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KINANGO GALLA GOAT FARM AND COMMUNITY BREEDING CENTRE PROJECT.

1.0Background

Goat is a multi-use animal which is commonly reared for its meat. In many parts of the world, goat is raised for the meat, milk, wool and leather. About two-thirds of the county is covered by the hinterland. According to the 2019 Census, there were 255,143 cattle, 349,755 goats, 83,133 sheep, and 433,827 indigenous chickens in the livestock population.

The Kenya livestock sector supports the livelihoods of a significant part of the population and is key to attaining food and nutrition security in the country. The sector contributes approximately 12 per cent to the national Gross Domestic Product (GDP) and 42 per cent to agricultural GDP. It is also the main source of livelihood to the people in the Arid and Semi-Arid Lands (ASALs), accounting for 90% of employment and more than 95% of family incomes in these areas.

Goat is also called the Poor's man cow. In Kwale, Goat can be raised in different parts so it is becoming a growing enterprise and a living bank account for farmers. Goat and sheep belong to the different species, but their management is similar. Goat meat is accepted by all the caste and ethnic people; day by day; goat farming has become a popular business. Many farmers are using indigenous breed of goats while some of the young entrepreneurs have started to have cross hybrid of Gala/Boar goat and the indigenous breed (I.e. native breed according to the climate of that farm area).

1.1 Gala Goat

Local communities in northern and coastal Kenya are adapting to climate change through different approaches in order to mitigate its harmful effects demonstrated most visibly through frequent cycles of drought in East Africa. Coastal Kenya, communities are reshaping their adaptation strategy by embracing a unique breed of goats that is more resilient to the changing conditions. The Galla goat, a strong breed of goat has a reputation for surviving droughts thanks to its higher resistance to opportunistic diseases that eliminate ordinary goats due to weakening body immune system. Compared to ordinary goats living among the coastal communities of Kenya and Ethiopia, the Galla breed boasts higher yield of milk. The aim of the activity is to improve the quality of the East African breed through the introduction of the Galla goat improved breed.

1.2 Adapting to climate change

"This is a milestone in terms of boosting climate adaptation is concerned. Goats are highly valued among the communities. When droughts wipe out these animals, the communities are devastated.

2.0 Project Objectives:

- To provide a more resilient goat breed to the community with higher returns.
- To generate income and employment opportunity to the community
- To make easy access of quality Goat meat to the people of Kinango
- To make this farm a good breeding center through which the community farmers can get improved breeds of kids at a subsidized price
- To become a model farm to the young entrepreneurs and the farmers as well as students.

2.1 Project Mission

Gala Goat is a multifunctional animal and plays a significant role in economy and nutrition of landless, small and marginal farmers in Kenya. Gala Goat can efficiently survive in available shrubs and trees in adverse harsh environment in low fertility lands. They are prolific breeders and attain sexual maturity at the age of 5-6months as compared to the local breed. Gestation period in goat is short and twinning is much commanded small body size and docile nature, housing requirements and management problems with goats are less.

The goat meat is more lean (low cholesterol) and relatively good for people who prefer low energy diet especially in summer. It has higher level of iron, high potassium content and low sodium content when compared to the similar serving size of beef, pork, lamb and chicken. So, the meat is more preferable for anemic patient. It is also packed with proteins and vitamin B12, which is prior to get healthy skin.

3.0 WHY GALA GOAT AND NOT OTHER BREEDS?

These goats attain market weight at around 6 Months, half a year less than the traditional breed. **(70KG**) and they fetch three times the price of traditional breed.

A mature female Galla goat weighs between 45Kg and 55kg while the male one's weight can go up to 60-70kg as compared to adult traditional goat male goat which weighs between 30 and 40kg while a female weighs from 25 to 30kg.

The Gala Goat give birth twice in a year .The Gala Goat breed ordinarily under good feeding program give birth to twins.

A herd of twenty females under a good feeding regime can give birth to twins twice in a year .This gives a rough estimate of 70 goats keeping into account some mortality and possibility of a few goats not giving birth to twins.

3.1 Characteristics and adaptation

Pure Galla goats are docile and the hardiest small stock breeds on earth making it adaptable in great variety of pasture and climatic conditions.

The animal is an excellent walker, has sturdy legs and moves easily in rugged mountainous areas and through dense bush.

During drought conditions, the breed probably survives longer than most other animals without supplementary feeding or feed.

The goats adapt well to hot environments because of their small size and higher ratio of body surface area to body weight.

Also, their ability to conserve body water, their limited subcutaneous fat cover, and their hairy coats are good survival traits under a wide variety of climatic conditions.

3.2 Market

The meat of Galla goats is flavorsome, succulent, tender, extremely attractive and very tasty. Currently, the meat is much sought after for barbecue and spit roasting purposes.

For this reason, goats should be marketed between the ages of 6 and 15 months when they can fetch between **Ksh.10, 000** and **KSh15, 000** each depending on the sex for the local market and up to **Ksh.20,000**

3.3 Beneficiaries

The main purpose of this project is to start a Community breeding center for goats. This farm can be a center for production of improved breeds and kids are ultimately provided to the local community farmers which will be livelihood opportunity to them to create subsidiary income and employment in lower capital. Besides, New integrated technologies on rearing, housing and processing can be built up by this farm. This farm will be opened for farmers and students for internship and extension visit. The Gala Goat kids will be sold at a subsidized price to the community farmers to boost their breeding stock.

3.4 Location and facilities

This farm will be established at Kinango at the lower side of the model farm in a 2 acre plot. Apart from the land designated for Feathers of Hope Project there is an additional land set aside for this project.

The Project will be equipped with proper road, solar power for its lighting security, clean drinking water from the water project to be done.

3.5 Breeding stock

To start the project, we plan to acquire 30 Galla goats, with the following budget allocation:

- **Number of Breeding Goats**: 30
- **Cost per Goat**: 6,000 KES
- **Total Cost for Breeding Stock**: 30 goats * 6,000 KES = 180,000 KES

3.6 Feeding and health

The goats will feed mostly by grazing in the fields but supplemental feeds will be provided to boast the growth and health of the goats.

a. Supplemental Feed and Annual Cost Estimate for the Herd (Concentrates Used 4 Times a Month)

- **Frequency of Concentrates Use**: 4 times/month
- **Number of Days Concentrates Used Annually**: 4 days/month * 12 months = 48 days
- **Adjusted Daily Amount per Goat (kg)**: 0.2 kg (for days when concentrates are used)

Calculation

Supplemental Feed	Daily Amount per Goat (kg)	Total Daily Amount for Herd (kg)	Number of Days Used Annually	Total Annual Amount for Herd (kg)	Nutritional Benefits	Price per kg (KES)	Total Annual Cost (KES)
Concentrates	0.2	6	48	288	Energy, protein, vitamins	40	11,520
Mineral Licks	0.05	1.5	365	547.5	Essential minerals, vitamins	50	27,375

Lucerne Aurora seeds 1kg 5000
Chuff Cutter 50000 this is used for cutting fodder or pasture grass

Total Annual Cost: 93,895 KES

b. Lucerne Aurora

i. Lucerne (Alfalfa) Aurora Overview

Lucerne, also known as alfalfa, is a perennial forage crop known for its high nutritional value. The Aurora variety is specifically bred for improved yield and adaptability to various climatic conditions. Lucerne Aurora is an excellent source of protein, vitamins, and minerals, making it an ideal supplement for livestock diets.

ii. **Benefits of Lucerne Aurora in Goat Farming**

1. **High Nutritional Value**

- **Protein Content**: Lucerne Aurora is rich in protein, which is crucial for the growth, development, and milk production of goats.
- **Vitamins and Minerals**: It provides essential vitamins (A, D, E) and minerals (calcium, phosphorus, and magnesium), promoting overall goat health.
- **Fiber**: The high fiber content aids in digestion and improves gut health.

2. **Improved Growth and Weight Gain**

- Goats fed with Lucerne Aurora exhibit faster growth rates and better weight gain compared to those on a standard diet.

- The high protein content helps in muscle development, leading to healthier and more productive goats.

3. **Enhanced Milk Production**

    - Lucerne Aurora supports increased milk yield due to its rich nutrient profile.
    - The presence of key minerals like calcium and phosphorus aids in the production of high-quality milk.

4. **Better Reproductive Performance**

    - Improved nutrition from Lucerne Aurora leads to better reproductive health, increasing the likelihood of twins and reducing kidding intervals.
    - Higher fertility rates and better overall reproductive performance are observed in goats fed with this forage.

5. **Health Benefits**

    - **Immune System Support**: The vitamins and minerals in Lucerne Aurora strengthen the immune system, reducing the incidence of diseases.
    - **Bone Health**: High calcium content supports strong bone development, preventing issues like osteoporosis.

6. **Sustainability and Economic Efficiency**

    - Lucerne Aurora can be harvested multiple times a year, providing a continuous supply of high-quality forage.
    - It reduces the need for commercial feed supplements, lowering feeding costs and increasing farm profitability.
    - The perennial nature of Lucerne Aurora ensures long-term productivity, making it a sustainable choice for goat farming.

iii. Implementation in Goat Farming

1. **Feeding Strategy**

    - **Supplemental Feeding**: Lucerne Aurora can be used as a supplement to grazing, providing essential nutrients that may be lacking in natural pasture.
    - **Hay and Silage**: It can be conserved as hay or silage for feeding during dry seasons, ensuring a year-round supply of quality forage.

2. **Integration with Existing Practices**

    - **Mixed Diet**: Incorporate Lucerne Aurora with other forages and concentrates to create a balanced diet.
    - **Rotational Grazing**: Implement rotational grazing practices to maximize the utilization of Lucerne Aurora and maintain pasture health.

3. **Economic Impact**

    - **Cost-Effectiveness**: Reduces reliance on expensive commercial feeds, lowering overall production costs.
    - **Marketability**: Healthier and faster-growing goats can be sold at **a premium, enhancing farm income.**

4.0 VACCINES AND TREATMENT

1) Essential Medication Budget for a Herd of 30 Goats

We will focus on essential and basic treatments, including antibiotics, multivitamins, and parasitic control. Additionally, we will account for veterinary consultation and treatment costs.

Essential Medication and Treatment

Medication	**Purpose**	**Time/Stage of Administration**	**Dosage**	**Estimated Price (KES)**	**Annual Cost (KES)**
Ox tetracycline	Treats bacterial infections	As needed, based on veterinary diagnosis	As per veterinary prescription	300 per dose	30 goats * 1 dose/year * 300 KES = 9,000
Vitamin B Complex	Supports overall health and metabolism	During periods of stress, illness, or poor appetite	As per manufacturer's recommendation	150 per dose	30 goats * 1 dose/year * 150 KES = 4,500
Anti-Parasitic (Pour-on or Injectable)	Controls external parasites (lice, mites)	Every 3 months or as needed	As per manufacturer's recommendation	250 per dose	30 goats * 4 doses/year * 250 KES = 30,000
Veterinary Consultation and Treatment	Regular health check-ups and treatment	Monthly or as needed	-	1,500 per visit	12 visits/year * 1,500 KES = 18,000

Total Annual Cost: 61,500 KES

Since the goal is to fit within a 60,000 KES budget, we will adjust the frequency of veterinary consultations.

5.0 STRUCTURE CONSTRUCTION

A raised goat shelter with a size of 10 meters long, including partitions for a breeding area, using timber and iron sheets will be constructed.

1. Materials and Costs

a) Timber Frame and Flooring

- **Timber Posts**: For vertical supports.
  - **Quantity**: 30 pieces
  - **Price**: 800 KES/piece
  - **Total Cost**: 24,000 KES
- **Timber Beams**: For horizontal supports.
  - **Quantity**: 40 pieces
  - **Price**: 600 KES/piece
  - **Total Cost**: 24,000 KES
- **Timber Planks**: For flooring and walls.
  - **Quantity**: 50 pieces
  - **Price**: 400 KES/piece
  - **Total Cost**: 20,000 KES
- **Timber for Partitions**: For dividing the breeding area.
  - **Quantity**: 15 pieces
  - **Price**: 400 KES/piece
  - **Total Cost**: 6,000 KES
- **Nails and Screws**: For assembly.
  - **Estimated Cost**: 5,000 KES

Subtotal for Timber Frame and Flooring: 79,000 KES

b) Iron Sheet Roofing

- **Iron Sheets**: For covering the roof.
  - **Quantity**: 30 sheets
  - **Price**: 700 KES/sheet
  - **Total Cost**: 21,000 KES
- **Roofing Nails**: For attaching iron sheets.
  - **Estimated Cost**: 5,000 KES

Subtotal for Iron Sheet Roofing: 26,000 KES

c) Timber Flooring

- **Timber Planks**: For constructing the raised floor.
  - **Quantity**: 40 pieces
  - **Price**: 400 KES/piece
  - **Total Cost**: 16,000 KES

- **Support Beams**: For elevating the floor.

    - **Quantity**: 10 pieces
    - **Price**: 600 KES/piece
    - **Total Cost**: 6,000 KES
    - **Subtotal for Timber Flooring**: 22,000 KES

d) Timber Walls and Partitions

- **Timber Planks**: For constructing walls and partitions.

    - **Quantity**: 60 pieces
    - **Price**: 400 KES/piece
    - **Total Cost**: 24,000 KES

Subtotal for Timber Walls and Partitions: 24,000 KES

e) Wire Mesh for Ventilation

- **Wire Mesh**: For creating ventilation openings.

    - **Quantity**: 10 meters
    - **Price**: 500 KES/meter
    - **Total Cost**: 5,000 KES

Subtotal for Ventilation Openings: 5,000 KES

f) Feeding and Watering Areas

- **Feeding Troughs**: Timber or metal troughs.

    - **Quantity**: 4 troughs
    - **Price**: 2,000 KES/trough
    - **Total Cost**: 8,000 KES

- **Water Troughs**: Timber or metal troughs.

    - **Quantity**: 4 troughs
    - **Price**: 500 KES/trough
    - **Total Cost**: 2,000 KES

Subtotal for Feeding and Watering Areas: 5,000 KES

Grand Total: 161,000 KES

6.0 SUSTAINABILITY OF THE GOAT FARM AND COMMUNITY BREEDING CENTRE PROJECT.

1. Economic Sustainability

- **Income Diversification:** The project generates income through various channels, including the sale of mature goats, breeding services, and contributions from beneficiary farmers. This diversification reduces financial risk and ensures a steady revenue stream.
- **Cost Efficiency:** By using locally available resources such as Lucerne Aurora for feeding and solar power for energy needs, the project minimizes operational costs. These measures enhance the farm's financial viability and long-term sustainability.
- **Community Engagement:** The project involves local farmers, encouraging them to form groups and contribute to the initiative. This collective approach fosters a sense of ownership and commitment, ensuring the project's continuity and success.

2. Environmental Sustainability

- **Sustainable Feeding Practices:** Utilizing Lucerne Aurora, which is a perennial and drought-resistant forage crop, promotes sustainable land use. It reduces the need for chemical fertilizers and enhances soil health through nitrogen fixation.
- **Solar Energy Utilization:** Implementing solar power for lighting and other energy needs reduces the farm's carbon footprint and reliance on non-renewable energy sources. This approach aligns with global sustainability goals and mitigates environmental impact.
- **Waste Management:** The farm will implement effective waste management practices, such as composting goat manure to produce organic fertilizer. This not only reduces waste but also enhances soil fertility and supports sustainable agriculture.

3. Social Sustainability

- **Community Empowerment:** By providing training and resources, the project empowers local farmers with knowledge and skills to improve their livelihoods. This empowerment leads to greater community resilience and self-sufficiency.
- **Educational Opportunities:** The farm serves as a model for young entrepreneurs, students, and other farmers. By offering internships and extension visits, it promotes knowledge sharing and innovation in goat farming practices.
- **Food Security:** The project contributes to local food security by ensuring a reliable supply of high-quality goat meat and milk. This access to nutritious food supports the health and well-being of the community.

4. Risk Management and Mitigation

- **Veterinary Support:** Regular veterinary check-ups and timely treatments minimize the risk of disease outbreaks. This proactive approach ensures the health and productivity of the goat herd, reducing potential losses.
- **Security Measures:** Fencing, solar lighting, and guard dogs enhance farm security, protecting against theft and predation. These measures safeguard the farm's assets and ensure the project's continuity.
- **Adaptability to Climate Change:** The selection of Galla goats, which are resilient to drought and other harsh climatic conditions, ensures the farm's adaptability to changing environmental conditions. This resilience enhances the project's long-term sustainability.

5. Long-Term Impact and Expansion

- **Scalability:** The project's success can serve as a model for other regions, promoting the adoption of sustainable goat farming practices across Kenya. The scalability of the project ensures a broader impact on food security and economic development.
- **Continuous Improvement:** Regular monitoring and evaluation of the project will identify areas for improvement and innovation. This commitment to continuous learning and adaptation ensures the project's relevance and effectiveness over time.
- **Stakeholder Collaboration:** Partnering with local governments, NGOs, and research institutions will provide additional resources, expertise, and support. These collaborations enhance the project's sustainability and ability to address emerging challenges.

7.0 BUDGET BREAKDOWN.

Item	Description	Quantity	Unit Cost (KES)	Total Cost (KES)
Breeding Stock				
Galla Goats	Breeding goats	30	6,000	180,000
Feeding and Health				
Concentrates	Supplemental feed	288 kg	40	11,520
Mineral Licks	Essential minerals and vitamins	547.5 kg	50	27,375
Lucerne Aurora Seeds	High-quality forage	1 kg	5,000	5,000
Chuff Cutter	Fodder cutter	1	50,000	50,000
Medication	Essential medication and treatment			61,500
Labor				
Herding and Feed Collection	Monthly labor costs for herding and feed collection	12 months	6,000	72,000
Structure Construction				
Timber Frame and Flooring	Vertical supports	30 pcs	800	24,000
	Horizontal supports	40 pcs	600	24,000
	Flooring and walls	50 pcs	400	20,000
	Partitions	15 pcs	400	6,000
	Nails and screws	-	-	5,000
Iron Sheet Roofing	Roof cover	30 sheets	700	21,000
	Roofing nails	-	-	5,000
Timber Flooring	Raised floor construction	40 pcs	400	16,000
	Floor support beams	10 pcs	600	6,000
Timber Walls and Partitions	Wall and partition construction	60 pcs	400	24,000
Wire Mesh	Ventilation openings	10 meters	500	5,000
Feeding and Watering Areas	Feeding troughs	4 troughs	2,000	8,000
	Water troughs	4 troughs	500	2,000
Total Estimated Cost				**593,395**

8.0 INCOME PROJECTIONS

Income Source	Quantity/Unit	Unit Price (KES)	Total Income (KES)
Mature Galla Goats Sales	50 goats	10,000	500,000
Breeding Services	30 services	500	15,000
Farmer Subscription Fees	200 farmers	1,000	200,000
Total Projected Income			**715,000**

1. Explanation of the Income Projections.

- **Mature Galla Goat Sales**: The farm plans to sell 50 mature Galla goats within 12 months, generating substantial revenue. The Galla goats are highly valued for their meat, which is in high demand.
- **Breeding Services**: The project will offer breeding services to the community, charging 500 KES per service. This will provide an additional income stream.
- **Farmer Subscription Fees**: By charging a subscription fee of 1,000 KES to 200 farmers, the project will secure consistent revenue. Subscribers will benefit from free breeding services and other farm resources, making the subscription attractive.

The projected income of 715,000 KES surpasses the total project cost, indicating the financial viability and sustainability of the Kinango Goat Farm and Community Breeding Centre. The income streams are diverse, ensuring a steady flow of revenue to support and expand the project.

9.0 CONCLUSION

The Kinango Goat Farm and Community Breeding Centre Project is a holistic and well-thought-out initiative that integrates economic, social, and environmental sustainability. With a detailed budget of 593,395 KES and projected income of 715,000 KES, the project is financially viable and poised to make a significant impact on the local community. By providing resilient Galla goats, creating employment opportunities, enhancing food security, and promoting sustainable farming practices, the project aligns with broader goals of economic development and environmental stewardship.

The project's comprehensive approach, including community engagement, educational opportunities, and risk management strategies, ensures long-term viability and success. Through continuous improvement and collaboration with stakeholders, the Kinango Goat Farm and Community Breeding Centre Project can serve as a model for sustainable agriculture, contributing to the well-being and prosperity of Kinango Sub County and beyond.