

INVESTMENT PROPOSAL FOR GOAT

DECEMBER
2019



AGRO-INVEST

AGRO-INVESTMENT CORPORATION

Promoting and Facilitating Agri-Business Investments



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LIST OF ACRONYMS

JMD - Jamaican Dollars

MICAF - Ministry of Industry, Commerce, Agriculture and Fisheries

STATIN - Statistical Institute of Jamaica

Executive Summary

Farm Size:	20 acres (8 hectares)
Project Description:	The project is seeking to establish a 20 acre Goat farm starting with 35 ewes and 2 rams. The average annual net profits over a 10 year period is projected to be approximately J\$8.23M The accumulated 10 year net profit is projected to be approximately J\$57.6M .
Project Sector	Agriculture: Livestock Production of Goat
Financial and Economic Analysis and Recommendation	Internal Rate of Return: 52% (at normal investment assumptions) Net Present Value: J\$27.37M (at normal investment assumptions) Based on the outcomes of the analysis, the project is considered to be viable

Product Profile

Jamaica Creole



Anglo-Nubian



Botanical Name and Origin: Domestic goat or simply goat (*Capra aegagrus hircus*) is a subspecies of *C. aegagrus* domesticated from the wild goat of Southwest Asia and Eastern Europe. The goat is a member of the animal family Bovidae and the subfamily Caprinae, meaning it is closely related to the sheep.

There are over 300 distinct breeds of goat. Goats are one of the oldest domesticated species of animal, and have been used for milk, meat, fur and skins across much of the world. Milk from goats is often turned into goat cheese.

Female goats are referred to as does or nannies, intact males are called bucks or billies and juvenile goats of both sexes are called kids. Castrated males are called wethers. While the words hircine and caprine both refer to anything having a goat-like quality, hircine is used most often to emphasize the distinct smell of domestic goats.

In 2011, there were more than 924 million goats living in the world

Species: There are several breeds of small ruminants (goat and sheep) in the world that can be produced in Jamaica. However, the conscientious recommendation is that the following breeds are more suitable for the Jamaican climatic conditions:

1. **Jamaica Creole:** A native breed created through natural selection; however, most of its genetic traits come from the Spanish Dairy Goat and British Alpine. The animal is very hardy and fully adapted to the Jamaican Environment. The breed is present in various colours and range from small to medium in size.
2. **Anglo-Nubian:** The breed was developed in Britain and imported into Jamaica. The Nubian is a dual purpose animal, which can be raised for



both meat and milk. The breed tends to be large framed and sturdy and varies in colour.

3. **British Alpine:** The Alpine is a Swiss breed, developed primarily for milk; however, the animal has been used as foundation for many commercial meat goats, because of its large frame and fast growth rate.
4. **Boer:** The Boer was developed in South Africa, it is solely a meat goat breed, and recognized for its hardiness, excellent meat to bone ratio and fast conversion of feed to meat. The breed is characterized by a white body and red to brown head.

Health Uses: Goat meat is low in calories, total fat, saturated fat and cholesterol than traditional meats, goat meat has higher levels of iron when compared to a similar serving size of beef.

Value Added Products: yogurt, cheese, lotions, milks, soaps, ice cream, kefir, soaps, shampoo, lotion, lip balm, paint (whitewash)

How to raise Goats

Suitable Locations: Goats are produced in all parishes of Jamaica; however they tend to thrive better in the southern parishes in the plains that experience variable (low) rainfall and dry vegetation. It is important that the areas are properly ventilated to prevent respiratory issues.

Raising Goats for Meat and Milk: Goats are prolific milk producers. Each doe will give roughly 90 quarts of milk per month, with two months off right before she gives birth.

Feeding Goats: The goat is a ruminant, having a four-part stomach like the cow and sheep. Goats are energetic, inquisitive and versatile in their feeding habits. They are adaptable to various environments and can consume over 90 different plants. Browse materials (trees, leaves, bushes, twigs, etc.) appears to be advantageous and enjoyed by dairy goats. However, the importance of such materials toward the nutritional requirements of lactating dairy goats is probably quite small, especially where a fairly large number of dairy goats are being maintained.

Goats require energy, protein, vitamins, minerals, fiber (bulk) and water. Energy (calories) is usually the most limiting nutrient, whereas protein is the most expensive. Deficiencies, excesses and imbalances of vitamins and minerals can limit animal performance and lead to various health problems. Fiber is necessary to maintain a healthy rumen environment and prevent digestive disturbances. Water is the cheapest feed ingredient and often the most neglected.

Although the goat has a great capacity for consuming fibrous feed (roughage), it needs to be given forage of good quality, such as legume hay.

The four (4) main source of feed for goats are:

- Pasture and browse
- Hay
- Silage and haylage
- Concentrate (grains)

Fencing goats: This will depend on availability of materials and its price. Wood is preferred to concrete blocks, clay, brick is a good choice. Regardless of the construction material barns should provide enough space for animals, favorable conditions such as temperature and humidity and proper ventilation.

Disease Control:

- Keep surrounding clean, clean Kraal where possible and remove manure regularly
- Supplement rations with extra feed during colder periods and remember that pregnant females need more feed to produce healthy offspring.

- Avoid overcrowding and treat the animals in a relaxed manner. If you are transporting them, make sure they have enough water, and that they are not too hot or too cold. Avoid loading too many animals on one truck.
- Provide vaccination; especially females
- If extensive grazing takes place, keep kids with their mothers at night so they can suckle.

Intercropping: Goats can be raised with tree crops such as coconut. However, special care should be given to ensure that either the plants or the goats are fenced to ensure that the goats do not have access to the crops.

SWOT Analysis for the Establishment of a 20-Acre Goat Farm

Strengths

- Ready market.
- Internal rates of return up to 52%.
- The demand local markets is excellent.
- Marketing and production information are readily available.
- Government of Jamaica committed to expanding the agricultural sector.
- Access to experts and good networks (RADA, AIC and JAMPRO).
- Vast unused land resources
- Price of goat milk and its products is high
- Dietetic and therapeutic properties of goat meat, milk and milk products
- Raising awareness amongst local population on properties of goat milk

Weakness

- High initial investment.
- Growing foreign market of goat products

Opportunities

- Access to production information/ technologies as a result of research and development work conducted by local, regional and international agencies.
- Access to special short term credit facilities at low interest rates.
- Accessing the services of the Praedial Larceny Unit at MICAF.
- Opportunities for development along the value chain
- Goat with high genetic potentials
- Small number of goat farmers
- Low market orientation of goat farmers
- Growing inters of processing sector for goat milk
- Supplies lower than demand

Threats

- Increase in land prices.
- Natural disasters and pest/disease epidemics.
- Severe market changes and fluctuations in prices.
- Praedial larceny.
- Stringent Government regulation for export and registration.
- Possible budget instability and reduction of subsidies for the sector
- Increasing prices of grains

Market Analysis

Small Ruminant production in Jamaica has been taking place in since the first European Colonizers arrived in the island. The sector was never treated as major commercial venture from then until now, most farmers have continued to raise small holdings of 20 -30 animals using limited inputs and little to no management practices.

Goats and Sheep are considered small ruminants because of a special chamber in their stomachs called a rumen which allows them store food and regurgitate for consumptions (essentially chewing their cud). Goat meat is called “chevon” and Sheep meat is called “mutton”. They’re one of the world most widely consumed meat.

Chevon/ Goat meat is commonly referred to as the healthy red meat, because is alkaline very lean and contains limited fats; also it contains high volumes of B12 Vitamins and high volumes of iron when compared to other meats. ¹

Small ruminants are grown all over the world in many different climatic conditions, most breeds are adaptable, and therefore they can be transferred all over the globe. The top three (3) exporters of goat meat are New Zealand, Australia and the United Kingdom, while the major importers include China, United States of America, Holland and Germany.

Ruminants can be developed under strictly organic conditions which opens the opportunity for investment in the growing Organic/Healthy market segment.

Parishes with the highest population of ruminants are Westmoreland, Clarendon, St. Catherine, St. Elizabeth, Manchester and St. Ann. All with the exception of St. Ann are parishes from the southern section of the Island.

Experts suggest that for the best production in the Jamaican environment a three-way cross between the Native goat , Nubian/Alpine and the Boer Goat would provide the best breed type with the required genetic disposition to thrive and give the maximum return on your investment.

Figure 1: 5 Year Goat Imports (YR 2013- 2017)

5 Year Goat Imports			
Year	Kg	J\$CIF	US\$CIF
2013	803,466.00	254,108,136.00	2,558,869.00
2014	803,423.51	313,895,803.17	2,842,113.62
2015	643,024.76	261,219,940.15	2,229,280.11
2016	297,771.94	102,449,592.81	822,541.31
2017	281,967.97	109,020,805.25	853,064.62
Total	2,829,654.18	1,040,694,277.38	9,305,868.66

¹ Data was only available up to YR 2017

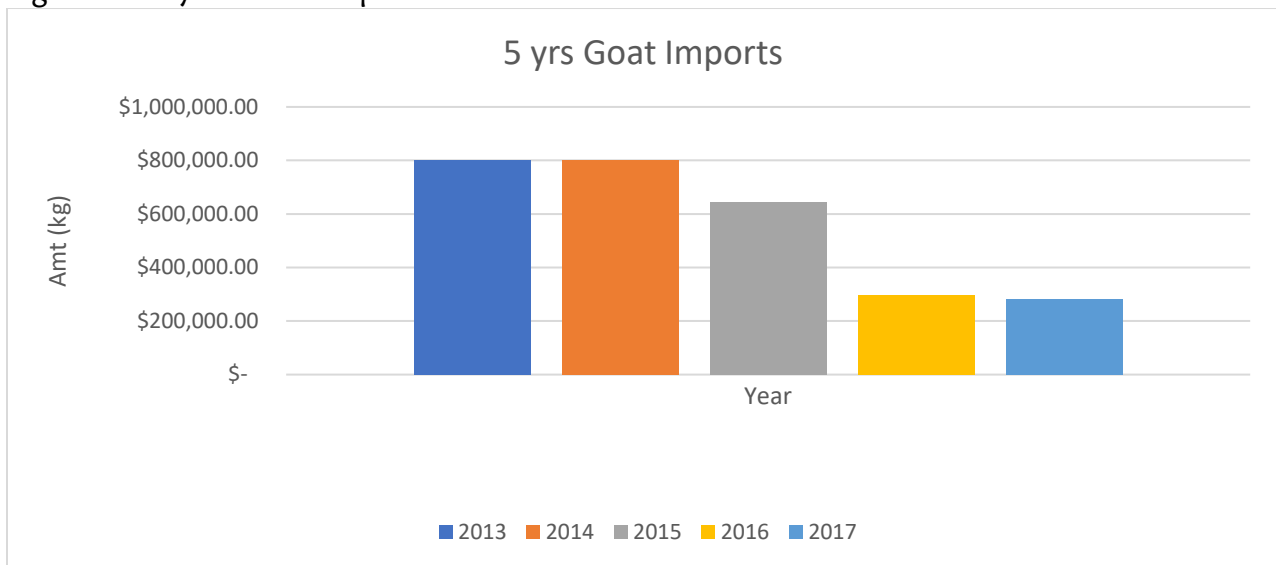
Source: STATIN 2017

Figure 2: Livestock Slaughter over 7 years.

	2011	2012	2013	2014	2015	2016	2017
Livestock slaughter (heads)							
Goats	56,498	54,694	52,682	55,201	56,728	60,074	59,671
Goats' meat (000 kgs)	1,316	1,094	929	902	888	1,069	925

Source: STATIN 2017

Figure 3: 5 year Goat imports



Market Prices

The market potential for small ruminant production presents good earning potential especially for specialty cuts for restaurateurs and within the tourism and hospitality sector. Consumers of the goat are willing to pay premium prices for the locally produced animals and demand for same increases during specific seasons. Normal prices for goat meat ranges from \$400-450 for live animals, and \$900-1000 for dead weight.

Goat Production needed to meet demand –

- Slaughtering 20,648 heads annually
- Increased herd size of 30,972 does

In 2017 Jamaica imported \$853,064.62 USD worth of chevon products. In addition, local production only covers on average 15 % of the total demand. Therefore the market potential is remarkable and yearning for investment.

Available market potential

The available markets for goat are:

- Farmers
- Butchers
- Hoteliers
- Restaurateur
- Local Consumers

Business Model and Financial Analysis for Investment in Goat Farming

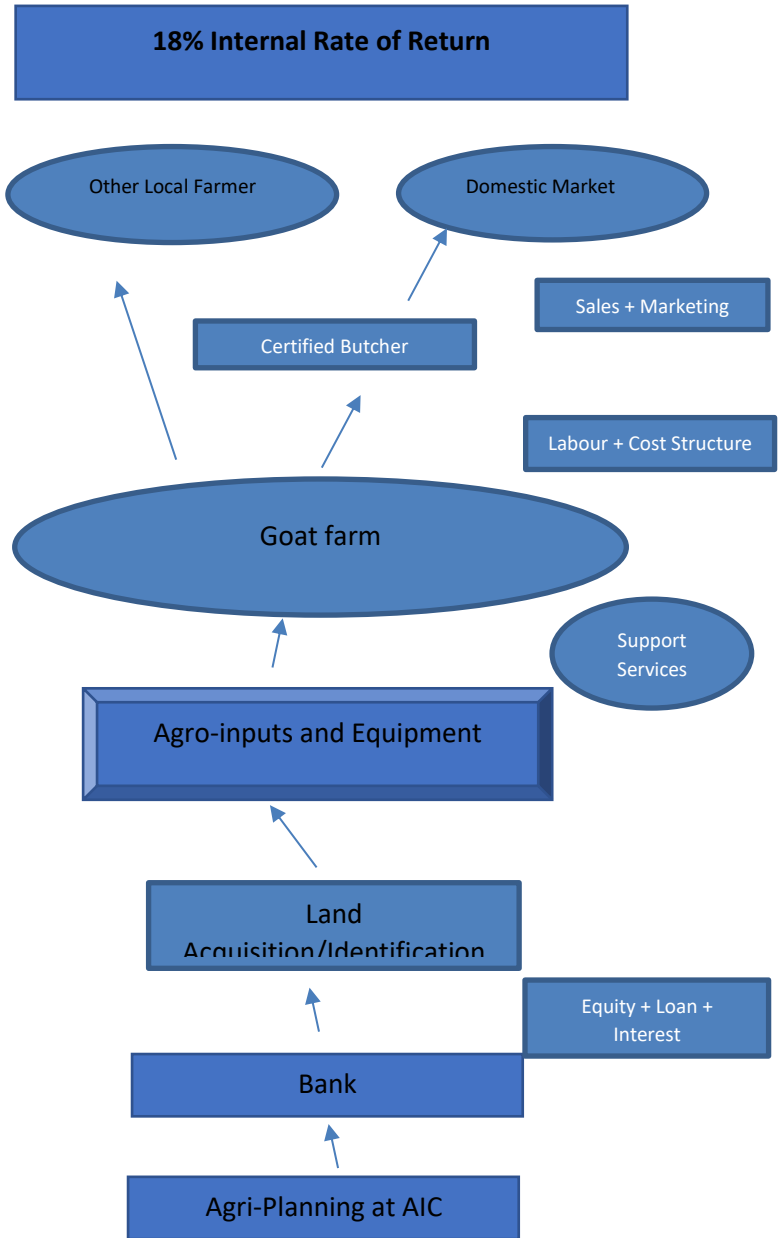
INVESTMENT OPPORTUNITY

Opportunity for Investment in Goats

- J\$10.19 M investment opportunity for a 20 acre goat farm.
- Sell produce (live and meat) to domestic buyers and processors for local markets.
- Requires investments in in a goat house.
- The first sales is expected 6 months after starting.
- Intercropping of cash crops can be practiced to gain additional income in the first two years of establishing the farm.
- The investment will be financed by 60% equity and 40% loan financing at an interest rate of 10%
- The estimates are made for a 20-acre area of production. Starting with 35 does and 2 rams
- Land with be sought by investor.

Farming

BUSINESS MODEL



FINANCIALS

Investment Cost

The initial investment is estimated at **J\$5.75M** (See Appendix 1 - Cost of Production).

Revenue

Average revenue for the ten years is expected to amount to **J\$10.45M** (See Appendix 3 – Cashflow statement).

Return on Investment

The estimated financials of the project are promising show an **Internal Rate of Return (IRR) of 52% and Net Present Value (NPV) of J\$27,371,861.04** when future cash flows were discounted utilizing a rate of 10% percent based on the going bank lending rate (See Appendix 2 – NPV and IRR)

Projected Cash Flow

The cash flow projections for Goat production on a 20 acre farm are low for the first two years and then increases over subsequent years. Net cash flow after debt service accumulates to **J\$117.99M** (See Appendix 3).

Agricultural Incentives and Support Services

A project of this size can benefit from agricultural incentives which comprises of two levels, the general approval for benefits of the Productive Inputs Relief (PIR) and the higher level approval that includes Income Tax relief.

An entity or individual must be registered with the Rural Agricultural Development Authority (RADA) in their respective parish offices in which the farm exists to benefit from the Productive Input Relief Incentive for the Agricultural Industry.

The approval for the Productive Input Relief benefit requires that the Commissioner of Customs be satisfied that the items imported are to be used in primary production/approved farming activity. It should be noted that PIR can last from six (6) months to three (3) years.

A farmer can also benefit from a twenty percent (20%) concession on farm vehicles. For a 20-acre goat farm, there is a limit to the number of vehicles. Medium Farms (11-50 acres) can benefit from two motor vehicles every five years.

Support Services

Agro-Investment Corporation (AIC)

The Agro-Investment Corporation (AIC) is an agricultural investment facilitation, advisory and management agency, which functions as the Ministry of Agriculture and Fisheries business facilitation department. The agency is responsible for agricultural investment promotion and facilitation, as well as project and market development. AIC provides investment support to entrepreneurs, covering the investment chain from the identification of opportunities through to feasibility studies, business planning, fundraising, operations management, long term business performance monitoring and technical support.

Jamaica Promotions Corporation (JAMPRO)

JAMPRO's continuous mission is to promote Brand Jamaica, attract and land jobs and wealth-creating investments to Jamaica and secure lucrative markets for quality Brand Jamaican products. As the Agency seeks to facilitate local investments, a number of support services are available, namely:

- Provision of business information and advisory services
- Trade and investment incentives
- Export-related training
- Creation of business linkages

Rural Agricultural Development Authority (RADA)

The Rural Agricultural Development Authority (RADA) promotes agricultural development in Jamaica through an extension service. Farmers can solicit information and technical assistance in areas such as agronomy, plant health, irrigation post-harvest techniques, production and marketing.

Contact our Investment Team today for more information on available investment opportunities!

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Appendix 1: Cost of Production for up to 100 heads of Goats

Chevon Cost of Production- Based on 35 does and Marketing 52 Kids					
This is based on a one year period with one and a half production cycles					
Herd Profile					Total
Number of does					35
Number of bucks					2
Number of Kids					52
Pasture size (acre)					20
Annual kidding frequency					1.5
Litter size					1.6
Months to Market					8
Market Weight (lbs)					90
Items		Unit	No. of Units	Cost/unit (\$)	Total Cost (\$)
Operating Costs					
Feed					
<i>Doe-</i>					
Goat Ration		kg	2782.5	60.00	166,950.00
<i>Buck-</i>					
Goat Ration		kg	365	60.00	21,900.00
<i>Kid-</i>					
Goat Ration		kg	1404	60.00	84,240.00
Medication					
Kids		animal	52	430.00	22,360.00
Buck		animal	2	684.00	1,368.00
Doe		animal	35	684.00	23,940.00
Water		month	12	3,104.68	37,256.11

Labour		animal	89	1,500.00	133,500.00
Motor Vehicle Expense		month	12	3,691.81	44,301.75
Housing Maintenance		animal	89	500.00	44,500.00
Pasture Maintenance		acre	20	6,000.00	120,000.00
Subtotal					\$ 700,315.86
Capital Investment					
Building		animal	120	20,833.33	2,499,999.60
Fencing		acre	20	11,500.00	230,000.00
Breeding stock					
Doe		each	35	45,000.00	1,575,000.00
Buck		each	2	75,000.00	150,000.00
Water tanks and accessories		each	2	35,000.00	70,000.00
Farm equipment					105,450.00
Subtotal					4,630,449.60
Depreciation @ 10%					\$ 426,640.49
Total					\$ 5,757,405.95

Appendix 2: NPV and IRR (Normal)

		Capital Investment	Net Cashflow
Yr 0		5,757,405.95	
Yr 1			181,738.87
Yr 2			1,200,838.04
Yr 3			3,422,988.57
Yr 4			7,841,585.37
Yr 5			16,115,354.88
Yr 6			31,175,511.82
Yr 7			58,059,813.34
		NPV	27,371,861.04
		IRR	52%

Appendix 3: Projected Cash Flow

Projected Cash Flow								
Items	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Inflows								
Revenues		1,239,651.98	2,288,588.28	3,909,671.64	6,818,085.92	11,919,730.62	20,883,368.05	36,522,054.63
Loan	2,302,962.38	-	-	-	-	-	-	-
Equity	3,454,443.57	-	-	-	-	-	-	-
Total Inflows	5,757,405.95	1,239,651.98	2,288,588.28	3,909,671.64	6,818,085.92	11,919,730.62	20,883,368.05	36,522,054.63
Outflows								
Capital costs	0	-	-	-	-	-	-	-
Capital Replacement		-	-	-	-	-	-	-
Operating costs		700,315.86	911,891.86	1,329,923.86	2,041,891.86	3,288,363.86	5,465,613.86	9,280,155.86
Total Outflows	0	700,315.86	911,891.86	1,329,923.86	2,041,891.86	3,288,363.86	5,465,613.86	9,280,155.86
Net Cash flow Before Debt Service		539,336.12	1,376,696.42	2,579,747.78	4,776,194.05	8,631,366.76	15,417,754.19	27,241,898.76
Debt Service:								
Principal		143,965.69	158,153.85	173,850.93	191,105.97	210,073.61	230,923.82	253,843.46
Interest		213,631.56	199,443.40	183,746.32	166,491.28	147,523.64	126,673.43	103,753.79
Total Debt Service		357,597.25	357,597.25	357,597.25	357,597.25	357,597.25	357,597.25	357,597.25
Net Cash flow after Debt Service	-5757405.95	181,738.87	1,019,099.17	2,222,150.53	4,418,596.80	8,273,769.51	15,060,156.94	26,884,301.51
Cumulative Net Cash flow		181,738.87	1,200,838.04	3,422,988.57	7,841,585.37	16,115,354.88	31,175,511.82	58,059,813.34

Appendix 4: Small ruminants' population in Jamaica by Parish in 2017

