



# **The Kenya Biogas Stakeholders Network**

**5-YEAR STRATEGIC PLAN  
2024-2028**

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April 2024



# 5-YEAR STRATEGIC PLAN FOR BIO-NET, KENYA

Validated: 20<sup>th</sup> March 2024

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### Abbreviations

**ABPP** African Biogas Partnership Programme

**ABC** African Biodigester Component

**ABC-K** Association of Biogas Contractors of Kenya

**ABS-K** Association of Biogas Sector of Kenya

**AGM** Annual General Meeting

**BEA** Biogas Experts Association

**BIO-NET** Kenya Biogas Stakeholders Network

**EPRA** Energy and Petroleum Regulatory Authority

**GIZ** German Development Cooperation

**JKUAT** Jomo Kenyatta University of Agriculture and Technology

**KEBS** Kenya Bureau of Standards

**KPI** Key Performance Indicators

**NABUA** National Biogas Users Association

**NCA** national Construction Authority

**NEC** National Executive Board

**NEMA** National Environmental Management Authority

**NITA** National Industrial Training Authority

**NGO** Non-Governmental Organizations

**MEL** Monitoring Evaluation and Learning

**MSME** Micro Small and Medium and Enterprises

**MOEP** Ministry of Energy and Petroleum

**OFL** Office of the First Lady

**PESTEL** Political, Economic, Social, Technological, Environmental and Legal

**ROI** Return on Investment

**SWOT** Strength, Weaknesses, Opportunities and Threats

**SNV** Dutch Technical Cooperation

**TNB** The National Board

**UNIDO** United Nations Industrial Development Organization



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### Definition of Terms

**Strategic Plan:** Strategic planning is the art of formulating business strategies, implementing them, and evaluating their impact on organizational objectives.

**Sustainability:** the sustainability of economic growth through avoidance of the depletion of natural resources in order to maintain an ecological balance.

**Bioenergy:** renewable energy produced by living/biological organisms

**Biodigester:** A biodigester is a system that biologically digests organic material, either anaerobic (without oxygen) or aerobically (with oxygen)

**Bioslurry:** Biogas slurry is a secondary product produced by anaerobic fermentation of bio-materials

**Biogas:** gaseous fuel, especially methane, produced by the fermentation of organic matter.

**Energy access:** Sustainable energy access is a socially inclusive energy supply system that gives both the poor and the non-poor sustainable access to at least the minimum amount of energy for their basic needs.

**CHP:** Combined heat and power (CHP), also known as cogeneration, is the concurrent production of electricity or mechanical power and useful thermal energy (heating and/or cooling) from a single source of energy.

**Quality Control:** Quality control (QC) is a process through which a business seeks to ensure that product quality is maintained or improved.

**Circular Economy:** The circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible.

**Transformative change:** a fundamental, system-wide reorganization across technological, economic and social factors.



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### **Preface**

It is with great joy that the Kenya Biogas Stakeholders Network presents its Strategic Plan for the period 2024-2028. This document is a result of a consultative and participatory process that involved input from various stakeholders under the stewardship of the National Executive Board and with support from SNV.

A strategic plan not only stipulates the organization's vision but also looks at strategic pillars and operations that can help the organization to achieve its goals. It also serves as the benchmark upon which the organizational growth is measured. It is therefore a living, working document for reference.

This Strategic Plan comes in the backdrop of the enactment of the National Bioenergy Strategy which was launched in 2020 and the signing of the National Bioenergy Strategy Action Plan which was signed into force only recently. The Strategy recognizes Biogas as an important subsector that can help the Country leapfrog energy access targets. According to the Strategy, a feasibility study on biogas has established that it is possible to construct 6,500 biogas digesters annually in Kenya, and that the country has the potential to establish 2.3 million digesters. BIO-NET aligns its strategic planning to the National Bioenergy Strategy and hence sets a clear vision that sees a sustainable economy powered by biogas technology.

I therefore urge all stakeholders to be action oriented and operate in a resolute way. I also hope that we shall all take time to familiarize ourselves with this document and own it in order to enhance achievement of our mission within the desired time frame. On behalf of the entire BIO-NET fraternity, I thank all members of the Executive Committee for leading the entire process and to SNV for providing financial and technical support that resulted into the development of this Strategic Plan.

I also take this opportunity to thank all stakeholders who contributed their opinions during the development of this document. It is my joy to note that the BIO-NET National Board has made a commitment to support the secretariat in achieving the strategic goals. I am therefore convinced that together we can move BIO-NET to the next level of growth.

Chairman,

Paul Sabwa Kamau



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# Executive Summary

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### **Scope:**

This strategic plan outlines BIO-NET's vision, mission, and key strategies for promoting the widespread adoption and utilization of biogas technology in Kenya.

### **Primary Users:**

This plan is intended for a diverse audience, including BIO-NET members, government agencies, investors, entrepreneurs, farmers, and the general public.

### **Purpose:**

This plan aims to:

- Guide BIO-NET's activities towards achieving its vision of a sustainable economy powered by biogas technology.
- Inform stakeholders about the potential of biogas to address Kenya's energy challenges and contribute to environmental and social well-being.
- Mobilize action from various stakeholders to support the growth and development of the biogas sector in Kenya.

### **Ambition:**

BIO-NET aspires to position biogas as a sustainable solution for Kenya's energy need addressing the challenges of a growing population and reliance on fossil fuels.

### **Challenge:**

Kenya faces a critical need for clean, affordable energy solutions, particularly for its vital dairy industry struggling with rising energy costs and environmental impact.

### **Opportunity:**

Biogas technology presents a powerful solution by converting organic waste into clean, renewable energy, empowering communities, protecting the environment, and fuelling sustainable growth.

### **Impact:**

Biogas adoption can deliver significant economic, environmental, and social benefits:

- ✓ Economic:





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- Lower energy costs for farmers, increased income through bio-fertilizer sales, and job creation in the biogas sector.
- ✓ Environmental:
  - Reduced greenhouse gas emissions, improved air quality, and responsible waste management.
- ✓ Social:
  - Improved health outcomes, empowered, men, women, youth, PLWD, marginalized groups and strengthened rural communities.

### **Potential:**

Studies indicate Kenya has the potential to install millions 6500 annually, 2.3M (Bioenergy strategy 2027) of biogas digesters, particularly in small-scale dairy farms, unlocking substantial economic and environmental benefits.

### **Strategic Pillars:**

- (i) Resilience & Collaboration
- (ii) Sustainable Growth.
- (iii) Biogas Value Cycle.
- (iv) Member Empowerment.
- (v) Biogas Advocacy.
- (vi) Biogas Knowledge

### **Rallying Call:**

BIO-NET invites all stakeholders to join the Biogas Revolution and collaborate to unlock the transformative potential of biogas for a more sustainable and prosperous Kenya.



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# CHAPTER 1.

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## 1 OVERVIEW OF THE BIOGAS SUB-SECTOR IN KENYA

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### 1.1 Introduction

#### Energy Landscape

The energy landscape in Kenya is characterized by a dominant reliance on fossil fuels, with biomass and petroleum products playing crucial roles in electricity generation and household cooking. However, this heavy dependence poses challenges such as energy insecurity, price fluctuations, and environmental concerns.

With the country's population projected to reach 75 million by 2030, there is a pressing need for Kenya to transition towards sustainable and reliable energy sources to meet the growing energy demand while addressing these challenges effectively.

#### Bioenergy Potential

Kenya boasts abundant biomass resources, encompassing agricultural residues, animal waste, and municipal solid waste, offering a rich potential for bioenergy production. Recognizing this opportunity, the Kenyan government has implemented supportive policies and initiatives to foster the growth of bioenergy.

Examples include the National Biogas Strategy and the implementation of Feed-in Tariffs tailored for renewable energy sources. These governmental efforts signify a concerted push towards harnessing bioenergy as a sustainable solution to meet energy needs while mitigating environmental impact.

#### Biogas Sub-Sector

The biogas sub-sector in Kenya is currently in its early stages of development, yet it presents considerable potential for enhancing the country's energy mix and tackling environmental issues. Biogas technology plays a significant role in Kenya's renewable energy landscape, offering a sustainable and eco-friendly source of energy.

The biogas sub-sector encompasses technologies such as fixed dome and pre-refabricated plants. Understanding the distinctiveness of biogas within this spectrum is crucial for effective policy development and investment planning.

### 1.2 Benefits and Impacts of Biogas

Biogas is a versatile and environmentally friendly energy source with numerous advantages:



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- (i) **Environmental Benefits:** Biogas technology reduces soil, water, and air pollution, contributing to a cleaner environment. It helps mitigate the greenhouse effect and decreases reliance on fossil fuels.
- (ii) **Economic Benefits:** Biogas sector generates employment opportunities, particularly in rural areas, and the biogas technology encourages a circular economy by utilizing organic waste for energy production and organic manure.
- (iii) **Social Benefits:** Biogas technology promotes energy access and food security by providing a reliable and affordable source of energy for cooking and other productive uses. It also reduces health risks associated with indoor air pollution from traditional cooking methods.

### 1.3 Entrepreneurship and Business Environment

The business environment for biodigester technology in Kenya presents both opportunities and challenges:

- i. **Market Potential:** The biodigester market is largely driven by the private sector, with significant growth potential fuelled by increasing demand for renewable energy solutions and favourable policies and incentives.
- ii. **Gender Dynamics:** While the biodigester sector is predominantly male-dominated, there is growing recognition of the role of women entrepreneurs. Efforts to promote gender inclusivity and empower women in the sector are underway.
- iii. **Market Segmentation:** The biodigester market is segmented into various categories, including fixed dome, prefabricated, flexi, and floating drum biodigesters. Each segment offers unique opportunities for entrepreneurship, from installation and maintenance to marketing and training.

### 1.4 Medium to Large-Scale Systems

The deployment of medium to large-scale biogas systems in Kenya remains largely untapped due to high investment costs and technical capacity constraints. However, recent developments, such as the development of standards for farm-scale biogas systems, signal potential growth opportunities in this segment.

### 1.5 Current State of the Biogas Market

#### Technological Advancements:

- The biogas sector in Kenya is witnessing advancements in digester designs, such as prefabricated and flexi models, making them more adaptable and easier to install.
- Innovations in materials and construction techniques are leading to more efficient and cost-effective digesters.



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- Research and development efforts are ongoing to improve biogas utilization technologies, such as co-generation for combined heat and power (CHP) and biogas upgrading to biomethane for grid injection.

### **Contribution to Kenya's Economy:**

- **Environmental Benefits:** Biogas reduces reliance on fossil fuels, mitigating climate change and improving air quality. It also promotes sustainable waste management, contributing to a cleaner environment.
- **Economic Benefits:** Biogas creates jobs in manufacturing, installation, and maintenance of digesters, fostering rural development and entrepreneurship. Additionally, it stimulates the production of organic fertilizer, enhancing agricultural productivity and income generation.
- **Social Benefits:** Biogas improves energy access in rural areas, promoting health by reducing indoor air pollution from traditional cooking methods. It empowers women by reducing time spent collecting firewood and providing opportunities for income generation.

### **Alignment with Government Objectives:**

BIO-NET's goals align with Kenya Vision 2030, the Bottom-Up Economic Transformation Agenda, and other government initiatives by:

- Promoting clean energy and waste management.
- Creating employment opportunities, particularly for youth.
- Supporting micro, small, and medium enterprises (MSMEs) in the biogas sector.
- Contributing to digitalization through innovative solutions and training.

### **Entrepreneurship and Business Environment:**

#### *Opportunities:*

- Growing demand for clean energy solutions.
- Favourable government policies and incentives.
- Diverse market segments offering various entrepreneurial opportunities.
- Potential for medium-to-large-scale systems with recent policy developments.

#### *Challenges:*

- High initial investment costs for digesters.



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- Limited access to financing for potential users and entrepreneurs.
- Gender disparity in the sector, requiring efforts to promote women's participation.

### *Financing of the Sector:*

Current funding sources include:

- Donor funding (e.g., ABPP)
- Results-Based Financing schemes (e.g., ABC)
- Technical assistance (e.g., ABPP, ABC)
- Government projects.

### *Lessons Learned:*

- Importance of demand creation and capacity building for sustainable market development.
- Need for innovative financing models to address affordability challenges.
- Importance of addressing gender equity and social inclusion in the sector.

## **1.6 Prospects for the Future of Biogas in Kenya**

### **Growth Outlook:**

The biogas market in Kenya is expected to grow significantly in the coming years, driven by:

- Increasing awareness and demand for clean energy solutions.
- Continued government support through policies and incentives.
- Technological advancements leading to more efficient and affordable digesters.
- Growing focus on climate change mitigation and waste management.

### **Key Challenges Ahead:**

- **Affordability:** Addressing the high upfront costs of digesters remains crucial for wider adoption.
- **Access to finance:** Developing innovative financing models to facilitate easier access to loans and grants for potential users is essential.
- **Capacity building:** Strengthening technical and business skills within the sector, particularly for entrepreneurs and technicians, is critical.



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- **Quality control and standardization:** Ensuring consistent quality and adherence to standards throughout the biogas value chain is crucial for long-term sustainability.

### **The Need for a Sector Association:**

Establishing a strong sector association can significantly benefit the biogas industry in Kenya by:

- Advocating for favorable policies and regulations.
- Promoting research and development initiatives.
- Facilitating access to finance and markets for stakeholders.
- Enhancing capacity building and skills development.
- Promoting quality standards and best practices.
- Fostering collaboration and information sharing among stakeholders.

By addressing the existing challenges and leveraging the potential opportunities, the biogas sector in Kenya has the potential to play a significant role in achieving the country's energy, environmental, and economic development goals. BIO-NET, through its strategic initiatives and collaborations, can be a key driver in realizing this vision.



## CHAPTER 2

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### 2 ORGANIZATIONAL OVERVIEW OF BIO-NET

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#### 2.1 Structure and governance

The Biogas Stakeholders Network (BIO-NET) plays a pivotal role in fostering collaboration and driving innovation within the Kenyan biogas sector. Established as an umbrella organization, BIO-NET brings together a diverse range of stakeholders, including other biogas associations, government ministries, development partners, and the private sector.

#### 2.2 Current Landscape

BIO-NET serves as the principal coordinating body for five distinct biogas associations, including the Association of Biogas Contractors of Kenya (ABC-K), Association of Biogas Sector of Kenya (ABS-K), Biogas Experts Association (BEA), National Biogas Users Association (NABUA), and itself, the Biogas Stakeholders Network (BIO-NET). Each association focuses on specific areas within the biogas ecosystem, and collaboration through BIO-NET facilitates knowledge sharing, policy advocacy, and collective action. Regional blocks have been established for administrative purposes, ensuring effective representation across the country.

#### 2.3 Governance Structure

The current governance structure of BIO-NET comprises four key components:

##### **Level 1: Annual General Meeting (AGM):**

- (i) Serves as the highest decision-making body where members gather annually to discuss and decide on significant organizational matters.
- (ii) Responsibilities include the election of board members, approval of financial reports, and setting strategic objectives.
- (iii) Decisions made at the AGM are binding and guide the direction of the organization.

##### **Level 2: National Board (TNB):**

- (i) Provides strategic direction and oversight of policy implementation.
- (ii) Comprises members recommended by constituent associations.
- (iii) Convenes quarterly meetings to review progress and address emerging issues.

##### **Level 3: National Executive Committee (NEC):**

- (i) Provides operational oversight and executes resolutions made by the TNB.



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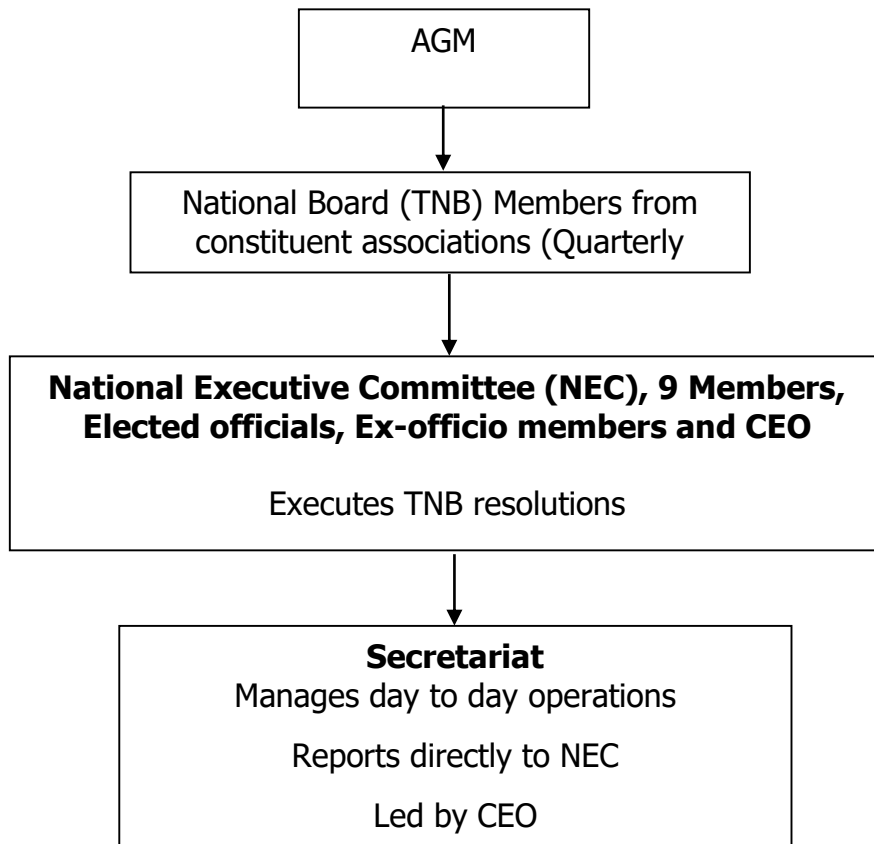
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- (ii) Composed of elected officials, ex-officio members, **and the CEO as the co-opted member.**
- (iii) Ensures the effective implementation of decisions made at the AGM and TNB meetings.

### **Level 4: Secretariat:**

- (i) Manages day-to-day operations under the leadership of the CEO.
- (ii) Responsible for implementing policies and decisions set forth by the TNB and NEC.
- (iii) Acts as the administrative arm of the organization, facilitating communication and coordination among stakeholders.

*The diagram below represents the current structure. There is debate within the National Executive Committee about the effectiveness of this structure in serving future aspirations of the stakeholders. During the process of development of this strategic plan a need was observed for the NEC to pursue this matter as part of the priority actions under the Resilience Pillar.*



**Figure 1: Biogas Stakeholders Network (BIO-NET) Governance Flow Diagram**





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### 2.4 Description of Products or Services

#### **Addressing Key Needs with Biogas Solutions:**

The Kenyan biogas sector plays a crucial role in providing alternative, cleaner energy sources, efficient waste management solutions, organic fertilizer production, and promoting productive energy use and lighting. Biodigesters, the core technology used, require specific needs: feedstock/raw materials, installation expertise, and operation & maintenance know-how. Our proven and tested technology comes in various sizes, from domestic to commercial/industrial scale.

#### **Shifting Business Models:**

Currently, the dominant model involves contractors selling the technology upfront with additional charges for maintenance. We propose an innovative shift: selling the generated products (biogas, digestate). This model transfers the financial responsibility to the technology provider, who then meters and bills for the product units sold.

#### **Catering to Diverse Markets:**

Both established and new models attract a wide range of market players offering various goods and services, including:

- Raw material supply
- Construction skills
- Plumbing
- Equipment
- Training
- Marketing
- Maintenance

#### **Current Products and Services**

BIO-NET provides a diverse range of valuable services to its members, empowering them to succeed in the Kenyan biogas sector.

#### *Knowledge and Resources:*

- (i) Access to an information portal with partners: Stay ahead of the curve with the latest technology, designs, quality control resources, and market insights within our comprehensive portal.



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- (ii) **Biogas technology handbooks and standards & curriculum booklets:** Access valuable reference materials to deepen your understanding and expertise.

### *Business Development and Support:*

- (i) **Training, workshops, and conferences:** Expand your skillset and knowledge through high-quality training programs, workshops, and industry conferences organized by BIO-NET.
- (ii) **Consultancy and contract opportunities:** Benefit from expert guidance and advice from experienced professionals, and gain access to exclusive contract opportunities.
- (iii) **Limited selected secretariat support:** Receive administrative assistance from the BIO-NET secretariat to streamline your operations.
- (iv) **Legal & financial services (discounted):** Access legal and financial expertise at reduced costs through established partnerships with service providers.
- (v) **Capacity building for startups and business development training:** Fuel your entrepreneurial journey with dedicated support and training designed for new entrants in the biogas market.

### *Networking and Advocacy:*

- (i) **Participation in working groups and advocacy committees:** Play a role in shaping the future of the industry by actively participating in working groups and contributing to policy discussions.
- (ii) **Opportunities, news, events, and job opportunities:** Stay connected with the wider biogas community by receiving regular updates, event invitations, and job postings.
- (iii) **Lobbying and advocacy on biogas-related issues:** Raise your voice and advocate for your interests alongside BIO-NET in promoting the development and adoption of biogas solutions.

### *Future Products and Services*

BIO-NET continuously strives to enhance its offerings and introduce new services to provide even greater value to its members. These will include and not limited to:

- (i) **Regional & international business-to-business matchmaking:** Expand your network and explore new business opportunities through facilitated connections with potential partners across regions and internationally.
- (ii) **Testing & certification with relevant authorities:** Ensure compliance and quality of your biogas systems with access to streamlined testing and certification procedures through BIO-NET partnerships.



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- (iii) **Product patenting & licensing support:** Protect your intellectual property and explore commercialization opportunities with expert guidance and support.
- (iv) **Access to various technology designs:** Choose the right biogas solution for your specific needs by gaining access to a wider range of pre-approved and tested technology designs.
- (v) **Farmers training on bioslurry utilization and market strategies:** Empower farmers to optimize the use of digestate, a valuable fertilizer byproduct, and connect them with potential markets.
- (vi) **Market trends reports and analysis:** Make informed business decisions based on data-driven insights and predictions.
- (vii) **Website visibility:** Showcase your business on our website, reaching a wider audience within the biogas community.
- (viii) **Marketing and Visibility:** Free quarterly newsletter subscription: Stay up-to-date on industry news, events, and opportunities through our informative newsletter.
  - Discounted newsletter advertising: Promote your offerings effectively to potential customers at a reduced cost.
  - Branding materials (optional): Enhance your brand presence with customized materials developed by BIO-NET.

### 2.5 Interested parties, partnerships and liaisons

BIO-NET collaborates with a diverse range of partners to further its mission of promoting biogas technology in Kenya. These partners include government ministries and agencies, development partners, business associations, civil society organizations, and county governments. Below are some of the partners BIO-NET is working with.

See full list in the Annexes

	Partner	Role	Nature of partnership
<b>Government ministries and agencies</b>			
1	Ministry of Energy & Petroleum (MoEP)	Formulation of policies that support biodigester adoption. Implementation of biogas programmes in collaboration with development agencies.	Collaboration on bioenergy strategy, implementation of programs, and innovation platforms. 2024-2028
2	Ministry of Agriculture, Livestock, Fisheries, And Cooperatives	Promotes the use of bio- slurry. Drafts policies and regulations for regulating fertilizers.	Promotion of bio-slurry use, fertilizer regulations, and smart agriculture initiatives.



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	<b>Partner</b>	<b>Role</b>	<b>Nature of partnership</b>
3	National Industrial Training Authority (NITA)	Regulating registered trainers. Accrediting institutions. Offering skills training. Harmonizing curricula and certificates	Development of biogas training curriculum, accreditation of trainers, and harmonization of skills standards.
4	Energy and Petroleum Regulatory Authority (EPRA)	Regulates the renewable energy sector in Kenya. Proposes feed Tariffs for bioenergy plans, including biogas plans for grid-connected electricity	Involvement in biogas regulations development committee and feed-in tariff discussions.
5	Kenya Bureau of Standards (KEBS)	Developing and implementing standards for biodigesters.	Development and implementation of biogas standards for both domestic and commercial applications.

**Table 1: Potential Partners and Collaborators**



## CHAPTER 3

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### 3 VISIONING AND STRATEGIC POSITIONING

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#### 3.1 Vision

A sustainable economy powered by biogas technology.

**Context:**

Global Challenges: This vision acknowledges the pressing need for sustainable solutions in the face of global challenges like climate change, resource depletion, and economic inequality.

Biogas technology is presented as a central player in achieving a sustainable future. Its potential benefits span across economic, environmental, and social spheres.

**Interpretation:**

Beyond Environmental Focus: While environmental sustainability is crucial, the vision goes beyond just reducing emissions. It envisions a future where economic prosperity is achieved in harmony with environmental protection. Biogas technology is seen as a tool to drive economic growth, create jobs, and foster new markets, all while contributing to a healthy planet.

#### 3.2 Mission

Transform livelihoods and protect the environment through widespread adoption and use of biogas technology and related services.

**Context:**

Focus on Impact: The mission emphasizes the tangible outcomes BIO-NET strives to achieve. It highlights the dual focus on improving livelihoods and protecting the environment.

Action-Oriented Approach: The mission outlines specific actions BIO-NET will take promoting widespread adoption of biogas technology and offering related services. This suggests proactive efforts to raise awareness, facilitate access, and provide support for successful implementation.

**Interpretation:**

Transformative Change: The mission emphasizes the potential of biogas to create positive change for individuals and communities.

Widespread adoption can lead to:



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BIO-NET's vision and mission paint a compelling picture of a future where biogas technology plays a transformative role in driving a sustainable economy. They emphasize the interconnectedness of environmental, social, and economic well-being, positioning biogas as a key solution for achieving a brighter future for both people and the planet.

### 3.3 Objectives

- (i) Build a strong network of active stakeholders collaborating on biogas promotion and advocacy.
- (ii) Support members to improve living standards of communities through biogas technology adoption and entrepreneurship.
- (iii) Contribute to national climate change mitigation by reducing greenhouse gas emissions.
- (iv) Support national development through employment creation, energy access and food security.

### 3.4 Core Values

- (i) **Integrity:** Upholding transparency and ethical conduct in all activities.
- (ii) **Transparency:** Open communication and accountability to stakeholders.
- (iii) **Inclusivity:** Empowering diverse voices and fostering equitable participation.
- (iv) **Reliability:** Delivering on commitments and ensuring consistent service quality.

### 3.5 Strategic Pillars

- (i) Resilience & Collaboration.
- (ii) Sustainable Growth.
- (iii) Biogas Value Cycle.
- (iv) Member Empowerment.
- (v) Biogas Advocacy.
- (vi) Biogas Knowledge

#### 3.5.1 Resilience & Collaboration

*Focus: Building a strong foundation for BIO-NET and the sector through:*

- (i) Internal Capacity Building: Strengthening organizational structure, governance, and conflict resolution mechanisms.



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- (ii) Collaboration and arbitration: Promoting harmonious relationships within the sector and addressing conflict potential.
- (iii) Gender and social inclusion and Empowerment: Championing women's participation and leadership in biogas.

### 3.5.2 Sustainable Growth and Expansion

*Focus: Driving financial viability and market reach for BIO-NET and its members through:*

- (i) Financial Diversification: Exploring innovative revenue streams and access to finance strategies.
- (ii) Market Expansion: Developing market research, marketing strategies, and partnerships to reach new customers.
- (iii) Technology and Standards Leadership: Investing in R&D, knowledge sharing, and setting industry standards.

### 3.5.3 Biogas Value Cycle

*Focus: Maximizing resource efficiency and environmental benefits of biogas through:*

- (i) Sustainable Bioslurry Management: Implementing effective management systems for resource recovery and value creation.
- (ii) Circular Economy Integration: Promoting closed-loop practices and minimizing waste across the biogas cycle.
- (iii) Policy Advocacy and Regulatory Framework: Influencing policies and regulations that support sustainable biogas practices.

### 3.5.4 Member Empowerment

*Focus: Enhancing the capabilities and engagement of BIO-NET members through:*

- (i) Skill Development and Training: Providing targeted training in relevant areas like technology, business management, and financial literacy.
- (ii) Business Support Services: Offering assistance with market access, technology adoption, and financial advice.
- (iii) Network Building and Knowledge Sharing: Facilitating collaboration, knowledge exchange, and peer-to-peer learning among members.

### 3.5.5 Biogas Advocacy

*Focus: Championing BIO-NET's interests and shaping the future of the industry through:*



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- (i) **Advocacy and Policy Representation:** Influencing policies and regulations at local, national, and international levels.
- (ii) **Public Awareness and Education:** Raising public understanding and appreciation of biogas benefits.
- (iii) **Partnerships and Collaboration:** Building strategic partnerships with government, NGOs, and other stakeholders.

### **3.5.6 Biogas Knowledge**

*Focus: Build a skilled biogas workforce & community through:*

- (i) **Capacity Building:** Targeted training for farmers, technicians, etc. (partnership focus)
- (ii) **Knowledge Platform:** Online hub for resources, best practices, & expert insights
- (iii) **Awareness Campaigns:** Educate public & stakeholders on biogas benefits (multi-channel)
- (iv) **Knowledge Exchange:** Facilitate learning & collaboration among members & partners.





## CHAPTER 4

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### 4 VALUE PROPOSITION AND SUPPORTING ANALYSIS

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#### 4.1 Harnessing Biogas Technology as a Sustainable Solution

**Challenge:**

Kenya's booming population and reliance on fossil fuels create a pressing need for clean, affordable energy solutions. The dairy industry, a vital economic pillar, struggles with rising energy costs and environmental impact.

**Opportunity:**

Biogas technology offers a powerful answer. By converting organic waste into clean, renewable energy, biogas empowers communities, protects the environment, and fuels sustainable growth.

**Impact:**

- (i) Economic: Lower energy costs for farmers, increased income opportunities through bio-fertilizer sales, and job creation in the biogas sector.
- (ii) Environmental: Reduced greenhouse gas emissions, improved air quality, and responsible waste management.
- (iii) Social: Improved health outcomes due to cleaner cooking practices, empowered women through income generation, and strengthened rural communities.

**Potential:**

Studies estimate Kenya can install millions of biogas digesters, particularly in small-scale dairy farms, unlocking significant economic and environmental benefits.

**Join the Biogas Revolution:**

This is a call to action for investors, entrepreneurs, farmers, and policymakers to collaborate and unlock the transformative potential of biogas for a more sustainable and prosperous Kenya.

#### 4.2 Comprehensive Strategic Analysis: Internal, External, and Portfolio Analysis

##### 4.2.1 SWOT Analysis



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Category	Description	Impact
<ul style="list-style-type: none"> <li>Strengths</li> </ul>	<ul style="list-style-type: none"> <li>National recognition and leadership in convening stakeholders.</li> <li>Diverse membership and committed leadership.</li> <li>Official recognition by the government.</li> </ul>	<ul style="list-style-type: none"> <li>Strengthens policy advocacy and influence.</li> <li>Enhances effectiveness and reach.</li> <li>Solidifies position within the biogas sector.</li> </ul>
<ul style="list-style-type: none"> <li>Weaknesses</li> </ul>	<ul style="list-style-type: none"> <li>Difficulty securing resources and unclear member benefits.</li> <li>Limited brand awareness and inadequate communication channels.</li> <li>Absence of clear regulations and narrow membership composition.</li> </ul>	<ul style="list-style-type: none"> <li>Hinders financial sustainability and growth.</li> <li>Restricts reach and impact.</li> <li>Creates challenges for comprehensive representation.</li> </ul>
<ul style="list-style-type: none"> <li>Opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Exploring new funding avenues like results-based financing and collaboration.</li> <li>Increasing stakeholder engagement through committees and affirmative funds.</li> <li>Capitalizing on climate change initiatives and knowledge sharing.</li> </ul>	<ul style="list-style-type: none"> <li>Boosts financial resources and stability.</li> <li>Expands collaboration and support network.</li> <li>Enhances adaptation and innovation.</li> </ul>
<ul style="list-style-type: none"> <li>Threats</li> </ul>	<ul style="list-style-type: none"> <li>Frequent policy changes and increasing input costs create uncertainties.</li> <li>Overcoming historical challenges and navigating competition from other renewables.</li> </ul>	<ul style="list-style-type: none"> <li>Threatens strategic planning and project viability.</li> <li>Requires strategic focus and adaptation.</li> </ul>

Table 2: SWOT Analysis

### 4.2.2 PESTEL Analysis

Category	Description	Impact
<ul style="list-style-type: none"> <li>Political</li> </ul>	<ul style="list-style-type: none"> <li>Unclear policies, regulatory gaps, and inconsistent implementation create an</li> </ul>	<ul style="list-style-type: none"> <li>Hinders strategic planning and investment.</li> <li>Increases project costs and complexity.</li> </ul>



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Category	Description	Impact
	<p>uncertain operating environment.</p> <ul style="list-style-type: none"> <li>Taxation issues can impact technology and material costs.</li> </ul>	
<ul style="list-style-type: none"> <li>Economic</li> </ul>	<ul style="list-style-type: none"> <li>Financing challenges, reduced purchasing power, and rising raw material costs pose economic hurdles.</li> </ul>	<ul style="list-style-type: none"> <li>Limits financial resources and project viability.</li> <li>Reduces market demand and affordability.</li> </ul>
<ul style="list-style-type: none"> <li>Social</li> </ul>	<ul style="list-style-type: none"> <li>Behavioural change regarding feedstock, labour dynamics, and male dominance in the sector present social challenges.</li> <li>Cultural resistance to new technologies may hinder adoption.</li> </ul>	<ul style="list-style-type: none"> <li>Limits feedstock availability and project implementation.</li> <li>Restricts talent pool and inclusivity.</li> </ul>
<ul style="list-style-type: none"> <li>Technological</li> </ul>	<ul style="list-style-type: none"> <li>Limited R&amp;D investment, unregulated products, and lack of innovation hinder technological advancements.</li> </ul>	<ul style="list-style-type: none"> <li>Slows down development and improvement of biogas technology.</li> <li>Compromises quality and efficiency of solutions.</li> </ul>
<ul style="list-style-type: none"> <li>Environmental</li> </ul>	<ul style="list-style-type: none"> <li>Pressure to mitigate climate change necessitates adaptation.</li> <li>Inadequate waste management infrastructure creates challenges.</li> <li>Environmental regulations and deforestation concerns impact project feasibility.</li> </ul>	<ul style="list-style-type: none"> <li>Creates opportunities for biogas as a sustainable solution.</li> <li>Requires addressing waste management issues for effective implementation.</li> <li>May limit suitable locations for biogas projects.</li> </ul>
<ul style="list-style-type: none"> <li>Legal</li> </ul>	<ul style="list-style-type: none"> <li>The absence of comprehensive regulations, expensive patenting processes, and legal backlogs pose legal challenges.</li> </ul>	<ul style="list-style-type: none"> <li>Creates uncertainty and risks for BIO-NET and the sector.</li> <li>Hinders innovation and market growth.</li> </ul>

**Table 3: PESTEL Analysis**



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### 4.2.3 Portfolio Analysis : Current Services and Contributions

Service	Financial Contribution	Strategic Alignment	Description
<ul style="list-style-type: none"> <li>Lobbying &amp; Advocacy</li> </ul>	<ul style="list-style-type: none"> <li>Neutral</li> </ul>	<ul style="list-style-type: none"> <li>High</li> </ul>	<ul style="list-style-type: none"> <li>Influences policy decisions favourable to the sector, promoting long-term sustainability. (e.g., secured X policy changes in Y timeframe)</li> </ul>
<ul style="list-style-type: none"> <li>Conflict Resolution</li> </ul>	<ul style="list-style-type: none"> <li>Potential</li> </ul>	<ul style="list-style-type: none"> <li>Moderate</li> </ul>	<ul style="list-style-type: none"> <li>Fosters collaboration, potentially generating revenue through specific mediation services. (e.g., facilitated Z successful mediations last year)</li> </ul>
<ul style="list-style-type: none"> <li>Representation</li> </ul>	<ul style="list-style-type: none"> <li>Potential</li> </ul>	<ul style="list-style-type: none"> <li>High</li> </ul>	<ul style="list-style-type: none"> <li>Advocates for member interests, attracting new members and generating revenue through fees. (e.g., membership grew by X% in the past year)</li> </ul>
<ul style="list-style-type: none"> <li>Capacity Building</li> </ul>	<ul style="list-style-type: none"> <li>Revenue</li> </ul>	<ul style="list-style-type: none"> <li>High</li> </ul>	<ul style="list-style-type: none"> <li>Enhances stakeholder skills, directly aligning with BIO-NET's mission and fostering market development. (e.g., trained by individuals through Z workshops)</li> </ul>
<ul style="list-style-type: none"> <li>Advisory &amp; Project Development</li> </ul>	<ul style="list-style-type: none"> <li>Revenue</li> </ul>	<ul style="list-style-type: none"> <li>High</li> </ul>	<ul style="list-style-type: none"> <li>Supports project development, strengthening the sector and contributing to BIO-NET's financial health through fees. (e.g., supported the development of X biogas projects)</li> </ul>
<ul style="list-style-type: none"> <li>Networking &amp; Linkages</li> </ul>	<ul style="list-style-type: none"> <li>Indirect</li> </ul>	<ul style="list-style-type: none"> <li>Moderate</li> </ul>	<ul style="list-style-type: none"> <li>Facilitates collaboration and knowledge sharing, indirectly contributing to market growth. (e.g., established Y partnerships and organized Z networking events)</li> </ul>



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Service	Financial Contribution	Strategic Alignment	Description
<ul style="list-style-type: none"> <li>Resource Mobilization</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>High</li> </ul>	<ul style="list-style-type: none"> <li>Crucial for financial sustainability, securing funding through various strategies. (e.g., raised Ksh.X million through Y funding sources)</li> </ul>

Table 4: Portfolio Analysis

### 4.3 Business Model Canvas

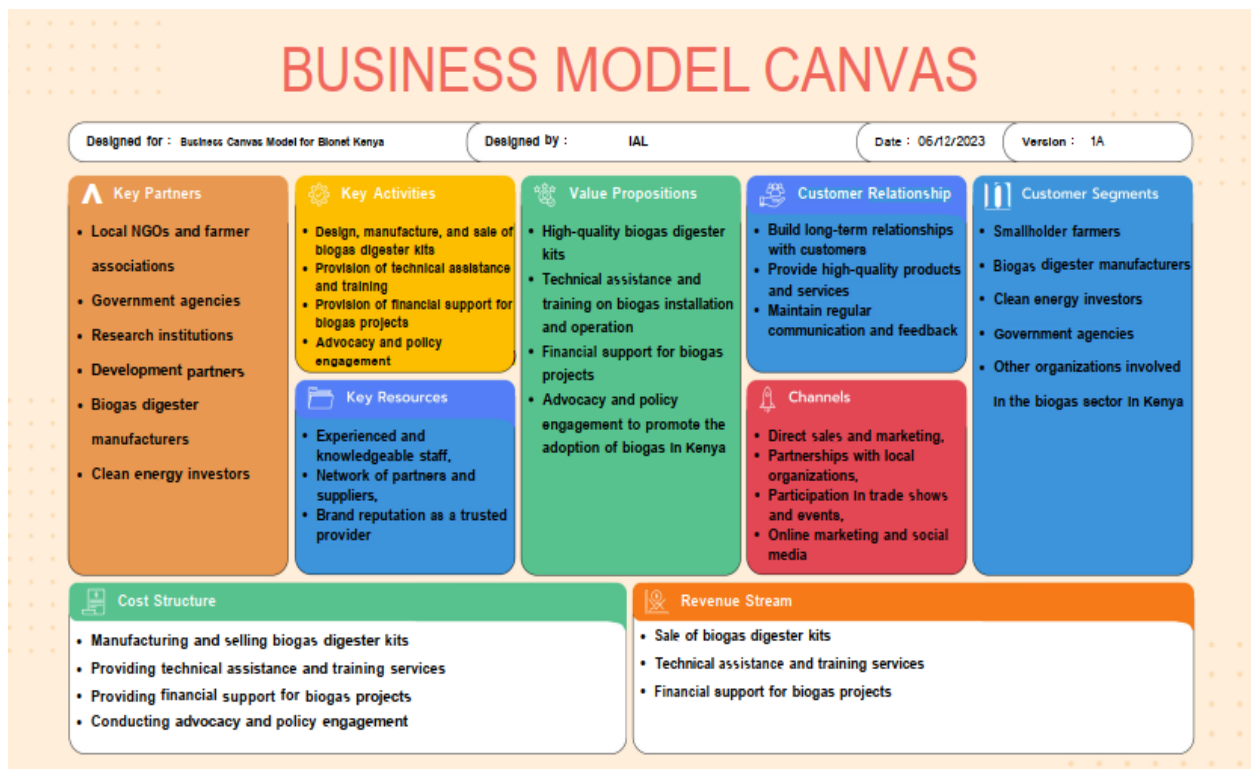


Figure 2: Business Canvas Presentation



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### 4.4 Balanced Scorecard

Perspective	Description	Metrics	Target
<ul style="list-style-type: none"> <li>Financial</li> </ul>	<ul style="list-style-type: none"> <li>Secure resources and optimize financial performance.</li> </ul>	<ul style="list-style-type: none"> <li>Revenue from membership fees</li> <li>Grant funding secured</li> <li>Operational cost reduction</li> <li>Return on investment (ROI)</li> </ul>	<ul style="list-style-type: none"> <li>Increase membership revenue by 20% in the next year.</li> <li>Secure \$500,000 in grant funding within the next two years.</li> <li>Reduce operational costs by 10% in the next year.</li> <li>Achieve an ROI of 15% on all investments within three years.</li> </ul>
<ul style="list-style-type: none"> <li>Customer</li> </ul>	<ul style="list-style-type: none"> <li>Satisfy customer needs and build strong relationships.</li> </ul>	<ul style="list-style-type: none"> <li>Customer satisfaction rate</li> <li>Number of active clients served</li> <li>Number of successful interventions for technical problems</li> </ul>	<ul style="list-style-type: none"> <li>Increase customer satisfaction rate to 90% within two years.</li> <li>Serve 100 new clients in the next year.</li> <li>Resolve 80% of technical problems presented by clients within a month.</li> </ul>
<ul style="list-style-type: none"> <li>Internal Process</li> </ul>	<ul style="list-style-type: none"> <li>Enhance efficiency and effectiveness of internal operations.</li> </ul>	<ul style="list-style-type: none"> <li>Time taken to process membership applications</li> <li>Average response time to customer inquiries</li> <li>Staff training completion rate</li> </ul>	<ul style="list-style-type: none"> <li>Reduce application processing time by 50% within six months.</li> <li>Respond to customer inquiries within 24 hours.</li> <li>Ensure 100% of staff complete all mandatory training within a year.</li> </ul>
<ul style="list-style-type: none"> <li>Learning &amp; Growth</li> </ul>	<ul style="list-style-type: none"> <li>Develop staff skills and capabilities to support strategic goals.</li> </ul>	<ul style="list-style-type: none"> <li>Number of training programs conducted</li> <li>Employee skill development assessment scores</li> <li>Staff retention rate</li> </ul>	<ul style="list-style-type: none"> <li>Conduct at least two training programs per quarter.</li> <li>Improve average skill development assessment scores by 10% in the next year.</li> <li>Maintain a staff retention rate of 95%.</li> </ul>

Table 5: Balanced Score Card



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### 4.5 McKinsey 7S Framework

<p>Shared values</p> <ul style="list-style-type: none"> <li>(i) Inclusivity/ Collegiality</li> <li>(ii) Membership and professionalism</li> <li>(iii) Innovation</li> </ul>	<p>Structure</p> <p>Two things:</p> <ul style="list-style-type: none"> <li>(i) The structure to be through associations or;</li> <li>(ii) BIO-NET become an independent national association that receives all associations and individual contractors</li> </ul>
<p>Goals</p> <ul style="list-style-type: none"> <li>(i) Established governance structure – develop governance policies e.g. financial, gender etc.</li> <li>(ii) Enhancing BIO-NET value proposition - Broaden services and products.</li> <li>(iii) Increased revenue – marketing and promotion, membership registration, grant fundraising, consulting (trainings etc.)</li> <li>(iv) Growth of membership no. and participation by 50% - do membership drive and registration guidelines</li> </ul>	<p>Systems/ procedures</p> <ul style="list-style-type: none"> <li>(i) Define procedures and processes for elections.</li> <li>(ii) Capacity development for BIO-NET leadership</li> <li>(iii) Enhanced communication infrastructure</li> <li>(iv) Define category of membership, associated fees and fines etc.</li> <li>(v) Grant applications/ proposals for projects</li> <li>(vi) Ensure substantive secretariat that is well resourced</li> </ul>
<p>Staff</p> <ul style="list-style-type: none"> <li>(i) Clear management structure developed</li> </ul>	<p>Style</p> <ul style="list-style-type: none"> <li>(i) Democratic</li> <li>(ii) Inclusive</li> <li>(iii) Collaborative</li> </ul>
<p>Skills</p> <ul style="list-style-type: none"> <li>(i) Skill &amp; capacity assessment, define functions</li> </ul>	

**Table 6: McKinsey 7S Framework**



## CHAPTER 5

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### 5 STRATEGIC INTERVENTIONS AND SOLUTIONS

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#### 5.1 Strategic Pillars

- (i) Resilience & Collaboration.
- (ii) Sustainable Growth and Expansion.
- (iii) Biogas Value Cycle.
- (iv) Member Empowerment.
- (v) Biogas Advocacy.
- (vi) Biogas Knowledge

##### 5.1.1 Resilience & Collaboration

*Focus: Building a strong foundation for BIO-NET and the sector through:*

- (i) Internal Capacity Building: Strengthening organizational structure, governance, and conflict resolution mechanisms.
- (ii) Collaboration and Peacebuilding: Promoting harmonious relationships within the sector and addressing conflict potential.
- (iii) Gender Inclusion and Empowerment: Championing women's participation and leadership in biogas.

##### 5.1.2 Sustainable Growth and Expansion

*Focus: Driving financial viability and market reach for BIO-NET and its members through:*

- (i) Financial Diversification: Exploring innovative revenue streams and access to finance strategies.
- (ii) Market Expansion: Developing market research, marketing strategies, and partnerships to reach new customers.
- (iii) Technology and Standards Leadership: Investing in R&D, knowledge sharing, and setting industry standards.





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### 5.1.3 Biogas Value Cycle

*Focus: Maximizing resource efficiency and environmental benefits of biogas through:*

- (i) Sustainable Bioslurry Management: Implementing effective management systems for resource recovery and value creation.
- (ii) Circular Economy Integration: Promoting closed-loop practices and minimizing waste across the biogas cycle.
- (iii) Policy Advocacy and Regulatory Framework: Influencing policies and regulations that support sustainable biogas practices.

### 5.1.4 Member Empowerment

*Focus: Enhancing the capabilities and engagement of BIO-NET members through:*

- (i) Skill Development and Training: Providing targeted training in relevant areas like technology, business management, and financial literacy.
- (ii) Business Support Services: Helping with market access, technology adoption, and financial advice.
- (iii) Network Building and Knowledge Sharing: Facilitating collaboration, knowledge exchange, and peer-to-peer learning among members.

### 5.1.5 Biogas Advocacy

*Focus: Championing BIO-NET's interests and shaping the future of the industry through:*

- (i) Advocacy and Policy Representation: Influencing policies and regulations at local, national, and international levels.
- (ii) Public Awareness and Education: Raising public understanding and appreciation of biogas benefits.
- (iii) Partnerships and Collaboration: Building strategic partnerships with government, NGOs, and other stakeholders.

### 5.1.6 Biogas Knowledge

*Focus: Build a skilled biogas workforce & community through:*

- (i) Capacity Building: Targeted training for farmers, technicians, etc. (partnership focus)
- (ii) Knowledge Platform: Online hub for resources, best practices, & expert insights
- (iii) Awareness Campaigns: Educate public & stakeholders on biogas benefits (multi-channel)



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- (iv) Knowledge Exchange: Facilitate learning & collaboration among members & partners.

### 5.2 Important considerations

#### Action Plan:

*Develop a detailed action plan for each priority action, including:*

- Specific activities: Clearly define the tasks involved in implementing each action.
- Timeline: Set realistic deadlines for completing each activity.
- Responsible parties: Assign ownership and accountability for each activity.
- Resources: Identify the resources required for each activity (budget, personnel, equipment).

#### Training:

- Conduct a training needs assessment to identify the specific knowledge and skills gaps among stakeholders.
- Develop or source training programs that address the identified needs, targeting different groups (e.g., members, farmers, technicians).
- Utilize various training delivery methods (e.g., workshops, online courses, on-site training) to cater to diverse learning styles and preferences.

#### Monitoring, Evaluation & Learning (MEL):

- Establish a monitoring plan to track progress on implementing actions and achieving metrics.
- Define evaluation methods to assess the effectiveness of the implementation framework and identify areas for improvement.
- Develop mechanisms for gathering feedback from stakeholders and incorporating learnings into future strategies.

#### Stakeholder involvement

- Engage relevant stakeholders throughout the development and implementation process to ensure ownership, buy-in, and effective collaboration.
- Communicate effectively: Regularly communicate the framework and its progress to stakeholders to maintain transparency and accountability.



## CHAPTER 6

### 6 RESULTS AND RESOURCES FRAMEWORK

#### 6.1 Historical Background

Since its formation in 2017, BIO-NET has largely depended on intermittent programmes and development partners in its operations and activities. In most cases requiring day to day support, most of the work was offered through voluntarism by its officials notably the acting CEO. From 2017 running to 2019 prior to Covid 19 outbreak, the secretariat received support from the Kenya Biogas Programme, a project under the Africa Biogas Partnership Programme (ABPP) through the support of Hivos. It should be noted that this support enabled BIO-NET during its formative stages to formalize its registration and consolidate its membership base.

However, it has become clear that voluntarism and programme-based support are not sustainable in the long run. BIO-NET needs a resource mobilization and revenue generation strategy which is predictable and dependable, including revenues generated from membership subscriptions and other income generating activities.

The Strategic Plan has identified six strategic pillars around which resource allocation can be planned in order to achieve BIO-NET's vision and mission leading to 2028; namely (1) Resilience & Collaboration (2) Sustainable Growth (3) Biogas Value Cycle (4) Member Empowerment (5) Biogas Advocacy and (6) Biogas Knowledge.

#### 6.2 Purpose and scope

BIO-NET 's fundraising goal is that by 2030, it's resource base will be secured from a growing and diversified funding for sustainability and to realize high impact of its strategic initiatives.

BIO-NET's fundraising objectives are:

- (i) To increase core funding support by 20% per year.
- (ii) To diversify and grow funding streams to support 100% of programme budget/costs by 2030.
- (iii) Develop adequate internal fundraising capacity by 2030.

#### 6.3 Potential Sources and Characteristics

Sources	Characteristics
Statutory agencies, national and county governments	<ul style="list-style-type: none"> <li>• Significant funding potential exists but is untapped.</li> <li>• More focused on specific thematic areas (which must be aligned to Forum objectives)</li> <li>• They have stringent accountability demands,</li> </ul>



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Sources	Characteristics
Foundations	<ul style="list-style-type: none"> <li>• Rigorous evaluation regimes</li> <li>• Focused on medium to long term results and impact.</li> <li>• Significant funding potential exists but is untapped.</li> <li>• Focused on specific thematic areas (which must be aligned to Forum objectives)</li> <li>• Fairly flexible on reporting and evaluation.</li> <li>• Focused on medium to long term results and impact.</li> </ul>
Corporates/Companies (Usually part of Corporate Social Responsibility)	<ul style="list-style-type: none"> <li>• Funding level is medium.</li> <li>• Interested in visibility.</li> <li>• Less rigorous reporting and evaluation</li> <li>• Fund short term projects (focused on short term results).</li> </ul>
Member Contributions  Grants/Donations from Development Partners (PSPs)	<ul style="list-style-type: none"> <li>• Minimal funding level</li> <li>• Focused on specific thematic areas.</li> <li>• Keen on alignment to Forum objectives</li> <li>• Focused on short term to medium term results and impacts.</li> <li>• Require medium reporting and evaluation but strong accountability for money spent.</li> <li>• Significant funding potential exists but is untapped.</li> <li>• More focused on specific thematic areas</li> <li>• They have stringent accountability demands.</li> <li>• Rigorous evaluation regimes</li> <li>• Focused on medium to long term results and impact.</li> </ul>
International NGOs  Event organising e.g. breakfast meetings, luncheons, National Energy Stakeholder meeting etc.	<ul style="list-style-type: none"> <li>• Significant funding potential exists but is untapped.</li> <li>• More focused on specific thematic areas</li> <li>• They have stringent accountability demands.</li> <li>• Rigorous evaluation regimes</li> <li>• Focused on medium to long term results and impact.</li> <li>• Potential to be a medium funding source.</li> <li>• Requires accountability to members.</li> <li>• Must be aligned to Forum objectives.</li> <li>• Focused on income generation (short term results)</li> <li>• Require medium reporting and evaluation but strong accountability for money generated and spent in organizing the event – value for money - must be a profitable venture.</li> </ul>
Consultancy	<ul style="list-style-type: none"> <li>• Potential to be a significant funding source.</li> <li>• Requires medium reporting and accountability.</li> <li>• Focused on income generation (short term results)</li> </ul>



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Sources	Characteristics
Media	<ul style="list-style-type: none"> <li>• Focused on specific thematic areas but must be aligned to Forum objectives.</li> <li>• Funding level is big but usually in-kind contributions of advertising space/airtime, interview opportunities, articles, press release and event sponsoring etc.</li> <li>• Keen on visibility of their brand</li> <li>• Focused on short term results.</li> <li>• Flexible or no reporting and evaluation requirements.</li> </ul>

### 6.4 Interventions/solutions

This section covers interventions, and provides the outlines for scope and regional coverage, key processes and operations, governance, leadership and planning, monitoring and evaluation, and strategic partnerships.

Strategic Pillar/Strategic Interventions	Scope	Processes and Operations	Governance and Leadership	M&E	Strategic partnerships
Resilience & Collaboration.	National	Building relationships, fostering communication, establishing platforms, promoting conflict resolution	Develop guidelines, establish communication channels, foster inclusive decision-making, review strategies	Track initiatives, assess stakeholder engagement, monitor impact.	Government agencies, development partners, private sector, civil society.
Sustainable Growth.	National	Market research, strategy development, promotion, access to finance, business model support	Conduct assessments, set targets, allocate resources, monitor progress	Track penetration, assess initiatives, monitor impact.	Private sector, financial institutions, development partners, research institutions.
Biogas Value Cycle.	National	Research, best practices promotion, bioslurry utilization, market exploration, policy advocacy.	Needs assessments, target setting, technology transfer, collaboration	Track efficiency, assess adoption, monitor economic benefits	Research institutions, private sector, farmer organizations, government agencies.
Member Empowerment.		Training, technical assistance, knowledge	Needs assessments, training program development,	Track member participation, assess program	Development partners, research institutions, private sector, civil society.



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		sharing, networking, advocacy	communication channels, member participation.	effectiveness, monitor impact.	
Biogas Advocacy.	National	Advocate policies, raise awareness, build partnerships, represent interests.	Develop advocacy strategies, raise awareness, engage stakeholders, review impact.	Track advocacy efforts, assess awareness levels, evaluate impact	Government agencies, non-governmental organizations, industry associations, other stakeholders.
Biogas Knowledge	National	Provide training, develop resources, facilitate knowledge exchange, raise awareness	Assess needs, develop training programs, establish communication channels, foster collaboration	Track participation, assess program effectiveness, monitor knowledge dissemination	Development partners, research institutions, private sector, educational institutions.

Table 7: Strategic Partnerships

### 6.4.1 Priority Actions and Results Framework

Strategic Pillar	Priority Action	Measurable KPIs	Results & Time-bound Targets
<b>Resilience &amp; Collaboration</b>	Strengthen Internal Capacity Building (Governance, Conflict Resolution)	* Number of governance training sessions -- % Increase in conflict resolution training	* Conduct governance training for all board members (Q1)-- Increase conflict resolution training by 20% (within 6 months)
	Promote Collaboration & Partnerships	* Number of collaboration agreements-* % Increase in joint initiatives-* Number of stakeholder engagement events (quarterly)	* Sign agreements with 3 new stakeholders (within 6 months)-* Increase joint initiatives by 25% (within 1 year)-* Organize stakeholder engagement events quarterly
	Champion Gender & Social Inclusion	* % Increase in female leadership-* Number of gender-inclusive policies-* % Equal resource distribution	* Increase female leadership by 15% (within 1 year)-* Implement 2 gender-inclusive policies (by Q2)-* Ensure equal resource distribution (within 6 months)
<b>Sustainable Growth</b>	Explore Innovative Revenue Streams	* Number of new revenue streams implemented-* % Increase in net revenue	* Identify and implement 2 new revenue streams (next fiscal year)-* Increase net revenue by 20% (within 2 years)
	Develop Market Strategies	* Number of new customer segments reached-* % Increase in market share	* Reach 3 new customer segments (within 6 months)-* Increase market share by 15% (within 1 year)



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Strategic Pillar	Priority Action	Measurable KPIs	Results & Time-bound Targets
	Invest in R&D & Knowledge Sharing	* Number of new technology advancements-* Number of research papers published	* Implement 2 new technology advancements (next fiscal year)-* Publish 5 research papers (within 2 years)
<b>Optimizing the Biogas Value Chain</b>	Implement Effective Bioslurry Management	* % Reduction in bioslurry waste-* % Increase in resource recovery & utilization	* Reduce bioslurry waste by 30% (within 1 year)-* Increase resource recovery & utilization by 25% (within 2 years)
	Promote Circular Economy Practices	* Implementation of closed-loop practices-* % Reduction in waste generation	* Implement closed-loop practices (within 6 months)-* Achieve zero waste generation (within 3 years)
	Advocate for Sustainable Practices	* Number of new policies supporting sustainable biogas practices-* % Increase in compliant biogas systems	* Influence adoption of 2 new sustainable biogas policies (within 1 year)-* Increase compliant biogas systems by 20% (within 2 years)
<b>Member Empowerment</b>	Provide Targeted Training Programs	* Average member skill & knowledge improvement-* % Increase in member satisfaction	* Conduct bi-monthly training sessions-* Achieve 20% improvement in skills (within 6 months)-* Increase member satisfaction by 25% (within 1 year)
	Offer Business Support Services	* Number of members receiving consultancy services-* % Increase in members reporting improved decision-making	* Provide consultancy services to 10 members (Q1)-* Increase improved decision-making by 30% (within 6 months)
	Facilitate Network Building & Knowledge Sharing	* Number of networking events organized-* Number of knowledge-sharing sessions	* Organize quarterly networking events-* Increase knowledge-sharing sessions by 50% (within 2 years)
<b>Biogas Knowledge</b>	Develop Targeted Training Programs	* Number of training sessions conducted annually-* Percentage increase in participants' skills and knowledge	* Conduct at least 4 training sessions per year-* Achieve a 20% improvement within 6 months
	Establish an Online Knowledge Platform	* Number of resources available on the platform-* User engagement metrics (e.g., active users, session duration)	* Have a minimum of 100 resources within 6 months-* Maintain a user engagement rate above 70%
	Implement Awareness Campaigns	* Number of campaigns conducted annually	* Conduct a minimum of 6 campaigns per year

**Table 8: Priority Actions and Results Matrix**



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### 6.5 Resources (Budget) and Performance Targets

(Note: Excel Budget File Attached)

Outcome	Output	Indicator	Baseline	Target (Year 1)	Target (Year 2)	Target (Year 3)	Resources
Resilience & Collaboration	Number of workshops conducted on governance	Number of workshops held	0	2	2	2	Staff time (Trainer - 2 days/workshop), Budget for materials & travel (Venue, catering, facilitator travel).
	Improved governance practices	Governance assessment score (0-100 scale)	To be established based on current assessment	Increase score by 10%	Increase score by 15%	Increase score by 20%	Staff expertise for assessment development & implementation, Budget for assessment tool.
Sustainable Growth	Increased revenue streams identified	Number of new revenue streams identified	0	2	2	2	Staff time for market research & revenue model development.
Biogas Value Cycle	Improved management of bioslurry	Percentage of biogas facilities implementing improved practices	To be established based on current practices	Increase by 20%	Increase by 30%	Increase by 40%	Staff expertise for training & technical assistance, Budget for training materials & travel.
Member Empowerment	Increased knowledge of members on biogas	Average score on member knowledge assessment (0-100 scale)	To be established based on current member assessment	Increase score by 15%	Increase score by 20%	Increase score by 25%	Budget for developing assessment tool, Staff time for conducting assessments & training workshops.
Biogas Advocacy	Number of impactful policies implemented to support biogas	Number of new policies implemented	0	3	3	3	Staff time for advocacy & policy development, Budget for policy briefs & communication materials.
Biogas Knowledge	Increased access to high-quality biogas knowledge resources	Number of downloads/uses of BIONET's knowledge resources	To be established based on current usage data	Increase by 25%	Increase by 35%	Increase by 45%	Staff time for developing resources (articles, manuals, etc.), Budget for website maintenance & resource promotion.

**Table 9: Resources (Budget) and Performance Targets**





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### 6.6 Reports and Records

In order to track and monitor revenue stream targets, BIO-NET will need to undertake the following reporting frameworks:

- (i) Establish a clear accounting system which the management team can access easily.
- (ii) Prepare monthly, quarterly and annual reports on resource mobilization and income streams.
- (iii) Maintain a clear membership records showing clearly registration and subscription updates.
- (iv) Draw annual action/activity plans and budgets, including CAPEX.
- (v) Carry out annual audits as per BIO-NET constitutional requirements.

### 6.7 Fund-raising Methods and Funding Streams

Objectives	Funding Streams	Strategies	Activities	Resource Requirements
To increase core funding by 20% per year by 2030.	<ul style="list-style-type: none"> <li>• Donations</li> <li>• Training/work shop fees</li> <li>• Consultancy fees with statutory agencies and others, events, revenue from sale of branded materials.</li> </ul>	<ul style="list-style-type: none"> <li>• Merchandising</li> <li>• Program management levies</li> <li>• Rent for service e.g. exhibition space</li> <li>• Consultancy service provision</li> <li>• inclusion of percentage for core support in fund raising proposals.</li> </ul>	<ul style="list-style-type: none"> <li>• Branding and promotional material development</li> <li>• Communication toolkit development to support fund raising</li> <li>• Establish BIONET point of sale and opening bank account.</li> <li>• Event organisation</li> <li>• Guidelines and procedures on consultancy fees.</li> <li>• Capacity building of resource teams.</li> <li>• Set up endowment fund.</li> </ul>	<ul style="list-style-type: none"> <li>• Secretariat staff to carry out day to day activities.</li> <li>• Forum members expertise.</li> <li>• Consultants to aid in developing guidelines carry out trainings and develop procedures and communication tool kit including IEC materials, funds to remunerate staff and consultants.</li> <li>• Office space.</li> <li>• Fund to print IEC and branded materials.</li> <li>• Funds to set up SEAF point of</li> </ul>



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Objectives	Funding Streams	Strategies	Activities	Resource Requirements
To diversify and grow funding streams to support 100% of program budget/costs by 2023.	<ul style="list-style-type: none"> <li>Grants from development partners (PSPs) and International NGOs.</li> </ul>	<ul style="list-style-type: none"> <li>Grants</li> <li>Donations</li> <li>Sponsorships</li> </ul>	<ul style="list-style-type: none"> <li>Rapid PSP donor mapping/scoping and intelligence gathering</li> <li>PSP donor cultivation and engagement e.g. attending PSP forums, courtesy visits</li> <li>Initiate solicited and unsolicited proposal development and follow-ups.</li> <li>Registration of the forum</li> <li>Distribution of IEC material.</li> </ul>	<p>sale and bank cost.</p> <ul style="list-style-type: none"> <li>Secretariat staff to write proposals and gather intelligence/ carry out donor mapping.</li> <li>Printing costs for IEC materials.</li> <li>Funds for travel and communication costs to meet with donors.</li> <li>Cost of forum registration.</li> </ul>
To diversify and grow funding streams to support 100% of programme budget/costs by 2030	<ul style="list-style-type: none"> <li>Corporates</li> <li>Foundations</li> <li>Media</li> </ul>	<ul style="list-style-type: none"> <li>Donations</li> <li>Grants</li> <li>campaigns/promotions</li> <li>sponsorships</li> <li>Special events</li> <li>Membership recruitment</li> <li>Merchandising</li> <li>Enlist support of high-profile individuals and corporates as brand ambassadors.</li> </ul>	<ul style="list-style-type: none"> <li>Private sector donor mapping</li> <li>Development of Unique Selling Propositions (USPs), fundraising products development (e.g. corporate sponsorship)</li> <li>Development and rollout of corporate engagement plan (cultivation steps, acquisition, retention)</li> <li>Formal and informal private sector engagements/meetings</li> <li>Distribution of IEC materials.</li> </ul>	<ul style="list-style-type: none"> <li>Secretariat staff to write proposals and gather intelligence/ carry out donor mapping as well as develop fund raising products and corporate engagement plan.</li> <li>Printed IEC materials.</li> <li>Funds for travel and communication costs to meet with donors.</li> </ul>



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Objectives	Funding Streams	Strategies	Activities	Resource Requirements
To diversify and grow funding streams to support 100% of programme budget/costs by 2030	<ul style="list-style-type: none"> <li>Member contributions.</li> </ul>	<ul style="list-style-type: none"> <li>Membership drive.</li> </ul>	<ul style="list-style-type: none"> <li>Breakfast meetings</li> <li>Recruitment desk at sector events</li> <li>Social media campaigns</li> <li>Side events at sector conferences/fora</li> <li>Telemarketing</li> <li>Setting up county forums</li> <li>Distribution of IEC material.</li> </ul>	<ul style="list-style-type: none"> <li>Funds to hire venues for breakfast meetings.</li> <li>Funds to register and attend sector events.</li> <li>Funds for telemarketing secretariat staff to run social media campaigns and recruit members.</li> <li>IEC materials.</li> <li>Consultant to develop membership governance manuals, steering committee and members to support in setting up county forums.</li> </ul>
Develop adequate internal fundraising capacity by 2020	<ul style="list-style-type: none"> <li>Core funding</li> </ul>	<ul style="list-style-type: none"> <li>Capacity building</li> <li>leadership/governance streamlining (membership).</li> </ul>	<ul style="list-style-type: none"> <li>Intern and secretariat staff recruitment.</li> <li>Development, approval and rollout of fundraising strategy.</li> <li>Training staff and steering committee on fund raising.</li> </ul>	<ul style="list-style-type: none"> <li>Funds to pay consultants to train steering committee and secretariat staff on fund raising, consultant to quality control draft resource mobilisation strategy, funds to pay intern and secretariat staff.</li> </ul>

**Table 10: Fund-raising Methods and Funding streams**



## CHAPTER 7

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### 7 COMMUNICATIONS FRAMEWORK AND KNOWLEDGE MANAGEMENT

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Effective communication and knowledge management are integral components of BIO-NET's strategic plan. This section outlines the framework for communication strategies and knowledge sharing initiatives to facilitate the achievement of organizational goals and enhance stakeholder engagement.

#### 7.1 Communication Objectives

- **Ensure Transparency:** Foster open and transparent communication channels within BIO-NET and with external stakeholders.
- **Promote Engagement:** Encourage active participation and collaboration among members, partners, and the broader biogas community.
- **Disseminate Information:** Share relevant updates, resources, and best practices to support informed decision-making and learning.
- **Build Awareness:** Increase awareness of biogas benefits, opportunities, and challenges among target audiences, including policymakers, investors, and the general public.

#### 7.2 Communication Channels

- **Internal Channels:** Utilize internal communication platforms such as intranet, email newsletters, and staff meetings to disseminate organizational updates, project progress, and relevant information.
- **External Channels:** Engage external stakeholders through various channels including website, social media, press releases, and industry events to amplify BIO-NET's voice and influence in the biogas landscape.
- **Partnership Communications:** Collaborate with strategic partners to leverage their communication channels and reach broader audiences effectively.

#### 7.3 Knowledge Management

- **Knowledge Sharing Platforms:** Establish an online knowledge sharing platform or portal to facilitate the exchange of information, best practices, and resources among BIO-NET members and partners.
- **Document and Resource Repository:** Develop a centralized repository for documents, reports, research findings, and other relevant resources to ensure easy access and retrieval of information.



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- **Capacity Building Initiatives:** Offer training programs, webinars, and workshops focused on knowledge transfer and skill development to enhance the capabilities of members and stakeholders.
- **Monitoring and Evaluation:** Implement mechanisms to monitor the effectiveness of knowledge management initiatives and evaluate their impact on organizational learning and performance improvement.

### 7.4 Stakeholder Engagement

- **Feedback Mechanisms:** Establish feedback mechanisms to gather input, suggestions, and concerns from stakeholders, ensuring their voices are heard and incorporated into decision-making processes.
- **Regular Communication Updates:** Provide regular updates and progress reports to stakeholders on key initiatives, achievements, and challenges, fostering transparency and accountability.
- **Engagement Events:** Organize stakeholder engagement events, forums, and consultations to solicit feedback, build relationships, and foster collaboration within the biogas community.

### 7.5 Continuous Improvement

- **Evaluation and Adaptation:** Regularly evaluate the effectiveness of communication strategies and knowledge management practices, and adapt them based on feedback and lessons learned.
- **Benchmarking and Best Practices:** Benchmark against industry standards and best practices to identify areas for improvement and innovation in communication and knowledge sharing.
- **Capacity Development:** Invest in building the capacity of communication and knowledge management personnel to ensure they have the skills and resources necessary to execute their roles effectively.
- **The Communications Framework and Knowledge Management section of BIO-NET's strategic plan provides a roadmap for enhancing communication strategies and knowledge sharing initiatives to support the organization's mission and objectives. By fostering transparency, promoting engagement, and facilitating information exchange, BIO-NET aims to strengthen its position as a leading advocate for biogas technology adoption and sustainable development**



## CHAPTER 8

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### 8 RISK MANAGEMENT

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#### 8.1 Risk Management

Risk refers to future uncertainties. It is the deviation from expected outcome or goals. It is the probability of an outcome having a negative effect on people, systems, or assets.

*BIO-NET recognizes that there are various types of risks including:*

- (i) Compliance risk arising from violation of external or internal rules, regulations, or standards leading to financial losses, losing customers or paying a fine due to breaking compliance regulations.
- (ii) Legal risk arising from breaking government's rules for operations leading to expensive lawsuits.
- (iii) Strategic risk because of a faulty business strategy or lack of one.
- (iv) Reputational risk that can negatively impact on the standing or public opinion resulting in profit losses and decreased confidence among shareholders.
- (v) Operational risk from day-to-day activities caused by internal systems or external factors.

#### 8.2 Operational Risks

Operational risk refers to risks caused by flawed or failed processes, policies, systems or events that disrupt business operations. These risks can arise from employee errors, criminal activity such as fraud, and physical events like fires. Operational risks cannot be eliminated wholly but trying to mitigate the risk within each category as best as possible is important.

Minimization of operational risks can be done by evaluating internal processes, systems, and external factors that could lead to operational failures. The Risks can be identified through risk assessments, incident analysis, internal audits, and external benchmarking. Once the risks are identified, they must be assessed for their potential impact and likelihood.

#### 8.3 Ecosystem Risks

In the case of BIO-NET an ecosystem refers to the network of organizations including suppliers, distributors, customers, competitors, government agencies and donors who are involved in the delivery of a specific product or service by cooperation or competition. It also refers to the operating environment around BIO-NET and how the relationship balance amongst the network/ stakeholders is maintained. When the balance of the relationship is affected, risks are envisaged.



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### 8.4 Sustainability Risks

Sustainability risks are those risks associated with sustainability and survival issues. These are long-term and difficult to quantify as there is greater uncertainty as to how they will develop.

They can either be environmental, social-economic or governance or events or conditions that, if they occur, could cause an actual or a potential negative impact on the operations of BIO-NET.

The term sustainability is broadly used to indicate programs, initiatives and actions aimed at the preservation of a particular resource.

To achieve sustainability, BIO-NET must adopt a holistic approach that encompasses five distinct stages: Preservation, Protection, Regeneration, Regrowth and the attainment of precise Self-sufficiency. Together, these stages form a roadmap towards a self-sufficiency and sustainability.

Principles of sustainability, Reduce, Reuse, Recycle, Refuse, Rethink and Repair are ways the organization can lead a more sustainable life and lessen the risks.



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# Annexes

## Annex 1: Partnerships and Liaisons

	Name of partner	Role	Nature of partnership
<b>Government ministries and agencies</b>			
1	Ministry of Energy & Petroleum (MoEP)	Formulation of policies that support biodigester adoption. Implementation of biogas programmes in collaboration with development agencies.	Current: Collaboration on bioenergy strategy, implementation of programs, and innovation platforms. 2024-2028
2	Ministry of Agriculture, Livestock, Fisheries, And Cooperatives	Promotes the use of bio- slurry. Drafts policies and regulations for regulating fertilizers.	Promotion of bio-slurry use, fertilizer regulations, and smart agriculture initiatives.
3	National Industrial Training Authority (NITA)	Regulating registered trainers. Accrediting institutions. Offering skills training. Harmonizing curricula and certificates.	Development of biogas training curriculum, accreditation of trainers, and harmonization of skills standards.
4	Energy and Petroleum Regulatory Authority (EPRA)	Regulates the renewable energy sector in Kenya. Proposes feed Tariffs for bioenergy plans, including biogas plans for grid-connected electricity.	Involvement in biogas regulations development committee and feed-in tariff discussions.
5	Kenya Bureau of Standards (KEBS)	Developing and implementing standards for biodigesters.	Development and implementation of biogas standards for both domestic and commercial applications.
6	Rural Electrification and Renewable Energy Corporation	Promoting the adoption of biodigesters by households, institutions and industry.	Promotion of biogas adoption across various sectors.
8	Kenya Industrial Research Institute (KIRDI)	Researching clean cooking solutions, including cookstoves.	Joint research and development of clean cooking solutions.
9	ILRI	Promoting the use of biodigesters. Researching bio-slurry suitability and treatment for cultivating various crops.	Promotion of biogas use and research on bio-slurry applications.
10	Jomo Kenyatta University of Agriculture and Technology (JKUAT)	Undertaking training of students and community on biodigesters at its Institute of Energy and Environmental Technology (IEET).	Training of students and communities on biogas technology.
11	Moi University	Expanding the space of information management in RE technologies	Collaboration on information management of renewable energy technologies.





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	Name of partner	Role	Nature of partnership
<b>Development Agencies and Non -governmental organisations</b>			
12	SNV Netherlands Development Organisation	Implements biodigester program in Kenya. Facilitates training of biodigester installers. Finances biogas programs. Undertakes and supports research in biodigesters. Supporting the development of policies to enhance the growth of the biodigester market.	Advocates for policies promoting market growth. (MoU signed)
13	GIZ	Implements biodigester programs in Kenya. Facilitates training of biodigester installers. Finances biogas programs. Undertakes and supports research in biodigesters. Supporting the development of policies to enhance the growth of the biodigester market.	Collaboration through the RBF programmes
14	ABPL	Training of biodigester installers Promoting uptake of biodigesters Training on bio-slurry production and use	Offers training on bio-slurry production and utilization. (Draft MoU under discussion)
15	UNIDO	Promoting uptake of clean cooking fuels and appliances Promoting the development of policies and standards to enhance the growth of the biodigester market	Collaborates on waste-to-energy projects and policy development.
16	NEMA	Regulatory on environmental aspects of biogas technology	Potential collaboration on environmental aspects of biogas technology.
17	NCA	regulates the construction industry, ensuring construction safety and adherence to building codes.	Technical standards and guidelines Accreditation and training Permits and approvals
18	World bank	Find entry through climate change campaigns	
19	Mama Doing Good (OFL)	Mama Doing Good is an organization focused on empowering women and rural communities.	Women's participation and leadership Accessibility and affordability Capacity building and training



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### Annex 2: SWOT Analysis

Category	Description	Impact
<b>Strengths</b>	<ul style="list-style-type: none"> <li>National recognition and leadership in convening stakeholders.</li> <li>Diverse membership and committed leadership.</li> <li>Official recognition by the government.</li> </ul>	<ul style="list-style-type: none"> <li>Strengthens policy advocacy and influence.</li> <li>Enhances effectiveness and reach.</li> <li>Solidifies position within the biogas sector.</li> </ul>
<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>Difficulty securing resources and unclear member benefits.</li> <li>Limited brand awareness and inadequate communication channels.</li> <li>Absence of clear regulations and narrow membership composition.</li> </ul>	<ul style="list-style-type: none"> <li>Hinders financial sustainability and growth.</li> <li>Restricts reach and impact.</li> <li>Creates challenges for comprehensive representation.</li> </ul>
<b>Opportunities</b>	<ul style="list-style-type: none"> <li>Exploring new funding avenues like results-based financing and collaboration.</li> <li>Increasing stakeholder engagement through committees and affirmative funds.</li> <li>Capitalizing on climate change initiatives and knowledge sharing.</li> </ul>	<ul style="list-style-type: none"> <li>Boosts financial resources and stability.</li> <li>Expands collaboration and support network.</li> <li>Enhances adaptation and innovation.</li> </ul>
<b>Threats</b>	<ul style="list-style-type: none"> <li>Frequent policy changes and increasing input costs create uncertainties.</li> <li>Overcoming historical challenges and navigating competition from other renewables.</li> </ul>	<ul style="list-style-type: none"> <li>Threatens strategic planning and project viability.</li> <li>Requires strategic focus and adaptation.</li> </ul>



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### **Strengths:**

- (i) **National Coordination Stature:** BIO-NET's recognition as a national coordinator lends credibility and influence to its initiatives.
- (ii) **Biogas Members Convener:** The role as a convener reflects BIO-NET's leadership in bringing diverse stakeholders together for collective action.
- (iii) **Diverse Membership Composition:** The variety in membership enhances BIO-NET's representation across the biogas sector.
- (iv) **Committed Leadership:** The proactive involvement of leadership strengthens the organization's impact on biogas initiatives.
- (v) **Official Recognition:** Being officially recognized by the government solidifies BIO-NET's position as a key player in the biogas landscape.

### **Weaknesses:**

- (i) **Resource Mobilization Challenges:** BIO-NET faces hurdles in mobilizing resources, impacting its financial sustainability.
- (ii) **Lack of Tangible Value Proposition:** The absence of a clear value proposition for members hampers their commitment to financial contributions.
- (iii) **Regulatory Vacuum:** The biogas sector lacks clear regulations, creating uncertainties for stakeholders.
- (iv) **Limited Membership Composition:** The narrow representation in membership limits the holistic inclusivity of BIO-NET.
- (v) **Financial Limitations:** The organization experiences constraints due to limited financing mechanisms.
- (vi) **Poor visibility** including lack of a functional physical office, website etc.
- (vii) **Lack of recognition** from sector practitioners, especially at grassroots level
- (viii) **Lack of proper communication channels**

### **Opportunities:**

- (i) **Results-Based Financing:** Leveraging results-based financing opportunities can boost financial inflows.
- (ii) **Influencing Farmer Cooperatives:** Encouraging the inclusion of biogas in lending schemes by farmer cooperatives expands market access.



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- (iii) Collaboration with County Governments: Partnering with county governments on energy plans opens avenues for growth.
- (iv) Affirmative Funds: Tapping into national affirmative funds can provide additional financial support.
- (v) CSO Inclusion in Committees: Involving Biogas sector CSOs/associations in county energy committees enhances collaboration.
- (vi) Climate change and environment conservation programs at county and national levels

### **Threats:**

- (i) Unstable Policy Environment: Frequent changes in policies pose risks to BIO-NET's strategic stability.
- (ii) Cost of Inputs: Rising costs of raw materials and inputs impact the economic viability of biogas projects.
- (iii) Vested Interests: Personal and business vested interests may hinder the organization's neutral stance.
- (iv) Legacy Reputation: The historical reputation of the biogas sector might present challenges ((e.g. nonfunctional plants).
- (v) Competition from Renewables: Growing competition from other renewable energy technologies requires strategic positioning.

This comprehensive SWOT analysis provides a deeper understanding of BIO-NET's internal strengths and weaknesses, as well as the external opportunities and threats they face.

By building on their strengths, addressing weaknesses, and leveraging opportunities, BIO-NET can navigate the threats and achieve their strategic goals.



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### Annex 3: PESTEL Analysis

Category	Description	Impact
<b>Political</b>	<ul style="list-style-type: none"> <li>Unclear policies, regulatory gaps, and inconsistent implementation create an uncertain operating environment.</li> <li>Taxation issues can impact technology and material costs.</li> </ul>	<ul style="list-style-type: none"> <li>Hinders strategic planning and investment.</li> <li>Increases project costs and complexity.</li> </ul>
<b>Economic</b>	<ul style="list-style-type: none"> <li>Financing challenges, reduced purchasing power, and rising raw material costs pose economic hurdles.</li> </ul>	<ul style="list-style-type: none"> <li>Limits financial resources and project viability.</li> <li>Reduces market demand and affordability.</li> </ul>
<b>Social</b>	<ul style="list-style-type: none"> <li>Behavioral change regarding feedstocks, labor dynamics, and male dominance in the sector present social challenges.</li> <li>Cultural resistance to new technologies may hinder adoption.</li> </ul>	<ul style="list-style-type: none"> <li>Limits feedstock availability and project implementation.</li> <li>Restricts talent pool and inclusivity.</li> </ul>
<b>Technological</b>	<ul style="list-style-type: none"> <li>Limited R&amp;D investment, unregulated products, and lack of innovation hinder technological advancements.</li> </ul>	<ul style="list-style-type: none"> <li>Slows down development and improvement of biogas technology.</li> <li>Compromises quality and efficiency of solutions.</li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>Pressure to mitigate climate change necessitates adaptation.</li> <li>Inadequate waste management infrastructure creates challenges.</li> <li>Environmental regulations and deforestation concerns impact project feasibility.</li> </ul>	<ul style="list-style-type: none"> <li>Creates opportunities for biogas as a sustainable solution.</li> <li>Requires addressing waste management issues for effective implementation.</li> <li>May limit suitable locations for biogas projects.</li> </ul>
<b>Legal</b>	<ul style="list-style-type: none"> <li>The absence of comprehensive regulations, expensive patenting processes, and legal backlogs pose legal challenges.</li> </ul>	<ul style="list-style-type: none"> <li>Creates uncertainty and risks for BIO-NET and the sector.</li> <li>Hinders innovation and market growth.</li> </ul>



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### **Political:**

- (i) **Lack of Clear Government Policies:** Ambiguous government policies create uncertainties in the biogas sector.
- (ii) **Regulatory Gaps:** The absence of specific biogas regulations contributes to a challenging operating environment.
- (iii) **Inconsistent Implementation:** Inconsistencies in implementing biogas programs hinder effective growth.
- (iv) **Taxation issues and trends** can impact on the cost the technologies and materials.

### **Economic:**

- (i) **Financing Challenges:** Lack of financing mechanisms and high-interest rates impact economic viability.
- (ii) **Reduced Purchasing Power:** Economic trends, such as reduced consumer purchasing power, affect market dynamics. ((change of investment priorities)
- (iii) **High cost of raw materials** due to inflation

### **Social:**

- (i) **Behavioural Change Challenges:** Societal perceptions against certain feedstocks, like human waste, pose behavioural challenges.
- (ii) **Labor Dynamics:** Nomadic culture affects the availability and type of labour required for sustaining biogas plants.
- (iii) **Construction industry** and by extension biogas sector dominated by male.

### **Technological:**

- (i) **Limited R&D Investment:** Low investments in research and development hinder technological advancements.
- (ii) **Unregulated Products:** The market sees substandard and unregulated biogas products, affecting overall quality.
- (iii) **Limited innovations** in the sector

### **Environmental:**

- (i) **Conservation Imperative:** Environmental regulations push for conservation, impacting deforestation practices.



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- (ii) Limited Biogas Applications: The restrictive nature of biogas fuel requires end-users to have land/access to land.

### **Legal:**

- (i) Regulatory Absence: Lack of comprehensive regulations poses legal challenges for BIO-NET and the sector.
- (ii) Patenting Costs: Expensive patenting processes restrict innovation within the biogas sector.
- (iii) Crowded legal representation hence creating backlogs in court cases.



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### Annex 4: Portfolio Analysis

Service	Financial Contribution	Strategic Alignment	Description
Lobbying & Advocacy	Neutral	High	Influences policy decisions favourable to the sector, promoting long-term sustainability. (e.g., secured X policy changes in Y timeframe)
Conflict Resolution	Potential	Moderate	Fosters collaboration, potentially generating revenue through specific mediation services. (e.g., facilitated Z successful mediations last year)
Representation	Potential	High	Advocates for member interests, attracting new members and generating revenue through fees. (e.g., membership grew by X% in the past year)
Capacity Building	Revenue	High	Enhances stakeholder skills, directly aligning with BIO-NET's mission and fostering market development. (e.g., trained by individuals through Z workshops)
Advisory & Project Development	Revenue	High	Supports project development, strengthening the sector and contributing to BIO-NET's financial health through fees. (e.g., supported the development of X biogas projects)
Networking & Linkages	Indirect	Moderate	Facilitates collaboration and knowledge sharing, indirectly contributing to market growth. (e.g., established Y partnerships and organized Z networking events)
Resource Mobilization	N/A	High	Crucial for financial sustainability, securing funding through various strategies. (e.g., raised Ksh.X million through Y funding sources)

#### Emerging Trends and Opportunities:

**Carbon markets & climate finance:** Develop services related to carbon credit trading and accessing climate finance for biogas projects, creating a new revenue stream and aligning with sustainability goals.





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**Knowledge & learning:** Establish a platform for sharing best practices, research findings, and technical information through online resources, workshops, or publications, generating revenue through subscriptions, fees, or partnerships.

**Research & development:** Engage in research or partner with institutions to develop and disseminate advancements in biogas technology, potentially generating revenue through consultancy services or intellectual property.

**Productive applications:** Explore the potential of biogas for various applications beyond energy generation, such as biochar production or industrial processes, offering advisory services or conducting feasibility studies for potential revenue generation.

**Bioenergy Tariff reviews:** Advocate for and influence policies related to bioenergy tariffs, directly impacting the sector's economic viability and potentially generating revenue through consultancy services.

### **Prioritized Growth Areas:**

- (i) **Expansion of representation services:** Cater to a wider range of stakeholders, potentially including investors, developers, or international organizations.
- (ii) **Enhanced capacity building programs:** Develop comprehensive training programs tailored to specific needs, charging fees for participation or partnering with training institutions.
- (iii) **Knowledge management initiatives:** Establish a platform for sharing best practices, research findings, and technical information, generating revenue through subscriptions, fees, or partnerships.

### **Consideration for Divestment:**

Services with consistently low financial contribution and limited strategic alignment may be considered for divestment or restructuring after careful evaluation and exploring potential alternatives.

By continuously monitoring performance, aligning services with strategic goals, and capitalizing on emerging trends, BIO-NET can optimize its portfolio for sustainable growth, financial stability, and maximum impact in promoting the biogas sector in Kenya. This analysis provides valuable insights into each service's potential and strategic considerations for BIO-NET's future development.



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### Annex 5: Business Canvas Model

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#### Customer Segments:

- (i) **Smallholder farmers:** BIO-NET's primary target market is smallholder farmers in Kenya, who can benefit from the use of biogas digesters to generate clean cooking fuel, reduce reliance on firewood, and produce organic fertilizer.
- (ii) **Biogas digester manufacturers, installers, promoters and contractors:** BIO-NET also collaborates with biogas digester practitioners to improve the quality and affordability of biogas digesters and biogas related appliances, making them more accessible to Kenyan farmers.
- (iii) **Clean energy investors:** BIO-NET seeks partnerships with clean energy investors to support the expansion of the biogas sector in Kenya and attract capital for biogas projects.
- (iv) **Government agencies:** BIO-NET engages with government agencies to advocate for policies that promote the adoption of biogas technology and support the biogas sector's growth.
- (v) **Training and Research Institutions.**
- (vi) **Other organizations involved in the biogas sector:** BIO-NET collaborates with other organizations working in the biogas sector, such as NGOs, and development partners, to share knowledge, expertise, and resources.

#### Value Propositions:

- (i) **High-quality biogas digesters:** BIO-NET provides high-quality biogas digesters that are durable, efficient, and tailored to the needs of clients through its trained members.
- (ii) **Technical assistance and training:** BIO-NET offer comprehensive technical assistance and training to its members on the technology, installation, operation, and maintenance of biogas digesters depending on the needs.
- (iii) **Financial support for biogas projects:** BIO-NET provides financial support to clients and other stakeholders to make biogas digesters more affordable and promote biogas adoption.
- (iv) **Advocacy and policy engagement:** BIO-NET actively advocate for policies that support the biogas sector, promoting biogas as a sustainable and renewable energy source.



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### Channels:

- (i) **Direct sales and marketing support:** BIO-NET facilitating its members to sell their biodigester kits to farmers through its networks and contacts.
- (ii) **Partnerships with local organizations:** BIO-NET collaborates with local NGOs, farmer associations, and community groups to reach farmers in remote areas and provide localized support.
- (iii) **Participation in trade shows and events:** BIO-NET actively participates in trade shows, agricultural fairs, and community events to showcase its products, services, and expertise.
- (iv) **Online marketing and social media:** BIO-NET utilizes online marketing platforms and social media channels to reach a wider audience, promote its products, and engage with potential customers.

### Customer Relationships:

- (i) **Building long-term relationships:** BIO-NET strives to establish long-term relationships with its customers by providing ongoing support, addressing their needs, and adapting its products and services to their evolving requirements.
- (ii) **High-quality products and services:** BIO-NET is committed to facilitating its members to provide high-quality biogas digester kits, technical assistance, and financial support to ensure customer satisfaction.
- (iii) **Regular communication and feedback:** BIO-NET maintains regular communication with its customers through various channels, seeking feedback and suggestions to improve its products, services, and overall customer experience.

### Revenue Streams:

- (i) **Facilitating sale of biodigester kits:** BIO-NET generates revenue as a facilitator of its members to sell their biodigester kits to farmers through its networks and contacts.
- (ii) **Technical assistance and training services:** BIO-NET charges fees for its technical assistance and training services related to biogas digester installation, operation, and maintenance.
- (iii) **Financial support for biogas projects:** BIO-NET generates revenue from interest payments and other fees associated with its financial support programs for biogas projects.
- (iv) **Member subscriptions:** BIO-NET can generate revenue by offering membership subscriptions that provide farmers with access to biogas digester kits, technical assistance, and financial support.



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### Key Resources:

- (i) **Experienced and knowledgeable staff:** BIO-NET's team of experts in biogas technology, engineering, agriculture, and business development is a key asset.
- (ii) **Network of partners and suppliers:** BIO-NET's network of partners and suppliers provides access to materials, expertise, and support for its operations.
- (iii) **Brand reputation as a trusted provider:** BIO-NET's established reputation as a reliable and trustworthy provider of biogas products and services is a valuable resource.

### Key Activities:

- (i) Support stakeholders with networks in the process of their design, manufacture, and sale of biogas digester kits.
- (ii) Provision of technical assistance and training: BIO-NET provides comprehensive technical assistance and training to farmers and other stakeholders on the installation, operation, and maintenance of biogas digesters.
- (iii) Provision of financial support for biogas projects: BIO-NET offers financial support to farmers and other stakeholders to make biogas digesters more accessible and promote biogas adoption.
- (iv) Advocacy and policy engagement: BIO-NET actively advocates for policies that support the biogas sector, promoting biogas as a sustainable and renewable energy source.

### Key Partnerships:

- (i) **Local NGOs and farmer associations:** BIO-NET collaborates with local partners to better understand farmer needs and tailor its products and services.
- (ii) **Government agencies:** BIO-NET influences policy, secures funding, and gains credibility through partnerships with government agencies.
- (iii) **Research institutions and development partners:** BIO-NET stays up-to-date on technology, conducts research, and accesses expertise through partnerships with research and development partners.
- (iv) **Biogas digester manufacturers:** BIO-NET improves product quality, affordability, and accessibility through partnerships with biogas digester manufacturers.
- (v) **Clean energy investors:** BIO-NET secures funding, expands its reach, and contributes to renewable energy transition through partnerships with clean energy investors.



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### Components of the Business Canvas Model for BIO-NET

Component	Description
Key Partners	<ol style="list-style-type: none"> <li>1. Local NGOs, CBOS and Farmer Associations,</li> <li>2. Government Agencies,</li> <li>3. Research Institutions,</li> <li>4. Development Partners,</li> <li>5. Biogas Digester Manufacturers,</li> <li>6. Clean Energy Investors.</li> </ol>
Value Propositions	<ol style="list-style-type: none"> <li>1. High-quality biogas digester kits supplied by BIO-NET Members,</li> <li>2. Technical assistance and training on biogas installation and operation,</li> <li>3. Financial support for biogas projects,</li> <li>4. Advocacy and policy engagement to promote the adoption of biogas in Kenya.</li> </ol>
Customer Relationships	<ol style="list-style-type: none"> <li>1. Build long-term relationships with customers,</li> <li>2. Provide high-quality products and services.</li> <li>3. maintain regular communication and feedback.</li> </ol>
Customer Segments	<ol style="list-style-type: none"> <li>1. Smallholder farmers,</li> <li>2. Biogas digester manufacturers,</li> <li>3. Clean energy investors,</li> <li>4. Government agencies,</li> <li>5. Other organizations involved in the biogas sector in Kenya.</li> </ol>
Channels	<ol style="list-style-type: none"> <li>1. Direct sales and marketing,</li> <li>2. Partnerships with local organizations,</li> <li>3. Participation in trade shows and events,</li> <li>4. Online marketing and social media.</li> </ol>
Key Resources	<ol style="list-style-type: none"> <li>1. Experienced and knowledgeable staff,</li> <li>2. Network of partners and suppliers,</li> <li>3. Brand reputation as a trusted provider.</li> </ol>
Cost Structure	<ol style="list-style-type: none"> <li>1. Manufacturing and selling biogas digester kits,</li> <li>2. Providing technical assistance and training services,</li> <li>3. Providing financial support for biogas projects,</li> <li>4. Conducting advocacy and policy engagement.</li> </ol>
Revenue Streams	<ol style="list-style-type: none"> <li>1. Technical assistance and training services,</li> <li>2. Financial support for biogas projects.</li> </ol>



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### **Annex 6: Balance Score Card Analysis**

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#### **Financial Perspective:**

- (i) Membership Restructuring: Reorganizing the membership structure ensures inclusivity and financial sustainability.
- (ii) Service Line/Product Development: Developing specific service lines/products attracts diverse revenue streams.
- (iii) Proposal Writing and RFP Response: Proactive engagement in proposal writing and RFP responses enhances funding opportunities.
- (iv) Partnerships Formation: Forming strategic partnerships expands the network and financial support.

#### **Customer Perspective:**

- (i) Understanding Expectations: Identifying and understanding expectations of BCEs, Development Partners, Government, and End-users.
- (ii) Customer Satisfaction Measurement: Implementing surveys to gauge customer satisfaction, loyalty, and market share.
- (iii) Initiatives for Acquisition and Retention: Implementing personalized marketing, loyalty programs, and excellent customer service.

#### **Internal Process Perspective:**

- (i) Process Strengthening: Strengthening critical internal processes like accounting, administration, fundraising, and relationship management.
- (ii) Efficiency and Quality Measurement: Employing metrics like role specifications, key performance indicators, and benchmarking for efficiency and quality.
- (iii) Operations Optimization: Identifying specific improvements, streamlining communication, and technology upgrades for internal optimization.

#### **Learning & Growth Perspective:**

- (i) Skills Development: Emphasizing leadership, negotiation, fundraising, and management skills development.
- (ii) Continuous Learning Culture: Creating a culture of continuous learning through training needs assessment, exchange programs, and team-building activities.
- (iii) Employee Engagement Measurement: Regular performance reviews, continuous assessments, and surveys to measure employee engagement.



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### **Scorecard Implementation:**

- (i) Link each objective to specific initiatives and action plans.
- (ii) Regularly monitor and measure progress against targets using data and reporting systems.
- (iii) Use the scorecard to inform strategic decision-making and resource allocation.
- (iv) Conduct regular reviews and adjust the scorecard as needed to reflect changing circumstances and priorities.

This balanced scorecard provides a framework for BIO-NET to track its progress, measure its impact, and ensure it stays on track towards achieving its strategic vision.

By focusing on a balanced scorecard approach, BIO-NET can create a sustainable and impactful organization that truly makes a difference in Kenya.

Note: scorecard is a tool, not a rigid template. Adapt it to fit BIO-NET's specific needs and adjust it over time to remain relevant and effective.



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### **Annex 7: Mackensy 7S Framework Analysis**

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#### **Shared Values:**

- (i) Inclusiveness: The commitment to inclusivity fosters collaboration and diversity within BIO-NET.
- (ii) Integrity: Upholding integrity ensures ethical practices and trustworthy operations.

#### **Strategy:**

- (i) Industry Voice: The goal to be the industry voice reflects a strategic focus on advocacy and representation.
- (ii) Informed Membership Categorization: Informed biogas membership categorization ensures tailored strategies for diverse stakeholders.

#### **Systems:**

- (i) Awareness Creation: Strategies like awareness creation strengthen BIO-NET's influence and reach.
- (ii) Capacity Building Training: Ongoing capacity-building initiatives enhance the skills of stakeholders.
- (iii) Exhibition/Market Activations/Demos: Engaging in exhibitions and market activations promotes visibility and understanding.

#### **Structure:**

Governance Structure: A well-defined governance structure supports collaboration, agility, and effective decision-making.

#### **Staff:**

Diverse Member Skills: The diverse, educated, and technical skills of members contribute to the organization's capabilities.

#### **Skills:**

Leadership Skills: Developing leadership, negotiation, and management skills ensures effective organizational functioning.

#### **Style:**

Consultative Decision Making: A consultative and participatory decision-making style encourages member engagement.