

ANNEX 1: Draft EAC Regional Bioeconomy Strategy Implementation Plan

Introduction

The EAC Regional Bioeconomy Strategy Implementation Plan is intended to guide the realization of practical aspects of the strategy, notably objectives, strategies and key thematic actions. In developing the framework for implementation of the strategy, *Specific, Measurable, Achievable, Realistic and Time-bound* (“SMART”) planning principles have been employed in order to ensure that the implementation plan is formulated in a manner that it is both technically and operationally sound, particularly in regard to achieving desired impacts and outcomes.

The practical perspectives presented in the implementation plan seek to offer guidance in key areas where effective utilization of strategy provisions by stakeholders are expected to greatly contribute to the advancement of the bioeconomy systems in the EAC region.

Key considerations related to the operationalization of the strategy include: recommended approach to implementation; implementation timeline; strategies for popularization of bioeconomy among stakeholders and the general public; capacity building interventions; initial estimate of strategy implementation cost; and strategies for resource mobilization.

Approach to Policy Implementation

Since the EAC Regional Bioeconomy Strategy will affect the nature and scope of bioeconomy systems in the six Partner States, it is essential that a robust “management entity” is put in place to oversee proper implementation, coordination, monitoring and evaluation of policy performance, across the entire regional bioeconomy value chain.

This function will be performed by an EAC Regional Bioeconomy Working Group with participants from the various Bioeconomy stakeholder sectors, namely, inventors, innovators, researchers, academia, users, companies, entrepreneurs, MDAs, Civil Society Organisations, private sectors and the general public. The working group will have participants rather than members in order to facilitate diversity of expertise and participation.

The management and coordination of activities of the Working Group will be handled by a Regional Technical Committee (RTC) comprising of a high-level group of officials and bioeconomy experts drawn from the region. Members will include representatives of Partner State; Science and Technology Commissions and Ministries in charge of Science, Technology and Innovation. The EASTECO Secretariat will also be a member of the RTC and responsible for coordination and operationalization of working group activities and

informing EASTECO Management of Bioeconomy development plans, strategies and activities organized by the RTC.

The Terms of Reference (TORs) of the EAC Regional Working Technical Committee (RTC) will include:

- a) Managing the activities of the EAC Regional Technical Committee ;
- b) Advocating for accelerated establishment and operationalization of National bioeconomy Policies in all Partner States;
- c) Ensuring a multi-disciplinary approach to strategy implementation by embracing the role of environmental, social sciences, humanities and ethics in the development of a socially and economically viable and workable bioeconomy that can sustainably drive innovation and creativity in the region;
- d) Conceptualizing the establishment of an EAC Regional Bioeconomy Centre of Excellent for specialized skills capacity building across the entire bioeconomy value chain;
- e) Providing expert advice and guidance on processes related to Bioeconomy-driven knowledge transfer; technology development, transfer and adaptation; Foreign Direct Investments (FDIs); and commercialization of research outputs and innovations
- f) Instigating and coordinating the sharing of existing Bioeconomy-related physical and technology infrastructure, as well as the establishment of new shared facilities/resources in the EAC region, and ensuring their effective utilization while looking for synergies with circular economy;
- g) Monitoring the integration of Bioeconomy into the regional development agenda through an agreed regional framework and system that provides context to it;
- h) Participating at regional and international Bioeconomy development meetings, conferences and symposia, with a view to establishing/deepening linkages and collaborations with strategic partners;
- i) Developing a framework for effective linkage between Partner State national Bioeconomy policies and EAC Regional Bioeconomy programs and activities;
- j) Formulating a high-profile regional bioeconomy program for recognizing and rewarding bioeconomy innovation and creativity in the EAC region;
- k) Organising regional conferences and activities related to Bioeconomy development in the region;
- l) Compiling evidence-based status reports on bioeconomy development in the region;
- m) Advising EASTECO on integration of Bioeconomy in emerging regional development issues;
- n) Advising EASTECO on strategies, plans and activities related to development of bioeconomy infrastructure, human capital and utilization;
- o) Promoting Bioeconomy-centric collaborations and partnerships at regional and international level;
- p) Advising EASTECO on the appropriate structure and institutional arrangements for Bioeconomy developments in the region; and
- q) Sharing and disseminating relevant bioeconomy information with regional stakeholders and incentivising the use of the Regional Observatory.

Bioeconomy Strategy Implementation Timeline

The lifespan of the EAC Regional Bioeconomy Strategy will be a period of ten (10) years, from the date it comes into effect, as recommended by Partner State stakeholders and guided by existing strategy duration norms. There will be periodic review of strategy effectiveness during this period, in line with the EAC Regional Bioeconomy Strategy Monitoring and Evaluation (M&E) Framework. The performance of the strategy will be reviewed after the first five (5) years of operation for purposes of ensuring sustainability; adaptation to new issues and trends; and effective response to findings of Strategy M&E and impact assessment activities, audits and studies.

Effective Strategy implementation will rely on following an approach where timely and measurable flow of required enabling resources, including infrastructure, human capital and financing is upheld.

Popularization of Bioeconomy in EAC Region

The popularization of bioeconomy in the EAC region is deemed a critical success factor for the EAC Regional Bioeconomy Strategy. Accordingly, the promotion of Bioeconomy and sensitization of stakeholders and the general public in the region will require extensive and sustained awareness promotion campaigns undertaken and coordinated by the Regional Technical Steering Committee (RTC) of the EAC Regional Bioeconomy working group.

Communication plays an increasingly important role in innovation, and is particularly important in the development of a bioeconomy. During the implementation of this strategy, there is need for effective leadership and communication to facilitate coordinated and effective implementation within and across countries in the region. There is a need to build an understanding amongst the key actors and the general population of the region about the concept of a bioeconomy, the need for its development in the region, and its contribution to the Sustainable Development Goals and combatting climate change.

A coordinated plan to communicate the bioeconomy is essential, since the messaging has to be appropriate for the audience. Information exchange at meetings, seminars, workshops and hearings is essential and helps stimulate innovations and the development of bioeconomy in the region. Establishment of a regional bioeconomy observatory knowledge sharing portal that will publish reports, information on partners, projects, breakthroughs and funding opportunities among others, will assist with communication. Actors in the innovation system need to be trained to effectively communicate with various market actors and end-users.

The strategies used for popularization of bioeconomy and awareness promotion will include, but not be limited to:

- a) Creating a critical mass of bioeconomy awareness and appreciation among stakeholders and the general public;
- b) Ensuring active stakeholder and public participation during strategy implementation; and
- c) Use of print and electronic media publicity and sensitization campaigns tailored to target different bioeconomy stakeholder categories with the aim to consciously utilize and invest in bioeconomy, resulting in the production, use and conservation of biological resources, including knowledge, science, technology and innovation related, to provide information, products, processes and services in all economic sectors.

Financing and Resource Mobilization

The implementation of programs/activities related to the EAC Regional Bioeconomy Strategy will require substantial financial, human capital and infrastructure resources.

There is need to facilitate access to appropriate financing to support implementation of priority strategic initiatives that deliver or catalyse the delivery of regional bioeconomy outcomes and impacts. Access to capital and credit facilities under reasonable terms is critical for innovation and for realising the bioeconomy vision in the region. Public funding (from national budget allocations and funding agencies) is often the base for R&D efforts in the public sector and academia. But, to successfully bring R&D products or innovation of new bio-products to market, mechanisms to share risks and new funding partnerships are necessary, in which innovation, risks and business development costs are borne by several different parties.

These resources will have to be mobilized through appropriate initiatives in collaboration with various potential benefactors and will include:

- a) *Financial capital* for operationalization of regional bioeconomy programs and activities. These resources should be mobilized from Partner State contributions, regional and international cooperation agencies and development partners, as well as bioeconomy systems beneficiaries, through mechanisms and modalities elaborated and agreed through the Regional Technical Steering Committee (RTC) of the EAC Regional Technical Working Group.
- b) *Human capital* to undertake the various regional strategy programs and activities related to strategy implementation. The human capital required for a sustainable bioeconomy system in the EAC region should primarily be supported through Partner State contributions and regional and international cooperation agencies.

- c) *Infrastructure* to support the various programs and activities related to implementation of the bioeconomy Strategy. The infrastructure necessary for a sustainable bioeconomy systems in the EAC region should be supported through Partner State contributions, regional and international cooperation agencies and development partners.

Policy and legislation

The implementation of programs/activities related to the EAC Regional Bioeconomy Strategy will require enabling policy environment ensured by enacting and harmonising policies and legislation in the region to support biosciences training and research, bio-innovation, and bio-businesses. The implementation will also require policies and regulations that clearly benefit innovation and deployment, not only on the supply side, but also on the demand side will be crucial for successful delivery of the Bioeconomy Strategy in the region. Demand can be supported through: conducive long-term policies; efficient national regulatory systems; and appropriate incentive systems, including policies on banning /phasing out plastics, supporting SME growth, manufacture and use of locally made products, and enhancing ease of doing business, supporting actions to reduce Green House Gas emissions and mitigation of climate change, advance circular economy and regulations that foster rather than stifle innovations in support of the bioeconomy, and those that increase biobased trade – within and outside the region.

Effective governance will require interdisciplinary assessments and a consideration of insights from a broad set of scientific disciplines, including environmental, social and economic disciplines. The action required is:

- Policy makers to create an enabling policy environment in East Africa for the emergence of bioeconomy as a major driver for environmentally sustainable and inclusive economic development.

Capacity strengthening

The implementation of programs/activities related to the EAC Regional Bioeconomy Strategy will require building human and infrastructural capacity for research, entrepreneurship and business development required to drive strong bioeconomy value chains in the region. The implementation will require enhancing the bioeconomy innovation system including facilitating the connection of entrepreneurs, especially start-up businesses, and affordable financing capacity development in all areas of the bioeconomy. Inadequate technical training, poor access to research facilities, and lack of strategic partnerships with other African and international research institutions are some of the major capacity constraints the region faces. Beyond human capacity and R&D infrastructure, entrepreneurial skills and competencies are critical for good ideas to move through to commercialisation.

Coordination and Partnerships

The implementation of programs/activities related to the EAC Regional Bioeconomy Strategy will require catalysing relevant and productive partnerships and collaborations to drive bio-innovations and bio-businesses through creating a dedicated centre of excellence within the EAC Secretariat to provide leadership and support to the development and deployment of well-coordinated, functional innovative partnerships and collaborations at national, regional, continental and global levels needed to create a thriving and sustainable bioeconomy across East Africa that leverages on available science, technologies and innovations and has access to critical capacity and financing it needs.

Effective regional collaboration will be crucial to delivering the objectives of the Bioeconomy Strategy. This will require an understanding of the ever changing contexts and needs of individual countries and their economic development expectations.

A robust coordination and partnership function will be a critical strategic enabler. This Strategy proposes a lean, but-fit-for-purpose, coordination and partnership unit embedded in the EAC Secretariat that will provide leadership and coordination to drive implementation. The unit will be responsible, among other things, for fostering stakeholder engagements, creation of enabling policy environment, resource mobilisation, strategic partnership and collaboration arrangements, communication about the bioeconomy, and catalysing program development and implementation mechanisms that are seamlessly integrated into national programming and not seen and treated as separate 'regional projects'. Importantly, this function will ensure on-going relevance, effectiveness, efficiency, and sustainability of programming at regional level.

EAC Regional Bioeconomy Implementation Plan Matrix (2021 – 2031)

No.	STRATEGIC ACTIONS	Activities (related to Actionable Strategy thematic area & Actions)	Timeline from launch (Years)	Projected Cost (USD)	Responsible Centres/Actors
1	Popularization of Bioeconomy in EAC Region	<ul style="list-style-type: none"> • Promote Bioeconomy and sensitize the stakeholders and the general public in the region • Undertake extensive and sustained awareness promotion campaigns • Build an understanding amongst the key actors and the general population of the region about the concept of a bioeconomy • Development of the bioeconomy communication and awareness plan • Improve access to bioeconomy information and data through e-platforms such as the regional bioeconomy observatory knowledge sharing portal • Convening of Regional Bioeconomy conferences, webinars and scientific workshops • Creating a critical mass of bioeconomy awareness and appreciation among stakeholders and the general public; 	Y1-Y10	US\$5m	<ul style="list-style-type: none"> • EASTECO • Partner State Governments & MDAs • Technical Steering Committee (TSC), • EAC Regional Bioeconomy Forum • EAC Organs and Institutions • Regional Bioeconomy stakeholders • Regional and International bioeconomy development organizations

No.	STRATEGIC ACTIONS	Activities (related to Actionable Strategy thematic area & Actions)	Timeline from launch (Years)	Projected Cost (USD)	Responsible Centres/Actors
		<ul style="list-style-type: none"> • Ensuring active stakeholder and public participation during strategy implementation; and • Use of print and electronic media publicity and sensitization campaigns tailored to target different bioeconomy stakeholder categories with the aim to consciously utilize and invest in bioeconomy • Continue with series of the Eastern Africa Bioeconomy Conference 			
2	Bioeconomy Financing and Resource Mobilization	<ul style="list-style-type: none"> • Facilitate access to appropriate financing to support implementation of priority strategic initiatives that deliver or catalyse the delivery of regional bioeconomy outcomes and impacts • Mobilize funds for bioeconomy research and innovation from Partner State contributions, regional and international cooperation agencies and development partners • Establish the Research and Innovation Fund • Conduct regional bioeconomy infrastructure baseline study • Support bioeconomy infrastructure development through Partner State contributions, regional and international cooperation agencies and development partners. 	Y1-Y10	US\$50m	<ul style="list-style-type: none"> • EASTECO • Partner State Governments & MDAs • Technical Steering Committee (TSC), • EAC Regional Bioeconomy Forum • EAC Organs and Institutions • Regional Bioeconomy stakeholders • Regional and International bioeconomy

No.	STRATEGIC ACTIONS	Activities (related to Actionable Strategy thematic area & Actions)	Timeline from launch (Years)	Projected Cost (USD)	Responsible Centres/Actors
					development organizations
3	Bioeconomy Capacity Strengthening	<ul style="list-style-type: none"> • Coordinate current institutional arrangements in terms of their mandates, functions and activities in respect of bioeconomy-related issues. • Establish regional centre of excellence to host programmes that produce new knowledge on how to foster and advance the transition to a bioeconomy-based society in the Partner states by integrating research, innovation and entrepreneurship. • Strengthen key institutions and encourage collaboration both regionally and nationally. • Maintain highly trained academic staff at public R&D institutions offering competitive remuneration and career opportunities. • Enhance capacity in modern biosciences and related technologies, including synthetic biology, nanotechnology and bioinformatics, digitalisation and block chain technologies. • For the health sector, build expertise in drug development, clinical trials and regulatory aspects. • Strengthen capacity in bioprocess engineering and valorisation of primary produce, including the construction and engineering of highly 	Y1-Y7	US\$25m	<ul style="list-style-type: none"> • EASTECO • Partner State Governments & MDAs • Technical Steering Committee (TSC), • EAC Regional Bioeconomy Forum • EAC Organs and Institutions • Regional Bioeconomy stakeholders • Regional and International bioeconomy development organizations

No.	STRATEGIC ACTIONS	Activities (related to Actionable Strategy thematic area & Actions)	Timeline from launch (Years)	Projected Cost (USD)	Responsible Centres/Actors
		<p>efficient and sustainable bioprocessing facilities of different scales, including modern biorefineries.</p> <ul style="list-style-type: none"> • Build know-how in entrepreneurship at public sector institutions, including business planning and business management. This needs to go hand in hand with policies and incentives for staff to develop spin-off businesses. • Stimulate business to business (B2B) collaboration, including supporting private sector actors with business development. • Provide professional business incubation services to assist innovation actors with business development and commercialising promising products and technologies. • Establish and/or strengthen technology transfer offices in universities and research institutes to provide support for techno-economic analysis and linkage with the private sector. • Promote establishment of science and technology parks; science, technology and innovation hubs; technology business incubators; and industrial parks in order to spur bioeconomy technology transfer, adaptation and exploitation in the region. 			

No.	STRATEGIC ACTIONS	Activities (related to Actionable Strategy thematic area & Actions)	Timeline from launch (Years)	Projected Cost (USD)	Responsible Centres/Actors
		<ul style="list-style-type: none"> • Organise bioeconomy technology fairs to provide an opportunity for entrepreneurs and potential investors to link up. • Support community driven value addition processes. These could be in the form of co-operatives, or formation of smallholder-based companies specialising in value addition to a specific bio-resource or a range of bioresources. • Develop biorefinery structures and agro-industrial development centres, including the development of local and community based bioprocessing structures. • Establish knowledge centres and/or clusters for specific value chains such as waste conversion, biofuels etc. 			
4	Bioeconomy Coordination and Partnerships	<ul style="list-style-type: none"> • Establish coordination and partnership unit embedded in the EASTECO Secretariat that will provide leadership and coordination to drive implementation. • Establish and catalysing relevant and productive partnerships and collaborations to drive bio-innovations and bio-businesses. • Support to the development and deployment of well-coordinated, functional innovative partnerships and collaborations at national, regional, continental and global levels. 	Y1-Y10	US\$5m	<ul style="list-style-type: none"> • EASTECO • Partner State Governments & MDAs • Technical Steering Committee (TSC), • EAC Regional Bioeconomy Forum • EAC Organs and Institutions

No.	STRATEGIC ACTIONS	Activities (related to Actionable Strategy thematic area & Actions)	Timeline from launch (Years)	Projected Cost (USD)	Responsible Centres/Actors
		<ul style="list-style-type: none"> Promote market-driven technology development and transfer collaborations between regional actors in academia, research and the private sector. 			<ul style="list-style-type: none"> Regional Bioeconomy stakeholders Regional and International bioeconomy development organizations
5	Bioeconomy Policy and legislation	<ul style="list-style-type: none"> Create an enabling policy environment in East Africa for the emergence of bioeconomy as a major driver for environmentally sustainable and inclusive economic development. Develop the National Bioeconomy Strategy of the 6 partner States. Implement the National Bioeconomy Strategies in the EAC region. <p>Establishment of National and Regional bioeconomy advisory committee of the EASTECO.</p> <ul style="list-style-type: none"> Develop and operationalization of EAC Regional Bioeconomy Strategy Monitoring and Evaluation Framework. 	Y1-Y10	US\$1.5m	<ul style="list-style-type: none"> EASTECO Partner State Governments & MDAs Technical Steering Committee (TSC), EAC Regional Bioeconomy Forum EAC Organs and Institutions Regional Bioeconomy stakeholders Regional and International bioeconomy development organizations
Estimated Cost for EAC Regional Bioeconomy Implementation (spread over 10 year time horizon)				US\$86.5m	

