

Agriculture- Meat Sector Profile



ACRONYMS

COMESA	Common Market of East and Central Africa
FAO	Food and Agriculture Organization of United Nations
GDP	Gross Domestic Product
ISO	International Standards Organization
Kwh	Kilo Watt Hour
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MW	Mega Watts
NEMA	National Environment Management Authority
Pa	Per annum
UBOS	Uganda Bureau of Statistics
UIA	Uganda Investment Authority
UK	United Kingdom
UNBS	Uganda National Bureau of Standards
VAT	Value Added Tax

1.0 BACKGROUND INFORMATION ON THE PROJECT

1.1 Introduction of the meat profile

Uganda has one of the best climates in Africa that is moderate with cool temperatures, and receives rainfall throughout the year. The country has rich and green vegetation with tropical rain forests and water bodies covering most parts of the country. The River Nile, one of the longest rivers in the world, starts its long journey to Mediterranean Sea from Uganda. Uganda is home to the Lake Victoria, the largest lake in Africa and also the second largest fresh water lake in the world.

Uganda lies astride the equator and enjoys a unique location at the heart of sub-Saharan Africa within the East African region. The country has been able to achieve macro-economic stability when clouds of uncertainty rocked many regions of the world. Uganda is one of the fastest growing economies in Africa with GDP growth rate averaging 7.7% per annum since the year 2000, making the country the fastest growing economy in East Africa.

In order to provide information to investors to Uganda, this Meat sector profile has been prepared as a guide on the potential investment opportunities in the country. The profile gives highlight on investing in a number of areas including: beef processing, meat canning, modern abattoirs, feed Lot, and poultry.

1.2 Overview of the Meat sector

Beef production and meat canning

- Agriculture is the most important sector in Uganda's economy; accounting for 23.7% of GDP, 70% of the labour force and 85% of exports products in 2008/09.
- Livestock production in Uganda contributes 7-9% of the total GDP and 17-19% of agriculture GDP (MAAIF, 2007).
- Cattle are the main source of meat in the country and are reared on rangelands which occupy 84,000 km². The cattle corridors extend from Moroto and Kotido in North East through central Uganda to South West of Mubende, Masaka Rakai and Mbarara.
- Of the cattle population, 80% is in the South West where the average number per household is 2.11 animals compared to Northern Uganda with 0.67 and the national average of 1 animal per household.
- The improved cattle breeds are kept under intensive management, mostly on small scale, medium sized farms and zero grazing. The indigenous breeds are mainly kept under extensive system.
- The traditional breeds are East African short horn, zebu, long horned Sanga Ankole, Turkana and Toposa. The exotic breeds are Charolis, Hereford, Aberdeen, Beef short and Braham.
- Between 1991 and 2000 the cattle population in Uganda increased from 5.1 to 6.1 millions and in 2008 the cattle population was found to be 11.4 million.

Modern Abattoirs

There are currently no abattoirs in Uganda that could be upgraded to meet international requirements. In Uganda, animals are slaughtered near the place and time of consumption. Towns are supplied with meat by movement of animals to the towns, where they are slaughtered and quickly distributed to consumers. The attendant constraints in this system are that it is inefficient and accumulates waste in the urban areas. The slaughter industry can be divided into five main categories:

i) Family slaughter

Nearly half the animals slaughtered in the country are slaughtered at this level. There is no infrastructure or meat quality assurance service in this category.

ii) Slaughter at village markets

At every village market, which may be weekly or bi-weekly, there is meat offered for sale that is slaughtered on a slab for some markets and on the ground for other markets. Again, there is limited infrastructure and no meat quality assurance service.

iii) Town slaughter slabs

Eighty percent (80%) of all towns in the cattle corridor have slaughter slabs that serve as places of slaughter for the supply of meat to town residents, restaurants and hotels. These concrete slabs are built on raised ground to enable the animal to be slaughtered on clean ground; 75% of these slabs have no facilities for slaughtering animals off ground, or other basic facilities. The drainage system is poor or non-existent and there are no essential facilities such as water supply, toilets or offices.

iv) Urban slaughter houses

These are found in all major towns such as the original 17 district headquarters as at 1972. Most of them have rudimentary slaughter facilities and butchery establishments. The markets tend to be held on a daily basis and in some places there are permanent buildings and a full-time meat inspector. Most of these buildings are in dire need of rehabilitation.

v) Abattoirs

There are two abattoirs in Uganda which slaughter and cut meat for the local market:

- Uganda Meat Industries, Kampala;
- City Abattoir, Kampala.

Poultry processing

- One of the major livestock kept in Uganda are chicken, turkey, guineas fowls, ducks, pigeons, geese and ostriches, of which chicken are the most kept poultry.
- The national chicken flock is about 23.5 million composed of 3.7 million (15.8%) exotic/cross chicken and 19.8 million (84.2%) backyard. (Ref. UNHS 2007).
- The production systems are mainly two; commercial intensive where the birds are kept in confinement, and mostly found in urban centres, with exotic and cross breeds. The other is free range, mostly for local breeds in rural areas.
- Most of the poultry in Uganda is kept at the backyard. Out of 4.2 million agricultural household, there are 44,000 agricultural households that keep exotic/cross chicken. (UNHS, 2005). This number constitutes 1.1% of the agricultural household.
- According to Ministry of Agriculture, the broiler chicken is mostly from small scale farms, with poultry population of below 1,000 birds, constituting 30%. The large farms consisting of 1,000-60,000 birds constitute 70%.
- In 2006, the country produced 44,000 tonnes of broiler meat. From 2003-2005, the poultry meat increased by 22.9% and the poultry production by 38.7%. Per capita consumption of poultry has increased from 1 kg in 1996 to 2kgs to date and 80 % of broiler meat is consumed locally (UNHS, 2006).
- There are two major players in the industry: Ugachick Poultry Breeders Ltd; and Bright Chicks, both of which are engaged in hatchery, breeding and slaughtering and processing of chicken. The products are sold through hotels, supermarkets and restaurants. The other players are the small scale backyard slaughter. This is also sold through supermarkets, hotels and restaurants.

Livestock Population in Uganda

Year	Cattle	Goats	Sheep	Poultry
1996	5,301	6,913	1,175	22,050
1997	5,460	7,604	1,292	22,712
1998	5,775	8,364	1,422	23,648
1999	5,957	9,201	1,564	24,830
2000	6,143	10,121	2,434	26,072
2005	7,531	1,217	1,217	23,523
2008	11,400	12,500	3,400	37,400

Source: MAAIF, 1999; UBOS, 2008.

1.3 Current Activities in the meat sector

a) Meat production

Most slaughtered animals are cull animals raised on small rural mixed farm and specialized beef ranches. The annual cost of maintaining a farm enterprise for meat production, based on local livestock production system, is low for most of beef supplies (small holders represent 94% of the national herd). The fact that the animals produce both beef and milk, the cost of maintaining is shared between the two products, which can then be offered in the market at lower cost. Meat is mostly from the traditional breeds, mainly Ankole cattle and zebu. A study conducted in 2007 reveals that beef is the major meat produced in Uganda as shown below.

Meat Production 2007

Meat produced	Quantity in tones
Beef	147,552
Goat meat and mutton	29,328
Poultry meat	18,424

(UBOS, 2007)

b) Beef Processing

The meat market in Uganda can be categorized into three:

- Traditional Uganda market; which is supplied with low quality chopped meat with bones and is low priced meat;
- The high quality Uganda market, which is supplied with high quality meat mostly for high income earners; and
- Expatriates which segment of the market; gets their products from supermarkets, hotels, restaurants and take-a ways.

There are 7 small scale meat processing plants in Uganda, processing between 300- 700 kgs of processed meat products per day. All the processing plants are privately owned, mostly by foreigners. Beef products on the Uganda market include: meat cuts such as sirloin, fillet, topside, rump steak, t-bone steak, rib roast, silverside, eye roast and shin-on bone; Coarse ground products like, meat burgers, minced meat, barbeque sausages, merguez, and fine emulsified products like fresh beef sausages, frankfurters and meat loaf.

1.4 Competitiveness of Uganda's Meat Sector

Uganda being landlocked presents a major competitive advantage since it is a net surplus agriculture producer in the region. The Government commissioned a study which recommended the establishment of structures and systems that generate international confidence. In this regard, in order to enhance penetration of the European market, the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) is working at the establishment of Disease Control Zones (DCZs) as the first step towards production of healthy animals. MAAIF hopes that the establishment of DCZs should help investors build a world-class abattoir, equipped and operated to internationally accepted standards of hygiene. Eventually the DCZs will become Disease-Free Zones (DFZs) with a larger national abattoir network.

Poultry

- Uganda has low labour costs and, due to the favorable environmental conditions, the costs of feeds are low compared to the regional markets. The steady supply of water makes Uganda a competitive investment destination in the Great Lakes Region.
- Uganda has abundant land for production and processing and the climate and soils are good for poultry feed production.
- Improved infrastructure in form of upgraded road network all over the country facilitates the timely delivery of chicken to processing plants, and finished products to the domestic and regional markets.
- There is up to date air transport that promotes and facilitates exportation of poultry products within the region.
- Uganda possesses good supply of portable water, cleaning and water for waste disposal.

Beef

- The Ankole cattle, the main supplier of meat in Uganda has a low cholesterol level (48.4mg-60.5mg/100mg of meat) and low fat (3.33%-6.48%) level which is a good health quality attributes (Ankole Watusa Study, 1993).
- Uganda's meat is known for good taste and flavor; this is a good market quality attribute.
- Strategic geographic location: Uganda is located in the Great Lakes Region which is ideal for supplying the growing regional markets in Kenya, Tanzania, Southern Sudan, Congo and Rwanda.
- Uganda's beef is produced under halaal slaughter with independent halaal certifiers. This is a requirement of some markets like that of the Middle East and Arab Countries.
- Uganda's animals are fed on natural grass, the beef is organically produced. This means there are no grain feeding and nutritional supplements.
- Favorable business environment offered through liberalization of the economy, the government is encouraging Private Sector participation in the economy.
- There is government support to ensure meat processing enterprises attain innovative Quality Assurance Systems such as ISO.
- Due to availability of raw materials and cheap labour, abundant supply of water and power, the cost of production is lower in Uganda compared to the neighboring countries of Rwanda, Burundi and Eastern Congo. This makes Uganda have a comparative advantage.

1.5 Favorable conditions for investing in Uganda

Beef consumption

Consumption of beef is increasing both in absolute terms and on per capita basis, as the income of people increases. Beef consumption in Uganda is only 6 kgs per capita, which is below the recommended 50 kgs by FAO. The growing incomes represent an opportunity to invest in the sector.

Export Potential

There is an export potential to the neighboring countries where endemic diseases and hostile climate hinder production of quality beef and lack of land.

Access to resources

Land: Uganda has abundant land for industrial development and good and reliable supply of water from lakes and rivers.

Area covered by water and land in Uganda

Total area	236,040 km ²
Land	199,710 km ²
Water	36,330km ²

Land use

Arable land	22%
Permanent land	9%
Other uses	69%

Raw materials

Uganda has good supply of cattle for slaughter and according to the livestock census conducted in 2008, Uganda has a cattle population of 11 millions, this is an increase of 3.9 million from 2005 and about 500 cattle is slaughtered every day in Kampala.

There is an increasing number of both large scale and small scale poultry farmers. These will offer broilers for the slaughter and processing. Organized contract farming schemes are available which supply the processing companies.

Labour

There is enough supply of skilled and unskilled labour in Uganda for meat processing industry. There are graduates in food technology from Universities who can easily adapt to new technology. The casual labour rates are low with minimum wages of US \$ 2-2.5 per day.

Availability of financing

There are a number of regional and International Commercial Banks including Development Banks that offer long term financing for viable projects.

Access to Markets / Market Niches

- The domestic market is about 28 million people. The market for processed beef products especially the convenience packed hygienic beef products, is steadily growing due to; increased demand resulting from increased population, which is estimated at 3.4 % per year and per capita incomes.
- There is a tremendous expansion of the tourism industry bringing in a new class of consumers demanding quality and sometimes unique products.
- There is a dramatic springing up of first class supermarkets like Uchumi, Shoprite, Nakumatt and Capital Shoppers, as well as Hotels, Restaurants and Takeaways.
- There is export potential to neighboring countries of the greater Regional East African Community comprising of Kenya, Uganda, Rwanda, Tanzania and Burundi, with a population of 120 million people, as well as COMESA region, beef cows are also exported to Sudan. Most of these countries have got limited available land, unpredictable weather pattern conditions and high population growth. This offers an opportunity for Uganda to penetrate the markets.
- The Middle East and Arab countries offer a wider market for Uganda beef because the special requirement to halaal slaughtering is compatible with Uganda beef industry.

Capability and competence

Uganda has skilled human resource from Universities and Technical Colleges which is trainable and easily adapts to new technologies. There are graduates in Food Technology with industrial practical experience acquired from existing processing plants. Makerere and Kyambogo Universities have 30-40 graduates in food science and technology each year

Favorable Location

- Uganda is land locked and well connected with roads to the neighboring countries of East Africa and has a well-developed basic infrastructure, electricity and water supplies, required for establishment of beef and poultry processing industry.
- Uganda is located at the Equator and has tropical climate. This means the animals are reared throughout the year supplying meat all year, round for beef processing.
- There is earmarked land by the government for beef processing, this is in cattle corridor areas, of South Western Uganda and the government is encouraging establishment of meat processing units near the cattle producing areas.
- The government through UIA has also earmarked land for Industrial Development at Namanve Industrial Park. This is near the main abattoirs and market for products. UIA has also got land for investors in cattle corridor areas of Soroti, Mbarara, Nakasongola, Masindi etc.
- Uganda has a favorable climate for growing of crops which can be used as feeds for birds.

2.0 INVESTMENT OPPORTUNITIES IN THE BEEF SECTOR The proposed investment opportunities in the dairy sector include processing one or a combination of the following:

- Beef processing
- Meat canning
- Modern Abattoirs
- Feed Lot
- Poultry

2.1 Beef Processing

Purpose of the proposed project

To produce beef for the domestic and export markets

Proposed Projected Capacities and Processing Requirements

No.	Heading	Details /Assumption
1	Planned products to be produced	<ul style="list-style-type: none"> • The plant is assumed to produce quality beef cuts and processed meat products; fresh and cooked sausages, beef hams and smoked beef.
2	Quantities to be produced	<ul style="list-style-type: none"> • It is projected that the plant has a capacity of 1,000 kgs of beef cuts and 1,000 kgs of processed meat products like sausages; it will start with 60% production capacity in 1st year, and increasing at 10% per year.
3	Equipment and machinery required	<ul style="list-style-type: none"> • A complete set of meat processing plant is required with the following details • Deboning room with band saw, working tables and butcher tools • Processing room with mincer, bowl cutter, filling machine, smoking unit • Cold rooms • Vehicles for marketing
4	Premises requirements	<ul style="list-style-type: none"> • A building with recommended standards from Uganda National Bureau of Standards (UNBS) • A processing room of high roof, tiled walls and floor; • sufficient rooms for processing, cold room, laboratory personnel service rooms, power (generator house, cold room store,
5	Sources of the machine	<ul style="list-style-type: none"> • German, China, Netherlands and Belgium
6	Specialized Human Resources requirements	<ul style="list-style-type: none"> • Meat Processing Technologists, • Meat quality controllers; • Business manager • Marketing staff • Mechanical Engineer
7	Potential Markets	<ul style="list-style-type: none"> • Domestic market, regional markets and Middle East.

Estimated Total Investment Costs (US\$)

Land	75,000
Site preparation and development	25,000
Civil works, structures and	162,500
Machinery and equipment	500,000
Tools	10,000
Vehicles	75,000
Furniture, office equipment	35,000
Pre-operating expenses	47,500
Working capital	238,066
Total	1,168,066

Main Production Inputs Locally Available

Prices for raw materials, spices, additives and casings

Description	Price/kg (US\$)
Beef	2.13
Vegetable fat	1.6
Ice flakes	0.094
Additives and spices	4.75
Non-meat ingredients	1.89
Casings	0.58

Equipment/tools

Description	Price (US\$)
Chopping block	50
Cutting knives	10
Steel sharpener	10
Thermometer	300
Ph meter	300

Selected Factor Costs

Proposed Personnel and labour costs

Description	Price (US\$)
Chopping block	50
Cutting knives	10
Steel sharpener	10
Thermometer	300
Ph meter	300

Proposed Infrastructure available at proposed site

Type	Description	Unit costs (US\$)
Transport – Road	40 ft container from Mombasa to Kampala including clearing fees. and insurance	2000
Telephone	Fixed line per minute on average	0.05
	GSM, post-paid per minute on average	0.12
Electricity	National Grid , 1KWh for large scale industry	0.075
	National Grid 1 kwh for Large scale industry	0.3
	National Grid 1 KWh for industry consuming more 10 MW per day	0/019
Diesel	Per liter	1
Water	Industrial per cubic meter	0.68
Transport	40 ft container from Mombasa to UK	3000

Preliminary Financial Viability Analysis of the Proposed Investment

Assumptions

1. Full production capacity at 1,000 kgs of quality beef cuts and 1,000 kgs of sausages per day
2. Production capacity in 1st year of 60% (600 kgs of beef cuts and 600 kgs of sausages)
3. Increase in production of 10% per year
4. 6 working days in a week and 26 working days in a month
5. Exchange rate of 1 US \$ = UShs 2100

Estimated capital costs

Item	Amount (US\$)
Land	75,000
Site preparation and development	25,000
Civil works, structures and buildings	162,500
Machinery and equipment	500,000
Tools	10,000
Vehicles	75,000
Furniture, office equipment	35,000
Pre-operating expenses	47,500
Working capital	238,066
Total	1,168,066

Major input requirements:

Raw materials

Item	Monthly Quantity required	Unit Cost (US\$)	Monthly Cost (US \$)	Annual cost (US\$)
Meat-(meat cuts)	15,600	2.35	36,660	439,920
Meat-(sausages)	15,600	2.25	36,660	439,920
Total			53,157	879,840

Processed industrial materials and components

Item	Monthly quantity	unit cost (US\$)	Cost (US\$)	Annual total (US\$)
Non-meat ingredients	1,690	1.89	3,194	38,328
Spices and additives	364	4.75	1,729	20,748
Ice	2,860	0.094	269	3,228
Vegetable fat	2,340	1.6	3,744	44,928
Packaging and casings			5489	65,868
Total			14,425	173,100

Factory Supplies

Item	Monthly cost (US\$)	Annual cost (US\$)
Protective wear	76	912
Cleaning requirements	88.64	1,063
Total		1,975

Labour

Type	Description	Annual wages/salaries (US\$)
Managerial	9 persons, average US \$ 450 per month	48,600
Technical	8 persons , average US \$ 300 per month	28,800
Skilled	8 persons , average US \$ 250 per month	24,000
Unskilled	8 persons , average US \$ 150 per month	14,400
Total		115,800

Sales

Item	Quantities per month	Unit cost (US\$)	Total cost per month (US\$)	Annual total (US\$)
Meat cuts	15,600	3.5	54,600	655,200
Sausages	15,600	3.5	54,600	655,200
				1,310,400

Indicative time schedule

Item	Activity	Duration
1	Project execution arrangements	1-3 months
2	Site identification, preparation and development	1-3 months
3	Procurement of machinery and equipment	3-6 months
4	Installation and commissioning	1-2 months
5	Commercial operation	From 9 th month

Financial Analysis Profitability (US\$)

Items	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Total Income	1,747,200	1,921,920	2,114,112	2,325,523	2,558,076	2,813,883	3,095,271	3,404,799	3,745,278	4,121,000
Total Expenditure	1,479,958	1,606,948	1,749,481	1,908,671	2,085,819	2,282,423	2,500,176	2,740,984	3,092,392	3,473,000
Net Profit Before Tax	176,395	241,778	312,103	384,991	461,062	531,460	595,096	663,815	652,887	648,000
Net Profit Margin	7%	9%	10%	12%	13%	13%	13%	14%	12%	12%
Return on Investment	19%	21%	25%	28%	32%	36%	39%	43%	49%	53%

Feasibility Analysis (US\$)

Item	Year0	Year1	Year2	Year3	Year4	Year5	Year6	Year7	Year8	Year9	Year10
Bank balance b/f	0	238,066	404,377	521,058	698,059	939,346	1,249,281	1,829,857	2,468,491	3,170,988	3,943,734
Inflows:											
Revenue receipts		1,747,200	1,921,920	2,114,112	2,325,523	2,558,076	2,813,883	3,095,271	3,404,799	3,745,278	4,121,000
Equity Injection	238,066										
Development loan	930,000										
Total	1,168,066	1,985,266	2,326,297	2,635,170	3,023,582	3,497,421	4,063,164	4,925,128	5,873,289	6,916,266	8,084,734
Outflows											
Capital Expenditure	930,000										
Purchases		1,104,264	1,214,690	1,336,159	1,469,775	1,616,753	1,778,428	1,956,271	2,151,898	2,367,088	2,605,444
Operating expenses (incl. Depreciation)		282,444	310,688	341,757	375,933	413,526	454,879	500,367	550,403	605,444	665,000
Interest payments		90,847	73,194	52,528	31,861	11,194					
Loan Repayments		103,333	206,667	206,667	206,667	206,667					
Total	930,000	1,580,889	1,805,240	1,937,111	2,084,236	2,248,140	2,233,307	2,456,638	2,702,302	2,972,532	3,287,444
Balance C/f	238,066	404,377	521,058	698,059	939,346	1,249,281	1,829,857	2,468,491	3,170,988	3,943,734	4,847,290

NPV Analysis

Item	Year 1	Year 2	Year 3	Year 4	Year 5
Cash flows	404,377	521,058	698,059	939,346	1,249,281
Discount Factor	20%				
NPV	2,057,856				

Payback Period - 3 Years

Payback Period	Investment	Net Cash flow	Balance on Recovery of Investment
Year 1	1,168,066	404,377	763,689
Year 2		521,058	242,631
Year 3 (Payback)		698,059	(455,428)
Year 4		939,346	(1,394,773)
Year 5		1,249,281	(2,644,054)

Rate of Return (Return on Investment)

Item	Year 1	Year 2	Year 3	Year 4	Year 5
Annual Return on Investment	19%	21%	25%	28%	32%

2.2 Meat Canning

Purpose of the project

The purpose is to process beef into canned meat products, corned beef, minced beef, hams and stewed meat products, for domestic, regional and Middle East markets

Projected capacities and sales and preferred technology

Description of technological options and preferred choice

No	Heading	Details
1	Planned products to be produced	<ul style="list-style-type: none"> The plant will produce canned meat; corned beef, canned minced meat, canned meat pieces in stew and canned hams
2	Quantities to be produced	<ul style="list-style-type: none"> It's projected that the plant has a capacity of 5,000 canned products per day and will start with 50% capacity in first year increasing at 10% per year
3	Packaging	<ul style="list-style-type: none"> Products to be packed in 400g and 170g oval cans. This is similar to the sizes of the canned meat imported and on Uganda market
4	Equipment and machinery required	<ul style="list-style-type: none"> In order to produce the above mentioned products, a complete set of meat canning plant is considered with the following details Deboning room with band saw, working tables and butcher tools Processing room with a automatic can closing machine, retort autoclave, mincer, bowl cutter, filling machine and butcher tools Cold rooms <p>Total cost: US \$ 1,468,120</p>
5	Premises requirements	<ul style="list-style-type: none"> A building with recommended standards from UNBS A processing room of high roof, tiled walls and floor, sufficient rooms for processing, cold room, packaging, retort autoclave, cooling, stores, power house
6	Sources of the machine	<ul style="list-style-type: none"> Germany, China, Netherlands, Belgium
7	Specialized Human Resources requirements	<ul style="list-style-type: none"> Meat processing Technologists/meat canning, Meat quality controllers, specializing in meat canning Business manager Marketing staff Mechanical Engineer
8	Potential Markets	<ul style="list-style-type: none"> Domestic market, regional markets, and Middle

Estimated total investment costs (US\$)

Total investment	Amount (US\$)
Land	100,000
Site preparation and development	50,000
Civil works, structures and building	145,000
Machinery and equipment	1,468,120
Auxiliary and service plant equipment	10,000
Office furniture and equipment	35,000
Vehicles	100,000
Pre-production expenditure	35,000
Working capital	546,164
Total	2,489,284

Main production inputs locally available

Raw materials, additives and seasoning

Description	Price/kg (US\$)
Beef	2.13
Vegetable fat	1.6
Ice flakes	0.094
Additives and spices	4.75
Non-meat ingredients	1.89

Machinery and Equipment

There is no local supplier of these equipments in the country and all have to be imported.

Cans/tins: No local supplier, this has to be imported.

Selected Factor Costs

Proposed infrastructure costs

Type	Description	Unit costs (US\$)
Transport – Road	40 ft container from Mombasa to Kampala including clearing fees, insurance	2,000
Telephone	Fixed line per minute on average	0.05
	GSM, post-paid per minute on average	0.12
Electricity	National Grid , 1KWh for large scale industry	0.075
	National Grid 1 kwh for Large scale industry	0.3
	National Grid 1 KWh for industry consuming more than 10 MW per day	0/019
Diesel	Per litre	1
Water supply	Industrial per cubic metre	0.68
Transport	40 ft container from Netherlands to Mombasa	3,000

Proposed personnel and labour costs

Type	Description	Annual wages/salaries (US\$)
Managerial	8 persons, average US \$ 550 per month	52,800
Technical	8 persons , average US \$ 400 per month	38,400
Skilled	8 persons , average US \$ 300 per month	28,800
Unskilled	10 persons , average US \$ 150 per month	180,000
Total		138,000

Preliminary Financial Viability Analysis

Estimated capital costs

	Amount (US\$)
Total investment	
Land	100,000
Site preparation and development	50,000
Civil works, structures and building	145,000
Machinery and equipment	1,468,120
Auxiliary and service plant equipment	10,000
Office furniture and equipment	35,000
Vehicles	100,000
Pre-production expenditure	35,000
Working capital	546,164
Total	2,489,284

Major input required - Raw materials

Item	Monthly Quantity Required	Unit cost (US\$)	Monthly cost (US\$)	Annual Cost (US\$)
Meat	26,000	2.13	55,380	664,540

Processed industrial materials and components

Item	Monthly Quantity	Unit cost (US\$)	Cost (US\$)	Annual Total Cost (US\$)
Non Meat Ingredients	6,500	3.0	19,500	234,000
Spices and Additives	1,820	4.75	8,645	103,740
Tins/Cans	65,000	0.71	45,150	553,800
Packaging and Labels	65,000	0.236	15,340	184,080
Total				1,075,620

Factory supplies

Item	Monthly cost (US\$)	Annual Cost (US\$)
Protective wear	76	912
Cleaning requirements	88.64	1,063
Total		1,975

Personnel and labour costs

Type	Description	Annual Wages/Salaries (US\$)
Managerial	8 persons, average US \$ 550 per month	52,800
Technical	8 persons, average US \$ 400 per month	38,400
Skilled	8 persons, average US \$ 300 per month	28,800
Unskilled	10 persons, average US \$ 150 per month	180,000
Total		138,000

Sales revenue projections

Item	Quantities per month	Unit cost (US\$)	Total cost per month (US\$)	Annual total (US\$)
Tinned meat	65,000	3,75	243,750	2,925,000

Indicative time schedule

Item	Activity	Duration
1	Project execution arrangements	1-3 months
2	Site identification, preparation and development	1-3 months
3	Procurement of machinery and equipment	3-6 months
4	Installation and commissioning	1-2 months
5	Commercial operation	From 9 th month

Financial Analysis

Profitability Analysis (US\$)

Items	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Total Income	2,925,000	3,217,500	3,539,250	3,893,175	4,282,493	4,710,742	5,181,816	5,699,998	6,269,997	6,896,997	46,616,616
Total Cost of Sales	1,556,080	1,711,688	1,882,857	2,071,142	2,278,257	2,506,082	2,756,691	3,032,360	3,335,596	3,669,155	24,799,155
Total Expenditure	2,173,110	2,341,113	2,532,290	2,748,077	2,990,188	3,260,618	3,561,653	3,895,888	4,515,471	4,787,617	32,806,810
Net Profit Before Tax	751,890	876,387	1,006,960	1,145,098	1,292,305	1,450,124	1,620,163	1,804,110	1,754,527	2,109,380	13,810,806
NET PROFIT	526,323	613,471	704,872	801,569	904,613	1,015,087	1,134,114	1,262,877	1,228,169	1,476,566	9,667,616
Net Profit Margin	18%	19%	20%	21%	21%	22%	22%	22%	20%	21%	21%
Return on Investment	30%	33%	35%	39%	42%	46%	50%	55%	63%	67%	67%

Feasibility Analysis (US\$)

Item	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Bank Balance B/f	0	(745,054)	31,720	819,910	1,735,571	2,789,384	3,993,098	5,556,831	7,276,937	9,169,054	11,250,382	(745,054)
Inflows:												
Revenue receipts		2,925,000	3,217,500	3,539,250	3,893,175	4,282,493	4,710,742	5,181,816	5,699,998	6,269,997	6,896,997	17,811,616
Equity Injection	238,066											
Development Bank Loan	930,000											
Total	1,168,066	2,179,946	3,249,220	4,359,160	5,628,746	7,071,877	8,703,840	10,738,647	12,976,935	15,439,051	18,147,379	17,811,616
Outflows												
Capital Expenditure	1,913,120											1,913,120
Purchases		1,556,080	1,711,688	1,882,857	2,071,142	2,278,257	2,506,082	2,756,691	3,032,360	3,335,596	3,669,155	9,500,000
Operating expenses Excl. Depreciation		397,965	437,762	481,538	529,691	582,661	640,927	705,019	775,521	853,073	938,381	2,400,000
Loan Interest payments		90,847	73,194	52,528	31,861	11,194						290,000
Loan Repayments		103,333	206,667	206,667	206,667	206,667						900,000
Total	1,913,120	2,148,226	2,429,311	2,623,589	2,839,362	3,078,778	3,147,009	3,461,710	3,807,881	4,188,669	4,607,536	15,000,000
Balance C/f	(745,054)	31,720	819,910	1,735,571	2,789,384	3,993,098	5,556,831	7,276,937	9,169,054	11,250,382	13,539,843	2,011,616

NPV Analysis

Item	Year 1	Year 2	Year 3	Year 4	Year 5
Cash flows	31,720	819,910	1,735,571	2,789,384	3,993,098
Discount or	20%				
NPV	4,550,123				

Payback Period – 3 Years

Payback Period Computation	Period	Investment	Net Cash flow	Balance on Recovery of Investment
	Year 1	2,459,284	31,720	2,427,564
	Year 2		819,910	1,607,654
Pay back	Year 3		1,735,571	(127,917)
	Year 4		2,789,384	(2,917,301)
	Year 5		3,993,098	(6,910,400)

Rate of Return (Return on Investment)

Item	Year 1	Year 2	Year 3	Year 4	Year 5
Annual Return on investment	30%	33%	35%	39%	42%

2.3 Modern Abattoirs

Purpose of the proposed project

The objective of this proposed project is to operate modern abattoirs and produce high quality products for the local and the export markets.

Proposed projected capacities

Proposed plants and capacities

The following are proposed for this project:

- One central abattoir and processing plant in Nakasongola.
- One Abattoir with slaughter and cutting line at Kiruhura.
- The capacity for the two abattoirs will increase from 4,500 tonnes each = $2 \times 4,500 = 9,000$ tones (carcass weight) per annum to $2 \times 6,480$ tones = 12,960 tones assuming the average carcass weight of 150kgs initially and finally 180kgs. The abattoirs and the processing plant will be designed to cope with this capacity.

Capacity parameters

Parameters	Today	Vision (future)
Number of cattle per day	125	125
Average slaughter weight (Kgs)	150	180
Working days per week	5	6
Working weeks per year	48	48
Annual capacity, tons per year	4,500	6,480

Livestock population in Uganda

S/N	Category	Population
1	Cattle	11.4 million
2	Goats	12.5 million
3	Sheep	3.4 million
4	Chicken	37.4 million
5	Ducks	1.5 million

Source: New Vision, Wednesday, 24th June, 2009

Capacity of proposed abattoir

Capacity Parameter	Initial tones per year	Final tones per year
2 abattoirs and 1 meat processing plant (carcass weights)	9,000	12,960

Proposed processed products

Processed Products	De-boning (%)	Initial tones/year	Final tones/year
Fillets and steaks	14	1,260	1,820
Other de-boned beef products	35	3,150	4,550
Processed for hamburgers, beef sausages etc	23	2,070	2,990
Bones, offal	28	2,520	3,640
Total	100	9,000	12,960

Estimated Total Investment Costs

Capital Item	Cost (US\$)
1. Land	32,500
1. Buildings and Civil Engineering Works, Machinery and	4,400,000
1. Pre-production capital expenditures	133,400
1. Working Capital Requirements	9,000,000
Total	13,565,900

Selected Factor Costs

Cost of Labour

Designation	Salary including allowances'	Source
Veterinary surgeons, senior	40,000 US\$/year	Estimated
Veterinary surgeons, junior	40,000 US\$/year	Estimated
Managers	40,000 US\$/year	Estimated
Clerical staff	6,000 US\$/year	Estimated
Workers	6,000 US\$/year	Estimated

Infrastructure at the proposed site US\$ (000)

Utility	Rates	Amount (US\$)
Telecommunications	Fixed Line, per minute on average	0.05
	GSM, Post-paid per minute on average	0.12
Electricity	National Grid, 1 kWh for medium industry	0.075
	National Grid, 1 kWh for large industry	0.030
	National Grid, 1 kWh for industry consuming more than 10MW per day	0.019
Water supply	Industrial per cubic meter	0.68

Proposed management costs

Item	Total number of staff for two abattoirs	Annual wages/salaries (US\$)
Management and	10	400,000
Technical and skilled	16	320,000
Unskilled	57	342,000

Preliminary Financial Viability Analysis of the proposed Investment

Estimated capital costs

Capital Item	Cost (US\$)
1 Land	32,500
2 Buildings and Civil Engineering Works, Machinery and	4,400,000
3 Pre-production capital expenditures	133,400
4 Working Capital Requirements	9,000,000
Total	13,565,900

Major inputs

Major input requirements	Units (a)	Requirement per unit output (b)	Annual units of output (c)	Annual input requirement (b) x (c)
Raw Materials (cattle)	30,000	300	30,000	9,000,000 (US\$)
Direct overheads(water)		5m ³ /tone of slaughter	4500 tones	22500m ³
Electricity		300kwh/tone of slaughter	4500 tones	1350,000kwh
Direct Supplies (transport of live stock)	30,000	25 lump sum	30,000	750,000 (US\$)
Direct Labour(skilled)	18	40,000	18	720,000 (US\$)
Direct labour (unskilled)	57	6,000	57	342,000 (US\$)

Estimated Production Costs and Operating Expenses

Production and operating cost item	Units	Unit cost (US\$)	Annual Qty	Annual Cost (US\$)
1 Direct Costs				
-Material	30,000	300	30,000	9,000,000
-Manpower (skilled)	18	20,000	18	720,000
-Manpower (unskilled)	57	6,000	57	342,000
-Direct Overheads (water)	22500m ³	0.68	22500m ³	15,300
-(Energy)	1,350,000kwh	0.019	1,350,000	25,650
-Sub-total				10,102,950
2 Operating Costs	30,000	25 lump sum		750,000
3 Financial Costs		20%		886,500
4 Total Production, Operating, financial				11,739,450

a) Estimated Annual Sales Revenues

Sales Item	Units	Unit Price	Annual Qty	Annual Sales (US\$)
1 Carcasses	30,000	3250/tonne	4500tonnes	14,625,000
2 By-products	30,000	45/unit	30,000	1,350,000
Total				15,975,000

Project Implementation Plan

Activity	Time line (Months)
1 Investor Establishment	1 – 6 month
2 Abattoir construction	6 – 24 month
3 Feedlot and local market centre operation	21 onwards
4 Operation of the abattoir	24 onwards

Financial Analysis

Profitability

Profitability Analysis Item	Year 1	Year 2	Year 3	Year 4	Year 5	Total
1 Projected Revenue from Sales	15,975,000	16,773,750	17,612,437	18,493,058	19,417,710	212,629,245
2 Less: Production, operating and Financial Costs	11,739,450	11,947,239	12,213,723	12,457,997	12,707,156	61,092,565
3 Net Profit Before Tax	4,235,550	4,799,511	5,398,714	6,035,061	6,710,554	27,179,390
4 Net Profit Margin %age (3/4)*100 = %	36%	40%	44.2%	48%	52.8%	
5 Return on Investment = Net Profit / Cost of Investment	31%	35%	39%	44%	49%	

Net Cash Flow Analysis (US\$)

Cash flow Item	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
1 Total Inflows	13,565,900	15,975,000	16,773,750	17,612,437	18,493,058	19,417,710
2 Less: Total Outflows (excldepr)	13,565,900	11,739,450	11,947,239	12,213,723	12,457,997	12,707,156
3 Net Cash Outflow	0	4,235,550	4,799,511	5,398,714	6,035,061	6,710,554

NPV Analysis

Item	Year 1	Year 2	Year 3	Year 4	Year 5
Cash flows (US\$)	4,235,550	4,799,511	5,398,714	6,035,061	6,710,554
Discount Factor	20%				
NPV	15,594,122				

Pay Back Period Analysis

Payback Period	Period	Investment	Net Cash flow	Balance on Recovery of Investment
1	Year 1	13,565,900	4,235,550	9,330,350
2	Year 2		4,799,511	4,530,839
3	Year 3		5,398,714	(867,875)
4	Year 4		6,035,061	(6,902,936)
5	Year 5		6,710,554	(13,613,490)

Assumptions

- An increase in the operating cost of 2% from the first year of production to the third year, we further assume that from the fourth to the fifth year there will be an increase of 5%.
- There will be an increase of 5% in the wholesale prices of carcasses from year one onwards.
- Depreciation is estimated at 25% for every 3 years of full capacity production.
- Life time for equipment is estimated at 12 years.
- Sales and revenues only cover carcasses and other by products excluding processed products

2.4 Real feed lot

Purpose of the Feedlot Fattening Project

The project aims to purchase young and weaned calves of about 4 months old from a myriad of small scale producers and ranchers within the cattle corridor and have them prepared for slaughter (i.e. fattened) through improved feeding. The animals shall be sold off for slaughter as soon as the target weight has been achieved.

Estimated Total Investment Costs

Capital Item	Cost (US\$)
1 Land	19,600
2 Buildings and civil engineering works	381,500
3 Machinery and equipment	134,500
4 Pre-production capital expenditures	4,097,856
5 Working capital requirements	1,964,807
6 Site preparation and development	97,500
Total	6,753,804

Main production inputs locally available

Item	Units	Unit Cost (US\$)	Qty	Annual Cost (US\$)
Fatteners of 250kgs live weight	7,666	200	7,666	1,533,200
Feed supplements	72.8 tones	106	72.8 tones	7,716.8

Infrastructure available at the proposed site

Type	Description	Unit costs '000
Utility	Rates	Amount (US\$)
Telecommunications	Fixed Line, per minute on average	0.05
	GSM, Post-paid per minute on average	0.12
Electricity	National Grid, 1 kWh for medium industry	0.075
	National Grid, 1 kWh for large industry	0.030
	National Grid, 1 kWh for industry consuming more than 10MW per day	0.019
Water supply	Industrial per cubic meter	0.68

Personnel and labour costs

Type	Description	Units	Unit Cost (US\$)	Quantity	Annual cost (US\$)
Managerial	Manager	1	1800	1	1,800
Technical	Foreman	1	1200	1	1,200
Skilled	Veterinary assistant (out	7,666	5	7,666	38,330
Unskilled	Casual laborers	75	300	75	22,500

Preliminary Financial Viability Analysis of the Proposed Investment

Production Schedules

Intake of fatteners	100%	100%	100%	100%
Culled animals	15%	13%	10%	8%
Dead animals	3%	3%	3%	3%
Net finished animals	82%	85%	87%	90%

Production quantities

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Intake of fatteners	7,666	8,518	8,518	9,369	9,369	43,440
Culled animals	1,150	1,065	852	703	468	4,238
Dead animals	230	256	256	281	281	1,303
Net finished animals	6,286	7,197	7,410	8,386	8,620	37,899
Manure	6,273	7,432	7,460	7,492	7,521	36,178

Production Costs for Animals

Cost Item	Year 1 (US\$)	Year 2 (US\$)	Year 3 (US\$)	Year 4 (US\$)	Year 5 (US\$)
Fattened Animals	893,594	1,023,153	1,053,424	1,192,064	1,225,362
Culling	163,462	151,354	121,083	99,894	66,596
Losses (Dead)	32,692	36,325	36,325	39,957	39,957
Total Production Costs for Animals	1,089,749	835,474	896,016	1,052,213	1,118,809

Estimated Annual Sales Revenues

Sales Item	Year 1 (US\$)	Year 2 (US\$)	Year 3 (US\$)	Year 4 (US\$)	Year 5 (US\$)	Total (US\$)
Fattened Animals	3,353,805	3,726,450	3,726,450	4,099,095	4,099,095	19,004,895
Culled Animals	344,963	319,410	255,528	140,540	140,540	1,271,252
Manure	31,366	37,158	37,302	37,604	37,604	180,889
Total Sales	3,730,134	4,083,018	4,019,280	4,347,365	4,277,239	20,457,035

Financial Analysis

Profitability Analysis

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Sales	3,730,134	4,083,018	4,019,280	4,347,365	4,277,239	20,457,035
Cost of production (US\$)	1,089,749	835,474	896,016	1,052,213	1,118,809	4,992,261
Net profit before tax (US\$)	2,640,385	3,247,544	3,123,264	3,295,152	3,158,430	15,464,774
Net profit margin	41%	42%	29%	32%	35%	177%
Return on investment = .Net profit/NBV	0.39	0.48	0.46	0.48	0.46	2.27

Feasibility (US\$)

Cash flow items		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	
1	Total Inflows	0	3,730,134	4,083,018	4,019,280	4,347,365	4,277,239	
2	Less: Total Outflows (excluding depreciation)	6,753,804	1,089,749	835,474	896,016	1,052,213	1,118,809	
3	Net Cash Outflow	6,753,804	2,640,385	3,247,544	3,123,264	3,295,152	3,158,430	
4	Present Value of Net Cash Flows (At 10%)	Discount Factor	1	0.909	0.826	0.751	0.683	0.621
		PV	-	2,400,110	2,682,471	2,345,571	2,250,589	1,961,385
		NPV	4,886,322					

Project Implementation schedule

Activity	Time line (Months)
1 Investor Establishment	1 – 6 month
2 Structure construction	6 – 24 month
3 Back grounding of wieners	24 onwards
4 Operation feedlot	31 onwards

2.5 Poultry Processing

Purpose of the project

To establish a poultry slaughter and processing plant in Uganda, the project is to produce dressed chicken and chicken parts for domestic, regional and Middle East markets.

Project capacities and preferred technology

Item	Details /Assumption
Planned products to be produced	<ul style="list-style-type: none"> The plant will produce processed poultry products; whole dressed children, chicken parts such as wings, drum steaks, neck, gizzards, backs, breasts.
Quantities to be produced	<ul style="list-style-type: none"> It is projected that the plant has a capacity of 10,000 birds per day and would start in the first year with 70% production capacity, increasing at 10% per year.
Equipment and machinery required	<ul style="list-style-type: none"> A complete set of poultry plant is required with the following details; An automated slaughter line with stunning, scalding tanks, de-feathering equipment; Cooling facilities; Freezing facilities; Waste water treatment unit.
Premises requirements	<ul style="list-style-type: none"> A building with recommended standards from UNBS, easy to clean walls and floors; Waste water treatment unit; Sufficient rooms for packaging, processing and storage.
Sources of the machine	<ul style="list-style-type: none"> German, China, Netherlands, Belgium.
Specialized Human Resources requirements	<ul style="list-style-type: none"> Poultry processing Technologists; Poultry processing quality controllers; Business manager; Marketing staff; Mechanical Engineer.
Potential Markets	<ul style="list-style-type: none"> Domestic market, regional markets and Middle East.

Estimated Total Investment costs (US\$)

Total Investment	Amount (US\$)
Land	150,000
Site preparation	30,000
Civil works, structures and building	160,000
Machinery and equipment	1,426,000
Auxiliary and service plant equipment	10,000
Incorporated fixed assets	110,040
Working capital	1,640,674
Pre-operating costs	10,000
Total	3,536,714

Main production inputs locally available**Raw Materials**

Item	Unit price (US\$)
Chicken	2.6 per head

Selected Factor Costs**Infrastructure available at the proposed site**

Type	Description	Unit costs (US\$)
Transport Road	– 40 ft container from Mombasa to Kampala including clearing fees,	2,000
Telephone	Fixed line per minute on average	0.05
	GSM, post-paid per minute on average	0.12
Electricity	National Grid , 1KWh for large scale	0.075
	National Grid 1 kwh for Large scale industry	0.3
	National Grid 1 KWh for industry consuming more than 10 MW per day	0/019
Diesel	Per litre	1
Water supply	Industrial per cubic metre	0.68
Transport	40 ft container from Mombasa to UK	3,000

Personnel and Labour costs

Type	Description	Annual wages/salaries (US\$)
Managerial	9 persons, average US \$ 600 per month	64,800
Technical	8 persons , average US \$ 400 per month	38,400
Skilled	10 persons , average US \$ 300 per month	36,000
Unskilled	5persons , average US \$ 150 per month	9,000
Total		148,200

Preliminary Financial Viability Analysis of the Proposed Investment

Assumptions

- Full production capacity of 10,000 dressed chicken per day
- Production capacity in 1st year of 50% (5,000 dressed chicken) -slaughtered per day
- Increase in production of 10% per year
- 5 working days in a week and 22 working days in a month
- Exchange rate of 1US \$ = UGX Shs 2,100

Major Input Requirements

Raw Materials

Assume 5,000 chicken bought in a day, 5 working days in a week

Item	Monthly Quantity required	Unit Cost (US\$)	Monthly Cost (US\$)	Annual cost (US\$)
Chicken	120,000	2.13	255,600	3,067,200

Processed Industrial Materials and Components

Item	Monthly Quality	Unit cost in US \$	Cost in US \$	Annual Total US \$
Packaging (steroform trays wrapping film labels)	120,000	0.25	30,000	360,000

Factory Supplies

Item	Monthly Cost (US\$)	Annual Cost (US\$)
Protective wear	150	1,800
Cleaning requirements	331	3,072
Total		4,872

Labour

Type	Description	Annual wages/salaries (US\$)
Managerial	9 persons, average US \$ 600 per month	64,800
Technical	8 persons , average US \$ 400 per month	38,400
Skilled	10 persons , average US \$ 300 per month	36,000
Unskilled	5persons , average US \$ 150 per month	9,000
Total		148,200

Sales Projections

Assume 5,000 Chicken slaughtered per day and 5 working days in a week

Item	Quantities per month	Unit cost	Total cost per month (US\$)	Annual total (US\$)
Dressed Chicken	120,000	3.31	397,200	4,766,400

Indicative implementation time schedule

Activity	Duration
Project execution arrangements	1-3 months
Site identification, preparation and development	1-3 months
Procurement of machinery and equipment	3-6 months
Installation and commissioning	1-2 months
Commercial operation	From 9 th month

Financial Analysis

Profitability

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Total Income	4,766,400	5,243,040	5,767,344	6,344,078	6,978,486	7,676,335	8,443,968	9,288,365	10,217,202	11,238,922	75,964,141
Total Expenditure	4,046,403	4,403,563	4,802,562	5,246,734	5,917,125	6,585,796	7,220,194	7,920,997	8,694,459	9,474,811	64,407,692
Net Profit Before Tax	528,529	668,522	854,075	1,030,194	1,061,361	1,090,539	1,223,774	1,367,368	1,522,742	1,764,111	11,111,215
Net profit	369,970	467,965	597,852	721,136	742,953	763,377	856,642	957,158	1,065,920	1,234,877	7,777,851

Item	Rate	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Business Activity increment	10%	per year									
Net Profit Margin		8%	9%	10%	11%	11%	10%	10%	10%	10%	11%
Return on Investment		26%	30%	35%	39%	40%	40%	43%	47%	52%	56%

Feasibility Analysis (US\$)

Item	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Sales Revenue	0	238,066	908,810	1,537,763	2,391,869	3,465,655	4,772,203	6,742,080	8,933,126	11,364,493	14,057,634	238,066
Inflows:												
Revenue receipts		4,766,400	5,243,040	5,767,344	6,344,078	6,978,486	7,676,335	8,443,968	9,288,365	10,217,202	11,238,922	29,099,349
Equity Injection	238,066	0	0									0
Development Bank Loan	1,960,060	0										0
Total	2,198,126	5,004,466	6,151,850	7,305,107	8,735,948	10,444,141	12,448,538	15,186,049	18,221,491	21,581,695	25,296,566	29,337,415
Outflows												
Capital Expenditure	1,960,060											1,960,060
Purchases		3,427,200	3,769,920	4,146,912	4,561,603	5,290,085	5,819,094	6,401,003	7,041,104	7,745,214	8,519,736	21,195,721
Operating expenses (Excl. Dep)		259,203	237,643	220,050	205,971	-77,310	-112,636	-148,081	-184,105	-221,153	-332,363	845,556
Interest payments		191,469	170,955	110,707	67,150	23,593	0	0	0	0	0	563,874
Loan Repayments		217,784	435,569	435,569	435,569	435,569	0	0	0	0	0	1,960,060
Total	1,960,060	4,095,656	4,614,087	4,913,238	5,270,293	5,671,938	5,706,458	6,252,923	6,856,998	7,524,061	8,187,373	26,525,271
Balance C/f	238,066	908,810	1,537,763	2,391,869	3,465,655	4,772,203	6,742,080	8,933,126	11,364,493	14,057,634	17,109,183	2,812,143

NPV Analysis and Payback Period

NPV Analysis		Year 1	Year 2	Year 3	150,000	Year 5
Cash flows		908,810	1,537,763	2,391,869	3,465,655	4,772,203
Discount Factor		20%				
NPV		6,798,581				
a	Pay Back Period - 3 Years					
	Payback Period	Period	Investment	Net Cash flow	Balance on Recovery of Investment	
		Year 1	1,960,060	908,810	1,051,250	1
		Year 2		1,537,763	486,514	2
	Payback	Year 3		2,391,869	(1,905,356)	3
		Year 4		3,465,655	(5,371,010)	4
		Year 5		4,772,203	(10,143,214)	
b	Rate of Return (Return on Investment)					
		Year 1	Year 2	Year 3	Year 4	Year 5
	Annual Return on Investment	26%	30%	35%	39%	40%

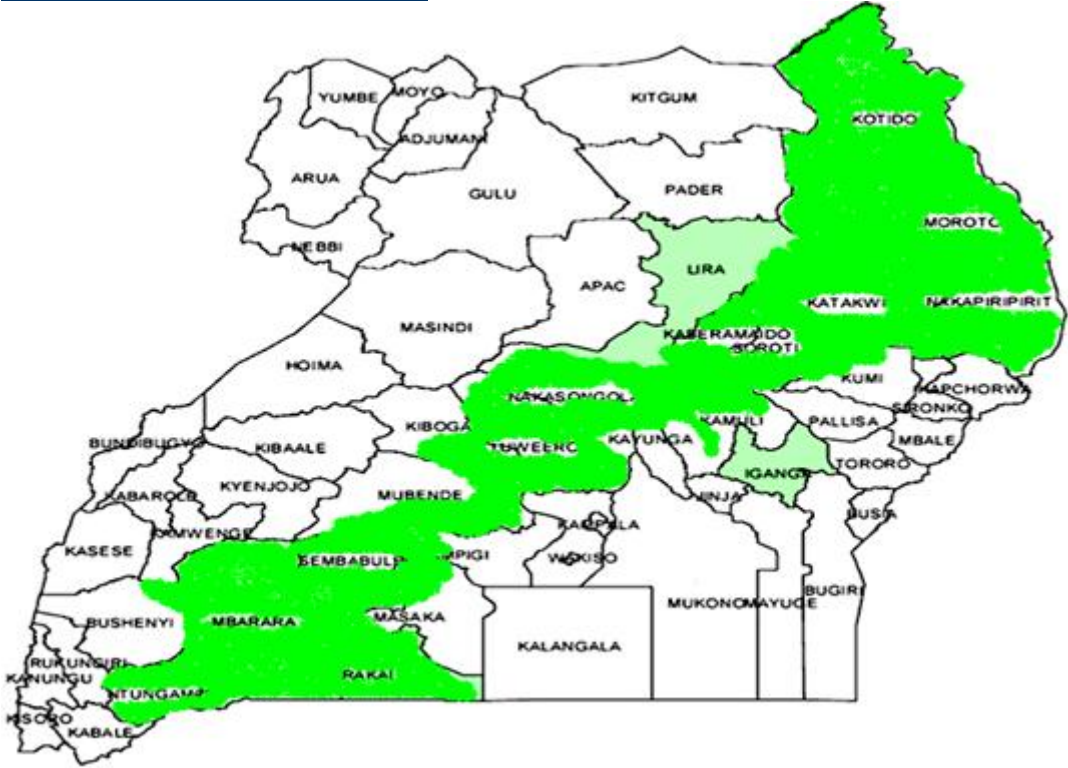
3.0 OTHER CONSIDERATIONS AND ADDITIONAL INFORMATION

3.1 Beef and Meat caning environmental and regulatory considerations

Location

Beef processing investments can be located in any part of the country especially where a cattle keeping is the predominant activity. The cattle corridor (shown in the map that follows) is the most suitable. The geographical belt that has potential for production of cattle is also suitable for the location of beef canning investments.

The Cattle Corridor in Uganda



Key
 Cattle producing area

Environmental issues

The National Environmental Management Authority (NEMA) and Uganda National Bureau of Standards (UNBS) are responsible for ensuring compliance with national environmental and hygiene requirements.

Regulatory and Licensing issues and procedures

The following are the requirements from different government organizations:

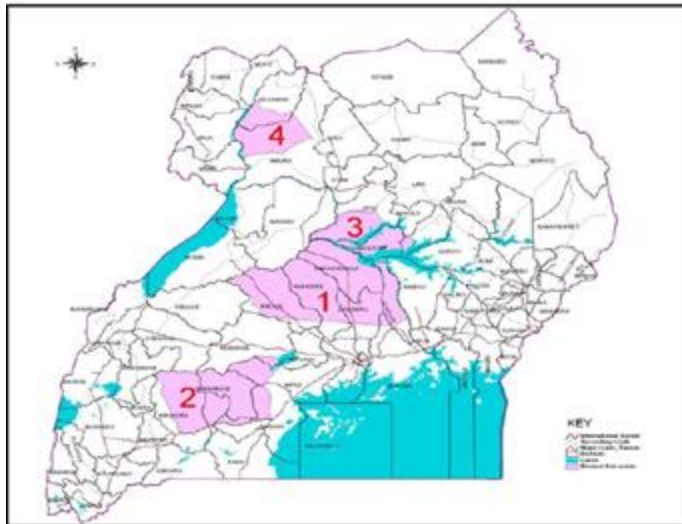
- Company Registration Certificate from Registrar of companies;
- Investment Licence from Uganda Investment Authority;
- Health Certificate for facilities and personnel from the district health department;
- Product Certification from Uganda National Bureau of Standards;
- Tax Registration from Uganda Revenue Authority; and
- Environmental permit from National Environmental Management Authority.

3.2 Modern Abattoirs location, environmental aspects and regulatory considerations

Location

The animal health situation in Uganda requires export abattoirs to be located within the Disease Control Zones (DCZ). The Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) has proposed four such zones as shown in the map that follows.

Proposed Disease Control Zones



Environmental aspects

The National Environmental Management Authority (NEMA) and Uganda National Bureau of Standards (UNBS) are responsible for ensuring compliance with national environmental and hygiene requirements.

Regulatory and Licensing issues and procedures

The following are the requirements from different government organizations:

- Company Registration Certificate from Registrar of companies;
- Investment Licence from Uganda Investment Authority;
- Health Certificate for facilities and personnel from the district health department;
- Product Certification from Uganda National Bureau of Standards;
- Tax Registration from Uganda Revenue Authority; and
- Environmental permit from National Environmental Management Authority

3.3 Feed Lot location, environmental aspects and regulatory considerations

Location

The project shall be located in Luwero District, at the outskirts of the cattle corridor. The main purpose is to locate it in an area with good rainfall and soil fertility to facilitate growth of fodder and production of silage, a key input in the fattening process. The cattle corridor will remain the key catchment area for this project. The corridor is characterised with low rainfall which has resulted in a low stocking density for livestock. Grass-silage fattening may not be viable in such an environment since it requires that quality grass and fodder be made available for the purpose.

The decision about the optimal location is influenced by several factors including the following:

- Minimizing operational costs.
- Minimization of transport costs of animals, fodder, by-products, concentrate feeds and manure. Since the feedlot fattening system is a cut and carry system, transport of fodder, by-products, concentrate feeds and manure will form the bulk of the transport. Transport costs for fodder will be an important part of the total production costs and have to be minimized. Locating the unit near the main source of fodder means also minimum costs to return the manure to the place where the fodder was grown and in this way may promote good agricultural practice.
- Easy access from the public road to the feedlot.
- Reliable water supply. Depending on the moisture content of the feed, the outside temperature and humidity, an animal of 300 kg live weight requires 30 - 90 liters water per day.

Environmental aspects

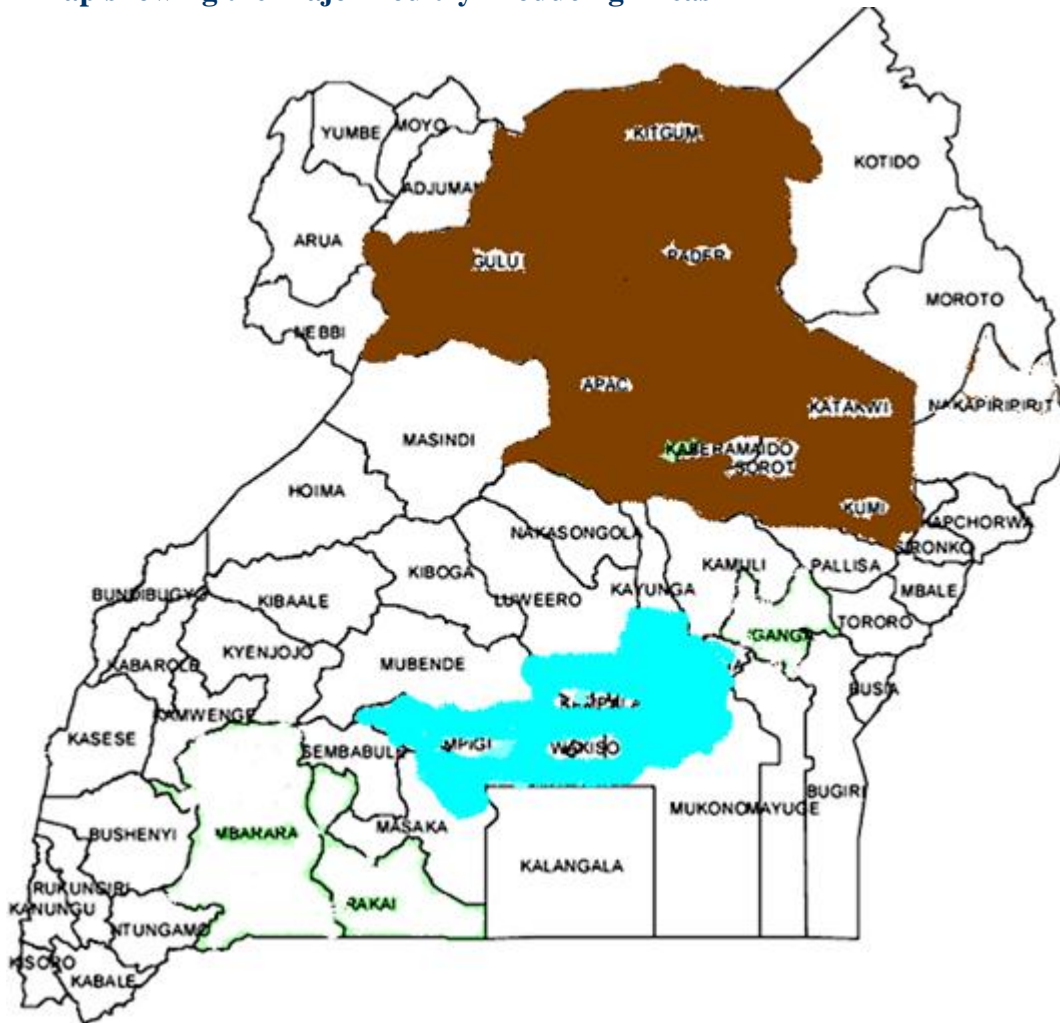
The National Environmental Management Authority (NEMA) and Uganda National Bureau of Standards (UNBS) are responsible for ensuring compliance with national environmental and hygiene requirements. Though the project is anticipated to pose no danger to the environment as attempts shall be made to as much as possible to produce beef organically, it will be implemented in consultation and guidance from NEMA. Accordingly, manure generated from the project could be sold or used to produce biogas and mitigate on the environmental effects of methane gas.

3.4 Poultry project location, environmental aspects and regulatory considerations

Location

Uganda has the potential to produce both local and exotic chicken. Local chicken is reared by the majority of the households in Northern and Eastern Uganda. The chicken roam in the fields on a free range system to produce high quality organic eggs and chicken. Exotic chicken on the other hand, are extensively reared in the Central region of Uganda. The detailed location of the major chicken producing areas is shown in the map that follows.

A map showing the Major Poultry Producing Areas



Key

	Local Chicken Producing Areas
	Exotic Chicken Producing Areas

Environmental Issues

The National Environmental Management Authority is the Statutory Institution and lead agency in Environmental issues and usually an Environmental Impact Assessment is carried out before an industry is established.

Regulatory and Licensing Issues and Procedures

- Company registration by Government Registrar of Companies and Uganda Investment Authority is required.
- Operating permits and License from health department of local government is required, a health certificate is provided.
- Product certification by Uganda National Bureau of Standards, a product certification certificate is provided.
- Tax registration by Uganda Revenue Authority is also required, a VAT registration certificate is provided.

4.0 USEFUL CONTACTS

Main Contact

Uganda Investment Authority

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P.O. Box 7418, Kampala
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Government Agencies

Ministry of Agriculture, Animal Industry And Fisheries (MAAIF)

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National Environment Authority

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Website: www.uginscom.go.ug

Uganda Export Promotion Board

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Uganda Revenue Authority

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Private Sector Associations

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Private Sector Foundation of Uganda

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