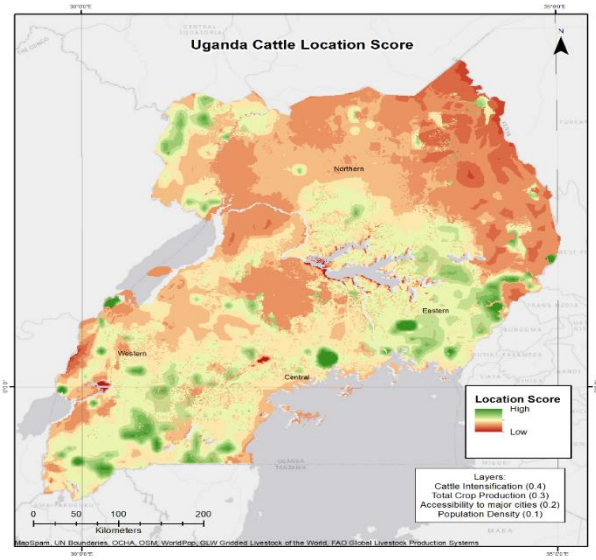
The investment planning methodology utilized both primary and secondary data, with primary data gathered through key informant interviews and zonal workshops involving stakeholders in the dairy, beef, and maize value chains, while secondary data was sourced from relevant online databases.

Geo-spatial maps were developed to illustrate various typologies, including road networks, electricity distribution, land use, market access, and livestock distribution. This analysis highlighted spatial patterns and trends in milk, beef, and maize production and consumption, allowing for a deeper understanding of supply and demand dynamics in these value chains.

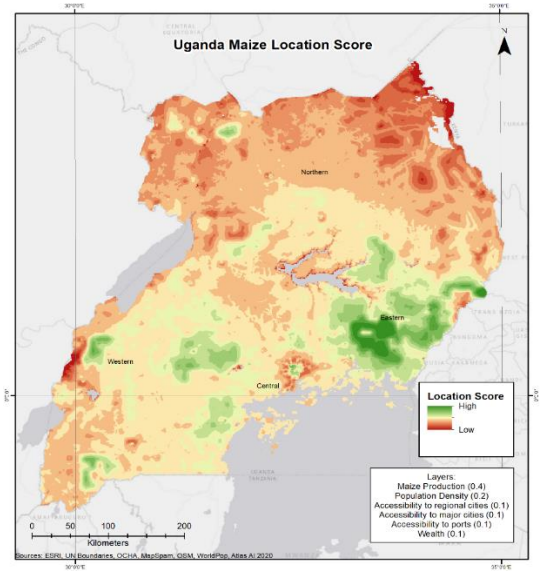
Map 1: Map showing the area covered by the three selected zones



Map 2: Cattle-based Investment location Criteria map



Map 3: Maize-based Investment location Criteria map



Four priority investment zones were identified focusing on regions with high production potential, suitable infrastructure, and favorable climate conditions. These zones including; A in the Midwest, B in the Central cattle corridor, C in Northern Uganda (Acholi and Lango), and D in Southwestern Ankole were selected to guide targeted investments in the dairy, beef, and maize sectors.

An analysis of investment cases included cost-benefit and profitability assessments, applying methods such as Net Present Value (NPV), Internal Rates of Return (IRR), and Return on Investment (ROI) calculations for various opportunities. Seven investment cases were identified across the maize, dairy, and beef sectors—covering dairy processing, beef processing, maize storage and processing, one-stop input centers, and Foot and Mouth Disease (FMD) vaccine manufacturing. These investments aim to address specific challenges in the selected zones, with tailored interventions proposed and associated risks identified along with mitigation strategies

2. Proposed investments

2.1. Investment case 1: Dairy processing

The dairy processing sector in Uganda faces significant challenges, particularly in three selected zones that produce a substantial amount of milk but lack adequate processing facilities. Key issues include insufficient and unaffordable milk coolers for farmers, long distances to milk collection centers (MCCs), and inadequate food-grade dairy equipment. This results in low-quality milk, lower farm gate prices, and reduced incomes for farmers due to high transportation costs and price fluctuations. Additionally, the absence of zonal-based dairy processing plants exacerbates these challenges, limiting market access and the ability to add value to raw milk.

To address these investment gaps, the proposed investment aims to establish modern milk processing plants and enhance milk collection centers in the three identified zones. This will facilitate the production of value-added dairy products such as milk powder, casein, UHT milk, and yogurt. By improving local processing capabilities and reducing the distances that farmers need to transport their milk, the investment will enhance the quality of dairy products, increase farmers' incomes, and stimulate the regional dairy economy. The intervention leverages the fertile soils and favorable rainfall patterns in these zones to ensure sustainable dairy production alongside effective land management practices. The dairy processing investment will involve adding value to raw milk to produce Milk powder, casein, Ultra- High Temperature (UHT) milk and yoghurt as key products

Table 1:Bottlenecks, Investment Areas, Risks, and Mitigation Measures for Dairy Processing Investment

Bottlenecks	Areas of investment	Risks	Mitigation measures
Limited value addition at the zonal level resulting into Low milk farmgate prices	• Four Milk processing plants to add value to milk into: UHT, pasteurized milk, yoghurt & milk powder. • Each plant should have a daily processing capacity of 500,000 litres of milk bringing a total annual capacity of 730 Million Litres for the 4 facilities. • The 4 plants requite Private investment of USD 500million	• Disruption of small-scale milk processors and traders • Market Volatility and Demand Fluctuations • Inconsistent supply of 500,000 liters due to factors like droughts, disease outbreaks, or poor transportation infrastructure • High Energy Consumption.	• Capacity building and integrate them into the supply chain of the new plants. • A diverse product portfolio strategy • Improve dairy production through disease and feed management, breeding and transportation infrastructure upgrades • Energy-efficient technologies, and renewable energy such as solar and biomass
lack of proper milk transportation systems affecting the quality milk	• Procure 6 modern milk tanker trucks @20,000L for transport, each USD 76,000 • Private investment of USD 500,000 in milk tanker trucks	• Tankers may not operate at full capacity during off-peak seasons, leading to underutilization and revenue loss • Large milk tankers may not be able to access remote dairy farmers	• Contracts with dairy producers. Dairy producers will be forced to adopt better intensified approaches to maintain the supply. • Government to invest in improving rural access roads

		due to poor road infrastructure	
In adequate milk bulking and cooling facilities resulting into milk losses	• Install additional 100 Milk coolers each with capacity for 3000 Liters of milk and their matching solar power systems. • Private investment of USD 6.4 Million for 100 Milk Collection/ Cooling Centers	• Intermittent electricity • High operational and maintenance costs of milk coolers and their matching solar power systems • milk coolers may not operate at full capacity during off peak season	• Use solar powered system • Cooperatives with a shared operational model contribute to operational costs. • milk aggregation strategy to consolidate milk from multiple suppliers to the cooling centers during off-peak seasons

Table 2:Analysis of Returns on Dairy Processing Investment

Investment Case 1: Dairy/Milk Processing	Value/Details
Target Products	UHT milk, milk powder/casein, and yogurt
Target Capacity for 4 Facilities	- 139 million litres of UHT - 70 million litres of pasteurized milk - 146 million litres of yogurt - 43 million tons of milk powder/casein
Target Number of Facilities	4
Total Required Investment (USD, million) for 4 Facilities	506.62
Private Investment (USD, million)	506.62
Net Present Value (NPV) (USD, million)	104.57
Internal Rate of Return (IRR, %)	24.53%
Return on Investment After Tax (ROI, %)	12.6%
Payback Period (Years, Months)	8 years, 1 month
Profitability - 10-Year Average Net Profit Margin	10.0%
Number of Jobs Created by Facilities	500
Number of Businesses - Direct Beneficiaries (Farmers, Traders)	960,000

2.2. Investment case 2: Animal feeds investment

The investment in animal feed is aimed at addressing critical challenges in the livestock sector across four selected zones in Uganda. The key issues identified include the inaccessibility of pasture seeds, leading to limited milk production and cattle mortality; inadequate animal feeds exacerbated by climate change and prolonged drought; limited preservation technologies for pastures; and a lack of necessary machinery and equipment. These challenges contribute to a significant deficit in animal feed supply, with Uganda facing shortages ranging from 50% to 70%. To tackle these problems, the proposed intervention involves establishing four animal feed processing plants and silos for silage and hay storage. This investment aims to produce well-balanced and nutritious animal feeds, including dairy meal, poultry feeds, and pig feeds, alongside pastures for preservation as silage and hay. By enhancing feed

production, this initiative seeks to improve livestock productivity, reduce feed-related losses, and mitigate the vulnerabilities exposed by climate change and other crises. The investment is projected to generate gross revenue of USD 3.67 billion over ten years of operations, assuming full operational capacity of the four facilities. This significant revenue potential reflects the high demand for animal feeds, as detailed in Table 3. The statistics highlight the existing demand-supply gaps across different types of animal feeds, underscoring the need for this investment to improve feed availability and quality in Uganda's livestock sector.

Table 3:Demand and supply of animal and poultry feeds in Uganda

Cattle Feed	Annual Demand (Million Tons)	Annual Supply (Million Tons)	Deficit (Million Tons)	Proposed Annual Output (Tons) for 4 Facilities
Cattle Feed	1.07	0.43	0.64	0.41
Pastures	1.20	0.78	0.42	0.82
Chicken/Poultry Feed	5.47	2.19	3.28	1.00
Pig Feed	6.46	3.88	2.58	1.05

Table 4:Bottlenecks, Investment Areas, Risks, and Mitigation Measures in animal feeds

Bottlenecks	Areas of investment	Risks	Mitigation measures
Shortage of pastures during the dry season	• Establish 4 Nucleus estates with; ✓ 1 silage banker (capacity of 122,400 tonnes/year) ✓ a hay ban (capacity of 400,000 tonnes/yr) • Private investment of USD 14 million	• Require significant land, • The demand for silage and hay fluctuate due to changes in livestock populations, climatic conditions, and market dynamics.	• Available government land (in free zones and Ranches) • Diversify product, and explore alternative markets such as exporting or supplying to livestock feed industries.
In adequate animal feed processing plant resulting into inadequate supply of quality animal feeds	Establish 4 animal feed processing facilities in the same Nuclear estate above with; ✓ Dairy meal plant (capacity of 102820tonnes/year) ✓ Poultry feeds plant (capacity of 250920tonnes/year ✓ Pig feeds plant (capacity 263160tonnes/year Private investment of USD 190.4 million in animal feed manufacturing facilities	• High Water and Energy Consumption • fluctuation of prices of raw materials like maize, soybeans, and other feed ingredients due to market demand, and supply chain disruptions	• recycling systems, rainwater harvesting, and renewable energy sources like solar or biomass. • diversified supplier network and engage in contract farming to ensure a steady supply of raw materials

The investment case for animal feeds includes establishing four processing facilities targeting dairy meal, pastures (hay and silage), poultry feeds, and pig feeds. The expected outcomes are as follows:

Table 5:Analysis of Returns on animal feed manufacturing Investment

Metric	**Value/Details**
Target Products	Dairy meal, Pastures (hay + silage), Poultry & Pig feeds
Installed Capacity per Processing Facility	400,000 tonnes/year (Dairy meal)
	204,000 tonnes/year (Pastures)
	1,000,000 tonnes/year (Poultry feeds)
	500,000 tonnes/year (Pig feeds)
Target Number of Facilities	4
Total Required Investment (USD, million)	204.6
Private Investment (USD, million)	204.6
Net Present Value (NPV) (USD, million)	45.6
Internal Rate of Return (IRR, %)	26.70%
Return on Investment after tax (ROI, %)	9%
Payback Period (years, months)	6 years, 4 months
Profitability (10-year average net profit margin)	9%
Number of Jobs Created by Facilities	432
Number of Direct Beneficiaries (Farmers, Traders, Businesses)	1,200,000

2.3. Investment case 3: Manufacturing and distribution of Foot and Mouth Disease vaccine

Foot and Mouth Disease (FMD) poses a significant barrier to Uganda's livestock sector, limiting exports and incurring substantial costs for farmers. Losses at the processing level due to FMD can reach up to 80%. Uganda, with approximately 36.3 million ruminants, requires an estimated 73 million doses of FMD vaccine annually. However, the current inadequacy in vaccine supply and high costs lead to frequent outbreaks and quarantines, discouraging investment in the dairy sector.

The existing investment gap includes the need for infrastructure and capacity improvements for disease diagnosis, control, and vaccine production, with a proposed investment to produce 20 million doses of FMD vaccine annually. To address these challenges, the proposed intervention involves establishing a vaccine manufacturing facility, enhancing infrastructure, and investing in laboratory and cold chain systems. This investment in vaccine manufacturing and distribution not only aims to control FMD outbreaks but also promises significant economic benefits for Uganda's livestock sector, supporting the livelihoods of millions of individuals.

Table 6:Bottlenecks, Investment Areas, Risks, and Mitigation Measures for Manufacturing and distribution of Foot and Mouth Disease vaccine

Bottlenecks	**Areas of investment**	**Risks**	**Mitigation measures**
In adequate supply & high cost of animal vaccines leading to frequent outbreaks and quarantines	Establish an FMD vaccine manufacturing and commercialization production line facility with laboratory infrastructure and vaccine cold chain worth USD 85.42 million	• Initial investment of USD 85.42 million may pose financial challenges • Market Demand Fluctuations • Diversify the product line to include other vaccines or veterinary products • Hazardous biological waste • Energy Consumption and Carbon Emissions	• Feasibility studies, market analyses and a detailed business plan with clear revenue projections, and explore funding opportunities such as partnerships with international organizations, grants, or public-private partnerships • proper disposal methods for biological waste, recycling initiatives • Use of renewable energy sources, such as solar

Table 7:Analysis of Returns on the Manufacturing of Foot and Mouth Disease

Investment case 3: Manufacturing of Foot and Mouth Disease	**Value/Details**
Target products	Vaccines
Installed capacity per processing facility	30 million dozes/year
Target number of facilities	*1*
Total required investment (USD, million)	85.42
Private investment: (USD, million)	85.42
Net Present Value (NPV) (USD, million)	46.8
Internal Rate of Return (IRR, %)	24%
Payback period (years, months)	3 years, 8 months
Profitability-10-year average net profit margin	10%
Number of jobs created by facilities	250
Number of direct beneficiaries (Farmers, traders, businesses)	2,500,000

2.4. Investment case 4: Maize processing

Uganda's maize sector has faced significant setbacks due to aflatoxin contamination, which has negatively impacted the country's ability to export maize to neighboring markets. In recent years, countries like Kenya and South Sudan have rejected Ugandan maize exports due to high aflatoxin levels. For example, in June 2023, 26% of Uganda's maize was rejected by South Sudan, leading to substantial financial losses. The Ugandan government is losing approximately UGX 32.8 billion (USD 9.2 million) in tax revenues annually due to rejected maize exports. Additionally, Uganda's maize starch and cornflake imports have steadily increased, further indicating missed opportunities for local production.

Uganda's maize exports are facing recurring rejections due to high aflatoxin levels, leading to significant financial losses for both the government and farmers. The sector is also plagued by other challenges, including price fluctuations, poor storage facilities, informal business operations, substandard maize grain quality, and inadequate post-harvest handling technologies. As a result, Uganda is not fully capitalizing on the increasing demand for maize-based products like cornflakes and maize starch, relying instead on costly imports.

There is a significant investment gap in improving maize storage and processing facilities to meet both local and export quality standards. Investments are needed to modernize storage infrastructure to reduce aflatoxin contamination, as well as to enhance post-harvest handling and processing capabilities. Establishing processing plants to produce value-added maize products like cornflakes, maize oil, and maize starch would not only reduce imports but also open up export opportunities. This would lead to improved returns on investment, employment creation, and overall economic growth for Uganda's maize sector.

Table 8: Bottlenecks, Investment Areas, Risks, and Mitigation Measures for Maize processing

Bottlenecks	Areas of investment	Risks	Mitigation measures
Below standard milling machines leading to low quality products	• Invest in modern machinery for maize processing • Private investment for 4 zonal modern maize processing facilities, USD 19.3 Million	• High investment costs with high energy consumption	• Explore public-private partnerships • Use of renewable energy sources, such as solar
Limited Value-Added Products with low product diversity	Invest in producing three high value maize products; • Cornflakes • Maize oil • Maize starch	• Low domestic demand	• Focus more on the export market
Poor Post-Harvest Handling	• Investment in training and technology for value chain actors	• Resistance to Change and adopt	• Government to invest in training and Implementation of stringent quality control measure through the Food and Agriculture Regulatory Authority

Table 9: Analysis of Returns on Maize processing

	Maize processing investment
Private Investment (USD, million)	77.2
NPV (10-year) (USD, million)	*6.56*
IRR	23.47%
Payback Period	*5yrs 2 months*
Return on Investment (ROI) - before tax	17.94%
Return on Investment (ROI) - after tax	12.56%
Jobs for 4 facilities	400
Direct beneficiaries (farmers supplying maize)	500,000
Indirect beneficiaries	250,000

2.5. Investment case 5: Modern zonal abattoirs for beef processing and transportation

The beef processing sector in Uganda faces numerous challenges that hinder the efficiency and profitability of the beef value chain, particularly in two selected zones. The current system relies heavily on the transportation of live cattle to central markets, particularly Kampala, which poses various logistical and economic issues. There is also a pressing need for modern infrastructure to support efficient beef processing and preservation. The beef processing is faced with a number of challenges that include: High Cost of Transportation, Inadequate holding space before slaughter, high fuel Costs, Insufficient facilities for preserving beef, lack of knowledge and skills among local operators in modern beef processing techniques,

The proposed investment in modern zonal abattoirs will address these investment gaps and has the potential to deliver a better return on investment, if it purchases animals itself, transports and sells good quality carcasses to the market. A commercial abattoir in each zone presents an exciting opportunity for the development of the meat/beef sector along the cattle corridor. One of the advantages of this investment are: a reduction in adverse environmental impact in the big cities, decreased disease transmissions caused by long distance transportation of live animals, local employment opportunities to boost rural economies and improved business efficiency as transport is only of carcass. In addition, this model also presents a future investment opportunity of combining a commercial abattoir with a beef processing facility which has the potential to increase profit margins further and help meet an existing and growing demand for local and regional premium beef products.

Summary beef sector Investment opportunity

The cattle slaughtered will produce beef and other offcuts such as hides and offals, which are also sold and generate income. Assuming that an abattoir can have 300 cattle slaughtered daily, the FOUR proposed abattoirs will slaughter 312,000 cattle annually to produce 49,920 tonnes of beef annually. The beef, offals and hides in each facility will generate about USD 32 million in the first year (Table 32). The potential markets for the abattoirs will be supermarkets, butchers, household consumers and beef exporters.

Table 10: Beef, hides and offcuts production and expected gross revenues in 4 zonal abattoirs

Beef , offals & hides	Annual
Annual beef Production (Kgs)	49,920,000
Offals	312,000
Hides	312,000
Revenues (USD)	31,979,602

Table 11: Bottlenecks, Investment Areas, Risks, and Mitigation Measures for Beef investment

Bottlenecks	Areas of investment	Risks	Mitigation measures
Low farmgate live cattle prices	• Establish 4 zonal abattoirs with a modern beef transport system • Private investment of USD 18.6 million	• Low beef domestic demand • Environmental contamination associated with cattle slaughter, air pollution and waste disposal	• Expand to and diversify into export markets • Construct waste disposal infrastructure & use of blood and hone waste as raw Materials
Low beef cattle productivity since only 9 percent of exotic cattle are purely for beef, so, the private sector will improve 40% of beef cattle annually (125,000 cattle)	• Invest in beef breed improvement in 4 zones- • Private investment of USD 160 million	• Slow adoption of improved breeds among cattle keepers who are culturally attached to their traditional breeds • Slow pace of supply of the breeds by NAGRIC & DB in case of high demand	• Mass sensitization of the cattle keeping communities on the importance of breed improvement • Lump up capacity to deliver the breeds & other technologies to the farmers in time
Limited access to the cattle supply zones due to poor roads	• Community access roads (2,480Km) in four zones	• Environmental damage where new roads are opened	• Plant trees along new roads • Construct drainage systems
No value addition to cattle & beef due to lack of electricity or unreliable energy supply in rural areas	• Electricity line extension to the 4 zones	• Environmental damage where new power lines are opened	• Plant trees along new power lines

Table 12: Analysis of Returns on Beef processing

Investment case 4: Beef processing	**Value/Details**
Target products	(Beef, offals & hides & skins)
Installed capacity per processing facility	*6,000 heads slaughtered/week or 960 tonnes of beef/week*
Target number of facilities	*4*
Total required investment (USD, million) for 4 facilities	18.6
Private investment: (USD, million)	18.6
Net Present Value (NPV) (USD, million)	4.6
Internal Rate of Return (IRR, %)	23.6%
Return On Investment after tax (ROI, %)	12.94%
Payback period (years, months)	3 yrs 2months
Profitability-10-year average net profit margin	2%
Number of jobs created by facilities	200
Number of business direct beneficiaries (Farmers, traders,	200,000

2.6. Investment case 6: Hides, Skins & Leather processing

The hides, skins, and leather industry in Uganda is one of the most significant contributors to livestock export earnings. Despite the strong presence of hides and skins in the global market, the industry primarily exports raw hides and skins, with minimal value addition. In 2023, Uganda's leather exports were valued at approximately $11 million, yet a large portion of the leather remained unprocessed. Meanwhile, Uganda imports 15 million pairs of shoes annually, highlighting the imbalance between the raw material exports and the domestic production of leather goods. The key problem is that Uganda exports around 90% of its hides and skins in raw form, missing out on the potential benefits of value addition. This prevents the country from maximizing the economic potential of its leather industry. Furthermore, the high importation of shoes indicates a missed opportunity to process hides and skins domestically and manufacture finished leather products, which could meet local demand and reduce reliance on imports. There is a significant investment gap in leather processing infrastructure and value addition capabilities. Uganda needs investments in modern processing facilities that can transform raw hides and skins into value-added leather products, such as footwear and accessories. By addressing this gap, Uganda could increase its export earnings, create jobs, and reduce imports of leather products like shoes. Investing in leather processing facilities would enhance Uganda's ability to compete in the global market while meeting domestic demand for leather products, leading to a more balanced and profitable livestock industry.

Table 13: Bottlenecks, Investment Areas, Risks, and Mitigation Measures for hides and skin processing

Bottlenecks	Areas of investment	Risks	Mitigation measures
Poor Quality of Raw Materials: The quality of hides and skins is often compromised due to poor animal husbandry practices and improper preservation methods.	Establish one central tannery to serve 4 zones Private investment of USD 7.8 million in a tannery	• Low supply of quality hides and skins • Environmental contamination associated with hides processing, air pollution and waste disposal	• Expand to and diversify into export markets • Construct waste disposal infrastructure & use of blood and hone waste as raw materials
High expenditure on shoe and bag imports	Private investment of USD 41.4 million in a shoe and leather factory	Environmental contamination associated with hides processing, air pollution and waste disposal	Construct waste disposal infrastructure & use of blood and hone waste as raw materials

Table 14: Analysis of Returns on Hides, Skins & Leather processing

Investment case 5: Hides, Skins & Leather processing	Value/Details
Target products	Wet Blue, Crust leather, finished leather, &gelatin
Installed capacity	*20 tonnes/Hr*
Average expected annual revenues (USD, million)	149.9
Total required investment (USD, million)	20.9
Net Present Value (NPV) (USD, million)	23.2
Internal Rate of Return (IRR, %)	25.2%
Return On Investment after tax (ROI, %)	32.8%
Payback period (years, months)	5yrs 1 month
Profitability-10-year average net profit margin	16%
Number of jobs created by facilities	80
Number of direct beneficiaries (Farmers, traders, businesses)	500,000

2.7. Investment case 7: One-stop input supply and mechanization centers

In the selected zones, stakeholders have identified counterfeit and expensive agricultural inputs, such as maize seeds and agro-chemicals, as major obstacles to productivity and profitability in the maize business. These fake inputs cause significant economic losses to farmers, traders, and processors and disrupt national food security due to reduced yields. Additionally, high costs for tractor hire services, rising human labor costs from rural-to-urban migration, and the reluctance of youth to engage in agriculture are further hindering productivity. These challenges underscore the need for mechanization to improve efficiency in the sector.

The maize industry in Uganda is facing a serious threat from counterfeit agricultural inputs, such as fake seeds and agro-chemicals, which severely reduce productivity and profitability. Coupled with high mechanization costs and increasing labor expenses, these issues are weakening household and national food security. The lack of access to genuine, affordable inputs and reliable mechanization services is impeding the ability of farmers to optimize their production potential. To address the problems of counterfeit inputs and limited mechanization, there is a critical need for investment in one-stop input supply and mechanization centers. These centers would provide farmers with access to affordable, high-quality seeds, agro-chemicals, and mechanization services, reducing their reliance on costly human labor and improving overall productivity. This investment would fill the existing gap in agricultural input distribution and mechanization, leading to increased maize production, economic stability, and enhanced food security

Table 15: Bottlenecks, Investment Areas, Risks, & Mitigation for One-Stop Input Supply and Mechanization Centers:

Bottlenecks	Areas of Investment	Risks	Mitigation Measures
Fake/counterfeit and costly inputs (maize seeds, agro-chemicals) reduce productivity and profitability in the maize business.	Establish one-stop input supply and mechanization centers in four zones.	Risk of counterfeit inputs still entering the market.	Strengthen partnerships with NARO for quality seed multiplication and supply, along with stringent input quality control measures.
High cost of tractor hire services and rising human labor costs due to rural-to-urban migration.	Stocking and supply of agricultural machinery and equipment for sale and hire.	Limited availability of affordable mechanization services and skilled operators.	Facilitate affordable tractor hire services and mechanization through public-private partnerships and youth training in mechanization.
Low input access and availability of mechanization services in rural areas.	Distribution of improved maize seed, agro-chemicals, and mechanization equipment.	Unreliable distribution networks or supply chain disruptions.	Develop localized centers close to farmers and invest in efficient supply chain management and logistics.
Youth's negative attitude towards agriculture and labor shortages.	Supply of quality inputs (seeds, agro-chemicals), and advisory services to improve productivity.	Low adoption of mechanization by farmers, particularly youth.	Conduct awareness campaigns and incentivize youth participation in agriculture through training and job creation in mechanization services.
Pest and disease effects due to substandard inputs.	Multiplication of maize seeds with NARO, run under a seed company model.	Spread of pests and diseases due to poor-quality inputs.	Supply certified seeds, agro-chemicals, and advisory services to mitigate pest and disease outbreaks on farms.

Table 16: Analysis of Returns on One-Stop Input Supply and Mechanization Centers:

	One stop centre investment
NPV (10-year) (USD, millions)	*1.51*
IRR	*22.52%*
Payback Period	*6yrs 4months*
Return on Investment (ROI) - before tax	*16.32%*
Return on Investment (ROI) - after tax	*11.42%*
Direct beneficiaries	550,000
Indirect beneficiaries	1,200,000

2.8. Investment case 8: Banana processing

Uganda's banana production has experienced significant growth, rising from about 4.6 million tons in 2017 to approximately 14 million tons by 2023. Despite this increase, the country faces challenges in adding value to its banana products, which leads to a reliance on informal exports that nearly double formal exports. In 2022, Uganda's formal banana exports amounted to 8,930 tons, while informal exports reached 16,938 tons, generating a total income of about USD 14 million. The key banana-producing zones include the Western, Midwest, Central farmlands, and the Northern region, which has potential for further growth in banana production. The low level of value addition to bananas is a significant barrier to productivity and profitability within the sector. This leads to high post-harvest losses, undermining both household and national food security. Additionally, there is a lack of technology and capacity to efficiently use banana waste, such as banana corms, further limiting the economic potential of banana production.

There is an urgent need for investment in value-added processing to reduce post-harvest losses and improve banana waste utilization. The proposed investment includes setting up four banana processing facilities across the key producing zones. These facilities will process banana fruit into juice and wine, and convert banana corms into fiber and ethanol. The expected outputs include 10,260 tons of processed banana fruit in the first year, with an annual growth of 10%, generating revenues of USD 3 million from juice, USD 3.3 million from wine, USD 0.2 million from banana fiber, and USD 0.6 million from ethanol. This investment will address the lack of value addition and improve both profitability and sustainability in Uganda's banana sector.

Table 17: Bottlenecks, Investment Areas, Risks, and Mitigation Measures banana processing

Low banana fruit value addition leading to high post-harvest losses	Establish four banana processing facilities in 4 zones Private investment of USD 36.8 million in a banana juice and wine factory	• Low supply of banana fruits • Environmental contamination associated with factory processing, air pollution and waste disposal	• Establish banana growers' cooperatives/groups • Construct waste disposal infrastructure
in Uganda, almost all farmers leave the banana pseudo-stems in their gardens after harvest. Few individual entrepreneurs are currently involved in the extraction of banana fibre to make products such as carpets, hair extensions, and paper bags.	Establish a banana fibre and ethanol processing line Private investment of USD 24.5 million in a banana juice and wine factory	• High cost of transporting the bulky raw materials • Environmental contamination associated with factory processing, air pollution and waste disposal	• Do primary processing of corms at farm level to ease transportation • Construct waste disposal infrastructure

Table 18: Analysis of Returns on Banana processing

	Banana fruit and corms/ peduncles and pseudo-stems processing investment
NPV (10-year) (USD, million)	*6.36*
IRR	24.33%
Payback Period	*4yrs 1 months*
Return on Investment (ROI) - before tax	18.99%
Return on Investment (ROI) - after tax	13.30%
Jobs for one facility	100
Direct beneficiaries (farmers supplying banana fruit and corms)	200,000
Indirect beneficiaries	1,000 000

Investment Case Summary for the World Food Forum

- **Total Investment Target: USD 1.01 Billion for the four investment cases to be presented at the World Food Forum.**
- **Private Sector Contribution: USD 873.82 Million**
- **Public Sector Contribution: USD 138.6 Million**
- **Public sector investments will cover land, roads, electricity, internet, and water infrastructure.**

1. Dairy Processing Investment

- ❑ **Target Products**: UHT milk, milk powder, casein, yogurt
- ❑ **Capacity**: 4 facilities (730 million litres annually)
- ❑ **Total Investment**: 541.2 Million USD
- ❑ **Investment Gap**
- ❑ USD 506.62 million

Returns:

- ✓ **NPV:** USD 104.57 million
- ✓ **IRR:** 24.53%
- ✓ **Payback Period**: 8 years, 1 month
- ✓ **Jobs created** 500
- ✓ **Direct Beneficiaries:** 960,000 farmers and traders
- ✓ **Per Capita Income**: USD 700 (64% increase)

2.Animal Feeds Investment

- ❑ **Target Products**: Dairy meal, hay, silage, poultry, and pig feeds
- ❑ **Capacity**: 4 facilities (2.1 million tonnes annually)
- ❑ **Total Investment**:
  230.075 million USD
- ❑ **Investment Gap**
  USD 204.6 million

Returns:

- ✓ NPV: USD 45.6 million
- ✓ IRR: 26.7%
- ✓ Payback Period: 6 years, 4 months
- ✓ 432 jobs created
- ✓ Direct Beneficiaries: 1.2 million farmers
- ✓ and businesses

- ✓ Per Capita Income: USD 676 (62% increase)

3. Maize Storage and Processing

- ❑ **Target Products**: Maize storage, Cornflakes, Maize oil, Maize starch
- ❑ **Total Investment**: 104.5 million USD
- ❑ **Investment Gap** USD 77.4 million

Returns:

- ✓ NPV: USD 6.56 million
- ✓ IRR: 23.47%
- ✓ Payback Period: 5 years, 2 months
- ✓ 400 jobs created
- ✓ Direct Beneficiaries: 100,000 farmers
- ✓ Indirect Beneficiaries: 1 million people
- ✓ Per capita Income: USD 286 (26% increase)

4. Foot and Mouth Disease Vaccine Manufacturing

- ❑ **Target Products**: FMD vaccines
- ❑ **Capacity**: 30 million doses/year
- ❑ **Total Investment**: 93 million USD
- ❑ **Investment Gap** USD 85.42 million

Returns:

- ✓ NPV: USD 46.8 million
- ✓ IRR: 24%
- ✓ Payback Period: 3 years, 8 months
- ✓ 250 jobs created
- ✓ Direct Beneficiaries: 2.5 million farmers & traders
- ✓ Per capita Income: USD 300 (27% increase)

Summary of other additional Investments

5. Modern Zonal Abattoirs for Beef Processing

- ❑ **Target Products**: Beef, offals, hides, and skins
- ❑ **Capacity**: 4 facilities (960 tonnes of beef weekly)
- ❑ **Total Investment**: USD 18.6 million
- ❑ **Returns**:

- ✓ NPV: USD 4.6 million
- ✓ IRR: 23.6%
- ✓ Payback Period: 3 years, 2 months
- ✓ 200 jobs created
- ✓ Direct Beneficiaries: 200,000 farmers and traders
- ✓ Per capita income: 292 (27% increase)

6. Hides, Skins, & Leather Processing

- ❑ **Target Products**: Wet blue, crust leather, finished leather, gelatin
- ❑ **Capacity**: 20 tonnes/hour
- ❑ **Total Investment**: USD 20.9 million
- ❑ **Returns**:

- ✓ NPV: USD 23.2 million
- ✓ IRR: 25.2%
- ✓ Payback Period: 5 years, 1 month
- ✓ 80 jobs created
- ✓ Direct Beneficiaries: 500,000 farmers and traders
- ✓ Per capita Income: 304 (28% increase)

7. One-Stop Input Supply and Mechanization Centers

- ❑ **Target Services**: Input supply, mechanization services
- ❑ **Total Investment**: USD 1.51 million
- ❑ **Returns**:
- ✓ NPV: USD 1.51 million
- ✓ IRR: 22.52%
- ✓ Payback Period: 6 years, 4 months
- ✓ Direct Beneficiaries: 550,000
- ✓ Indirect Beneficiaries: 1.2 million
- ✓ Per Capita Income: 60 (5% increase)

Banana Processing

- ❑ **Target Products**: Banana juice, wine, fiber, ethanol
- ❑ **Capacity**: 4 facilities
- ❑ **Total Investment**: USD 6.36 million
- ❑ **Returns**:
- ✓ NPV: USD 6.36 million
- ✓ IRR: 24.33%
- ✓ Payback Period: 4 years, 1 month
- ✓ 100 jobs created
- ✓ Direct Beneficiaries: 200,000 farmers
- ✓ Indirect Beneficiaries: 1 million
- ✓ Per Capita Income: 51 (5% increase)