



**Green Masai Foundation**

# **MBEYA MEGA RANCH**



First mega and modern ranch in East Africa

**GREEN HORIZONS - SUSTAIN. THRIVE. CONSERVE.**

Prepared by: Arip Kinasha



## GMF-MBEYA MEGA MODERN RANCH-2024

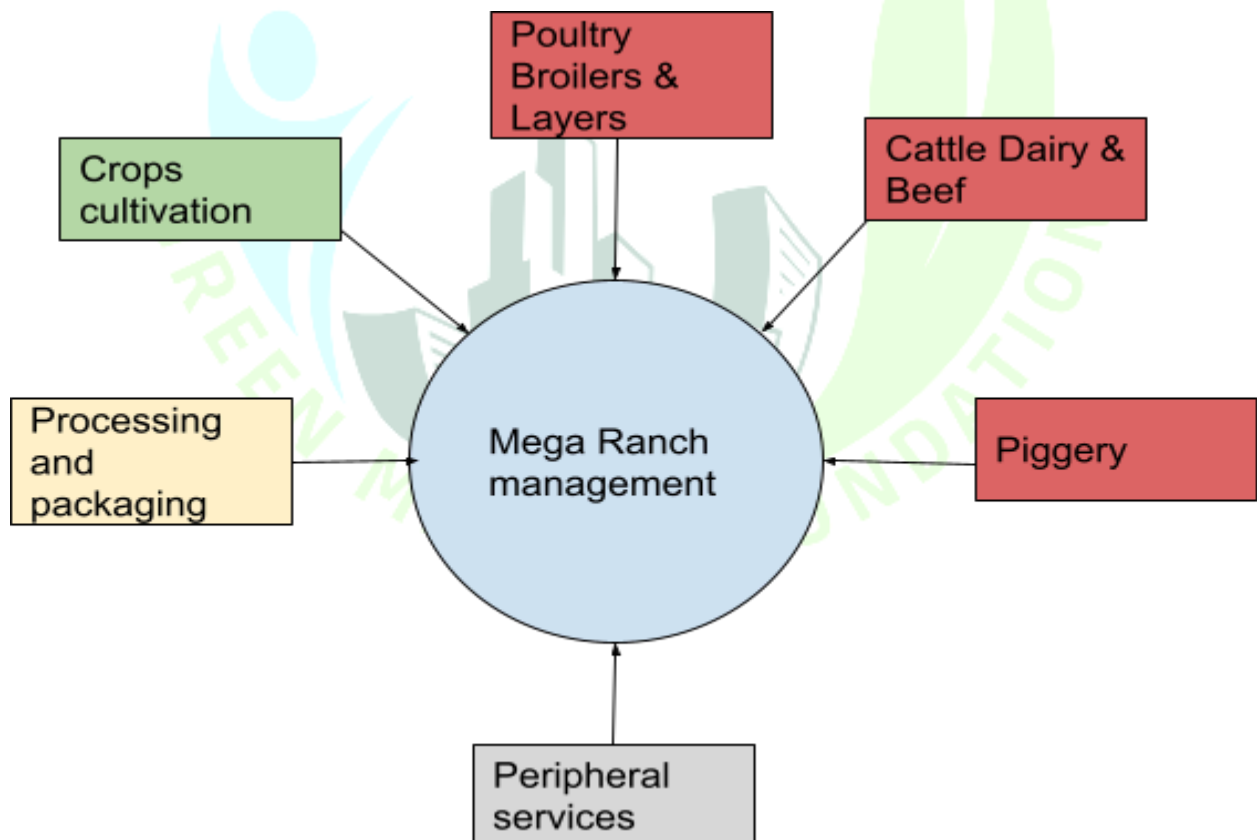
Project date: **18/02/2023**

Project status: Fund preparation and field operations ([Modules test run and fundraising](#))

Project name: [GMF-Mbeya Mega Ranch](#) peripheral structures visualization

### Mega Ranch

A mega ranch is a collection of various agricultural production divisions that are collectively monitored from the same management office, where each division is designed to be fully functional independently. Then the financial techniques applied are meant to centralize the net profit margins from all the divisions for consistent financial growth.





## 1. Crop Cultivation:

**Objective:** To cultivate various crops efficiently and sustainably to contribute to food security and economic growth.

**Activities:** Planning crop rotation, soil preparation, planting, irrigation management, pest control, and harvesting.

**Equipment:** Tractors, plows, seeders, irrigation systems, harvesting machinery, and storage facilities etc. (Full list to be found in a separate document for the unit)

## 2. Poultry & Livestock:

**Objective:** To raise poultry and livestock for meat and dairy production, ensuring high-quality products and animal welfare.

**Activities:** Breeding, feeding, healthcare, and housing management for chickens, goats, sheep, and cattle.

**Equipment:** Chicken coops, barns, milking machines, feeders, drinkers, and veterinary supplies etc. (Full list to be found in a separate document for the unit)

## 3. Dairy and Beef Farming:

**Objective:** To produce high-quality dairy and beef products for local consumption and export markets.

**Activities:** Milking, breeding, feeding, and healthcare for dairy cattle, as well as breeding and raising beef cattle.

**Equipment:** Milking parlors, cooling tanks, feeding troughs, vaccination equipment, and hoof trimming tools etc. (Full list to be found in a separate document for the unit)

## 4. Piggery:

**Objective:** To raise pigs for meat production, utilizing modern techniques to optimize productivity and minimize environmental impact.

**Activities:** Breeding, farrowing, feeding, and healthcare for pigs, as well as waste management.

**Equipment:** Pig pens, feeding systems, ventilation systems, and manure handling equipment etc. (Full list to be found in a separate document for the unit)

## 5. Processing and Packaging:

**Objective:** To add value to agricultural products through processing and packaging, meeting quality standards and consumer preferences.

**Activities:** Cleaning, sorting, processing, and packaging of crops, meat, and dairy products.

**Equipment:** Processing machinery (e.g., threshers, mills, pasteurizers), packaging machines, labeling equipment, and storage facilities etc. (Full list to be found in a separate document for the unit)

## 6. Peripheral Services:

**Objective:** To provide essential services to farmers in the surrounding area, supporting agricultural development and sustainability.

**Activities:** Offering services such as manure production, water drilling, and supplying agricultural inputs.

**Equipment:** Manure composting facilities, water drilling rigs, storage tanks, and delivery vehicles for agricultural inputs etc. (Full list to be found in a separate document for the unit)

Each module within the mega ranch contributes to the overall goal of sustainable agricultural production, value addition, and community development. By integrating these modules, the ranch aims to create a comprehensive and efficient agricultural ecosystem that benefits both the organization and the local community.

The Green Masai Foundation's Mega Ranch project represents a groundbreaking approach to agricultural development, offering multifaceted benefits that reverberate from the grassroots to the national level. At the micro level, the project promises to uplift local communities by creating employment opportunities, enhancing household incomes, and empowering smallholder farmers with knowledge and resources to improve their agricultural practices. By integrating livestock farming with crop cultivation, the project maximizes resource utilization and stimulates economic activity in rural areas, fostering inclusive growth and reducing income disparities.

Furthermore, the project's emphasis on sustainable agriculture and environmental conservation attracts eco-conscious consumers and investors, bolstering the nation's reputation as a leader in sustainable agricultural practices. Through strategic partnerships and innovation in agriculture, the project drives technological advancements, increases productivity, and opens new markets for high-quality agricultural products, thereby generating foreign exchange earnings and strengthening the nation's economy.

On a macro level, the project's ripple effects extend to infrastructure development, market efficiency improvements, and enhanced resilience to climate change, contributing to overall economic growth and stability. By promoting regional integration and trade partnerships, the project enhances market access for agricultural products, fostering regional cooperation and economic integration.

Ultimately, the Green Masai Foundation's Mega Ranch project serves as a catalyst for agricultural transformation and rural development, laying the groundwork for sustained economic growth, poverty reduction, and prosperity for the nation as a whole.



# Green Masai Foundation Mega Ranch Layout

## 1. Administrative Division:

**Administration Office:** Responsible for overall management and administrative functions of the ranch.

**Human Resources Department:** Manages personnel, recruitment, and training of staff.

**Finance and Accounting Department:** Handles financial planning, budgeting, and accounting activities.

**Legal and Compliance Department:** Ensures adherence to regulations and legal compliance.

## 2. Agricultural Production Division:

**Crop Cultivation Area:** Dedicated zones for cultivating various crops, including maize, wheat, rice, and vegetables.

**Livestock Farming Section:** Facilities for raising cattle, goats, sheep, and poultry for meat and dairy production.

**Greenhouse Complex:** State-of-the-art greenhouses for year-round cultivation of high-value crops, such as tomatoes, peppers, and strawberries.

**Aquaculture Facility:** Ponds and tanks for fish farming, including tilapia and catfish.

## 3. Research and Development Division:

**Research Laboratories:** Equipped with advanced equipment for agricultural research, soil analysis, and crop breeding.

**Experimental Fields:** Dedicated areas for testing new farming techniques, crop varieties, and irrigation methods.

**Collaboration Hub:** Space for partnering with academic institutions, research organizations, and technology providers.

## 4. Training and Education Center:

**Training Facilities:** Classrooms, workshops, and demonstration farms for educating farmers on modern agricultural practices.

**Extension Services Office:** Provides on-site support and agricultural extension services to local farmers and communities.

**Farmer Field Schools:** Interactive learning spaces where farmers can receive hands-on training and practical experience.

## 5. Infrastructure and Support Services:

**Irrigation System:** Comprehensive irrigation network utilizing drip irrigation, sprinkler systems, and water storage facilities.

**Machinery and Equipment Yard:** Storage and maintenance facilities for tractors, harvesters, and other agricultural machinery.

**Warehousing and Storage:** Facilities for storing harvested crops, feed, and agricultural inputs.

**Staff Accommodation:** Residential quarters for ranch employees and visiting researchers.

**Utilities and Amenities:** Power generation, water supply, and recreational areas for staff well-being.



## 6. Sustainability and Environmental Conservation:

**Conservation Areas:** Preserved natural habitats and wildlife corridors within the ranch to promote biodiversity.

**Renewable Energy Infrastructure:** Solar panels, wind turbines, and biomass facilities for sustainable energy production.

**Waste Management Systems:** Recycling facilities, composting sites, and waste treatment plants to minimize environmental impact.

## 7. Community Engagement and Outreach:

**Community Center:** Meeting space for hosting outreach programs, workshops, and farmer forums.

**Cooperative Development Office:** Supports local cooperative groups and facilitates market linkages for smallholder farmers.

**Agro-Tourism Facilities:** Visitor center, eco-trails, and farm tours to promote agritourism and rural development.

This layout outlines the key divisions and facilities of the Green Masai Foundation Mega Ranch, designed to advance agriculture in Tanzania, provide support to local farmers, and promote sustainable development in the region.

# Green Masai Foundation Mega Ranch in Mbeya, Tanzania

## Key Infrastructure Considerations

### 1. Road Infrastructure:

**Demand Response:** Addressing the need for roads in Mbeya GMF-MEGA RANCH locality to facilitate transportation of goods and personnel to and from the ranch.

**Road Construction:** Investing in the construction and maintenance of roads within the ranch premises to ensure accessibility and operational efficiency.

### 2. Electricity Infrastructure:

**Grid and Backup Electricity:** Ensuring reliable access to both grid electricity and backup power sources to sustain operational processes within the ranch.

**Power Generation:** Installing renewable energy sources such as solar panels and backup generators to supplement electricity supply.

### 3. Water Infrastructure:

**Abundant Water Supply:** Implementing multiple initiatives to ensure ample water availability throughout the ranch's development and operation phases.

**Water Management:** Incorporating water harvesting, storage, and distribution systems to optimize water usage for irrigation and livestock needs.

### 4. Post-Ranch Establishment Infrastructure Planning:

**Agricultural Production Machinery:** Procuring essential machinery like portable turbines, manure plant machinery, and water drilling equipment to maximize production efficiency.

**Biogas Production Plant:** Establishing a biogas production facility to utilize biomass for energy and gas production, reducing living costs within the ranch.

**Security System:** Implementing advanced security measures to safeguard valuable assets and ensure the continuous safety of the property.

### 5. Comprehensive Approach:

**Holistic Consideration:** Recognizing that these infrastructure elements are foundational to the successful establishment and operation of the mega ranch.

**Catalytic Impact:** Accomplishing these key factors will catalyze other processes required for the ranch's establishment, ensuring its long-term sustainability and success.

As Green Masai Foundation embarks on the development of the Mega Ranch in Mbeya, Tanzania, careful consideration and proactive planning of these infrastructure components are paramount to achieving our vision of a thriving and sustainable agricultural enterprise.




## Mbeya Mega Ranch Road Evaluation [[Rujewa,Mbeya,Tanzania-2024](#)]

### Purpose:

The evaluation aims to assess the benefits of establishing all-weather roads to and within the Mbeya Mega Ranch. It will provide insights into the potential positive impacts on both the private and government sectors, facilitating informed decision-making on infrastructure planning and potential requests for government support.

### Current situation ([Executive evaluation](#))

SN	Particulars	State
1.	Road	Seasonal mud road [Default condition]
2.	Request to be made	2024 to the Regional government offices
3.	Initiative	Pending
4.	Road Image  Transportation challenges during the rain seasons, bumpy roads dangerous for delicate cargo.	
5.	Hinderance	Movements to and from the farm area ( <a href="#">Intra?</a> )
6.	Status of 2024	Year 1 initiative, dated: 18/02/2024
7.	Mega ranch project affected percentage by unit	<b>40.5%</b> = Alive animals/eggs/milk transportation
8.	Mega ranch project affected percentage by division	<b>33.33%</b> = Livestock division
9.	Government Road initiatives projection	<b>Next 3 Years</b>
10.	Mega ranch divisions (+Units) 1. Livestock unit (Broilers,Layers,Beef farming,Dairy farming, Pig farming) 2. Crop cultivation (Maize,Rice,Beans,greenhouse vegetables,Fruits, Potatoes,Onions etc.) 3. Processing and packaging factories and large modern storage facilities.	Livestock = Go/ <b>No-go</b>  Crop cultivation = <b>Go</b> /No-go  Factories & Storage = <b>Go</b> /No-go
Overall project is affected by <b>33.33%</b> Statistical projections ( <a href="#">Further evaluation required</a> )		

## GMF-MBEYA MEGA RANCH RESEARCH -[[Socio-economic profile for the project](#)]

### Key Objectives:

**Assessing Economic Impact:** Determine how the presence of all-weather roads in the Mbeya Mega Ranch area can positively influence economic activities, such as agriculture, transportation, and commerce.

**Enhancing Accessibility:** Evaluate how improved road infrastructure can enhance accessibility to and within the ranch, facilitating transportation of goods, personnel, and resources.

**Stimulating Development:** Explore the potential for road development to stimulate local and regional development, attracting investment, and fostering economic growth.

**Advocacy and Planning:** Use evaluation findings to advocate for government support and funding for road construction projects in the Mbeya Mega Ranch area.

### Methodology:

**Economic Analysis:** Conduct a comprehensive economic analysis to quantify the potential benefits of improved road infrastructure on local businesses, agriculture, and overall economic development.

**Stakeholder Consultation:** Engage with stakeholders including local communities, government officials, and private sector representatives to gather insights and assess their needs and expectations regarding road infrastructure.

**Site Assessment:** Conduct on-site assessments to evaluate current road conditions, identify areas for improvement, and determine the feasibility of road construction projects.

**Cost-Benefit Analysis:** Perform a cost-benefit analysis to weigh the financial investments required for road construction against the anticipated economic and social benefits.

**Proposal Development:** Based on evaluation findings, develop proposals outlining the rationale, scope, and potential impacts of proposed road construction projects, to be presented to government authorities and potential funding partners.

### Expected Outcomes:

**Data-driven Insights:** Obtain data-driven insights into the economic, social, and developmental impacts of establishing all-weather roads in the Mbeya Mega Ranch area.

**Informed Decision-Making:** Equip decision-makers with the necessary information to prioritize road infrastructure projects and allocate resources effectively.

**Advocacy for Support:** Use evaluation findings to advocate for government support and funding for road construction initiatives, emphasizing their importance for local and regional development.

**Enhanced Project Planning:** Inform the planning and implementation of road construction projects within the Mbeya Mega Ranch, ensuring alignment with stakeholder needs and development objectives.

As Green Masai Foundation evaluates the potential benefits of establishing all-weather roads in the Mbeya Mega Ranch area, we aim to leverage this information to advocate for sustainable infrastructure development that will contribute to the socio-economic growth and prosperity of the region.

**Information required** (For government discussions/ Large scale private investors)

SN	Particulars	Specifications		Parameters
1.	Mbeya, Tanzania,  Rujewa Mbarali Kyela	Ward District District	Population size  <a href="#">Population size</a> <a href="#">Population size</a> <a href="#">Population size</a>	n people  n people(C-2022) 446,336 people(C-2022) n people(C-2022)
2.	Status	<b>GMF-Mbeya tour</b>	2024	<b>Scouting land for a mega ranch establishment.</b>
3.	Private assets	Availability	Scale	Number
4.	Government assets	Availability	Scale	Number
5.	Employment rate	Low	Small scale farmers	Number
6.	Roads required	To village administration	Km	Length (n-km to farm)
7.	Road construction	Tarmac road	Km	cost/km
8.	Construction companies	Private	<a href="#">List of companies</a>	Open for discussion
9.	Road construction policy	Review	Roads Act,2007	<b>Done</b> /Not done
10.	Private construction	Fund raising	Benefactors	Acceptable/Not acceptable
11.	Road users	Rujewa village	Population size	n people
12.	Road classification <a href="#">Act 2007 section 11</a>	To farm location	Public road	n-km
13.	Road to farm area	From public road to loading gate	Distance	n meters
14.	Construction cost	Private road	<a href="#">cost/100 meters</a>	Amount
15.	Roads within farm	Intra farm roads	Distance	n km (Requires ranch map design)
16.	Time estimated for n-km road construction	Company name	Date of discussion	n days/months/Years
17.	Repairing the mud road	Company name	<a href="#">cost/km</a>	Amount

The end result of this survey will be integrated into the MIS (Management Information System) that is going to be the fundamental part of the Rujewa Mega Ranch managerial roles. This survey will help in organizing the ranch facilities and infrastructure in a carefully examined order that is going to work as smart ranch planning. Each facility within the ranch will easily be monitored and maintained using the information that will be continuously obtained by the survey beacons.



**Infrastructure planning: Ranch specifics (Accuracy to be obtained after survey)**

SN	Particulars	Unit	Parameters
1.	Rujewa Farm area	Acres Square meters Square Kilometers	150 (Or above) 607,028 0.607028=1
2.	Rujewa Farm perimeter (Linear measurements)	Meters 60%Approx	364216.8
3.	Rujewa Land survey and mapping projected cost 2023	Tsh/Full process	70,000,000 (at 2022 market price)
4.	Heavy fence grade 1 (Chain link fence)	1 Role= Meters Total perimeter Approx	30 364216.8
	Total Area (Survey required for confirmation)		
	Fence rolls required for fencing 150 Acres	Number of fence rolls	12,141
	Total purchasing cost for chain link  (@ Cost * No of rolls )	Tsh/Roll * Rolls	120,000 * 12141  (Tsh Eq to \$5,87,448.21)
	Hippo Privacy Screen Fence Heavy Duty Shade Net with Polyester Band, Brass Eyelets & Tie Cords. (Charcoal, 1.5 mt X 10 mt) Pet Fence	Tsh/10 Meters (364216.8/10)= 36421.68	84,000 * 36421.68  (Tsh Eq to \$12,30,839.69)
5.	Heavy fencing grade 2 (Brick wall fence) (Data obtained from recent field work)	2 Acres P=8093.7M Cost = Tsh  150 Acres P=607028M Cost = Tsh	60% Approx 4856.22 = 50 Mil * 75.1  60% Approx 364216.8 = Tsh Eq to \$1.5 Mil
6.	Biosecurity protocols and rules for the livestock production units.  (Rules will be provided by the Agricultural experts and veterinary doctors to keep the animals safe at all times)	Broilers unit Layers unit Dairy farm unit Beef farm unit Piggery unit Sheep unit Goats unit	Documents, signs and posters
7.	<u>Geofencing &amp; Beaconing</u>  (To be used around the MMR distribution channels of the domestic markets and later on the international markets)	MMR Sales offices and supply points	Installation and maintenance cost to be evaluated.
SN	Particulars	Unit	Parameters

8.	<a href="#">Thermal cameras</a> and thermal scanners (To be used for MMR Machinery inspections, through obstacle observations etc.)	MMR inspections	Purchase and maintenance cost to be evaluated.
----	--	-----------------	--

### Rujewa Mega Ranch Perimeter Protection

The ranch will consist of a long list of expensive and delicate machinery and well-integrated work systems in both computerized and actuated formats, which should remain safe and well-protected at all times. This will allow a smooth flow of production operations and maximization of efficiency as projected during the planning phase. The following is a list of ways that will be used for inter and intra-boundary security.

**Physical Barriers:** Installation of fences, walls, and gates around the perimeter to deter unauthorized access.

**Surveillance Systems:** Implementation of CCTV cameras, motion sensors, and drones for continuous monitoring of the ranch's surroundings.

**Access Control:** Use of biometric scanners, key cards, or access codes to restrict entry to authorized personnel only.

**Security Personnel:** Deployment of security guards and patrols to monitor the ranch's boundaries and respond to any security breaches.

**Alarm Systems:** Installation of alarms and sirens to alert security personnel and deter intruders in case of unauthorized entry.

**Lighting:** Installation of high-quality lighting systems along the perimeter to enhance visibility and deter criminal activity during nighttime.

**Emergency Response Plan:** Development of a comprehensive plan outlining procedures for handling security incidents, including evacuation routes and emergency contacts.

Through implementation of these security measures, the Rujewa Mega Ranch aims to ensure the safety and protection of its assets, personnel, and operations, thereby safeguarding its productivity and contributing to the overall success of the project.

...