Strategy for Bioeconomy in East Africa

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Introduction

- Biolnovate Africa - a regional science & innovation-driven initiative stimulating a sustainable bioeconomy in eastern Africa.

- Supported by Sida & implemented by icipe (Cooperation Partners)
  - Countries: Burundi, Ethiopia, DR Congo, Kenya, Rwanda, South Sudan, Tanzania, & Uganda.


So far the largest and most active regional bioeconomy platform in Africa!
Eastern Africa context

The Eastern Africa context:

- 400m people (58% rural); 400bn GDP (2021; agric 33%); > 60% informal sector

- Depend directly on biological resources for food, fuel, housing, & medicine.
  - Bioresources are used in raw form; >40% is lost post harvest; >40% of biomass is disposed of as biological waste.

- Agro-processing is suboptimal and environmentally polluting.

- Use of scientific knowledge & talent in universities/research institutes to add social & economic value to biological resources and convert biowaste into useful substances will diversify the economy, create jobs, and alleviate poverty, while conserving biodiversity and reducing carbon emissions.
Table 1: Productive Sectors of the East African economy: % contribution to GDP in 2021

<table>
<thead>
<tr>
<th>Country</th>
<th>Popn (million)</th>
<th>GDP (US$bn)PPP</th>
<th>Industry*</th>
<th>Agriculture</th>
<th>Services</th>
<th>Manufacturing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burundi</td>
<td>12.60</td>
<td>2.78</td>
<td>10.6</td>
<td>28.7</td>
<td>44.8</td>
<td>09</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>120.3</td>
<td>111.27</td>
<td>21.6</td>
<td>37.6</td>
<td>36.3</td>
<td>05</td>
</tr>
<tr>
<td>Kenya</td>
<td>53.00</td>
<td>110.35</td>
<td>17.0</td>
<td>22.4</td>
<td>54.4</td>
<td>07</td>
</tr>
<tr>
<td>Rwanda</td>
<td>13.50</td>
<td>11.07</td>
<td>20.3</td>
<td>24.1</td>
<td>47.8</td>
<td>09</td>
</tr>
<tr>
<td>Tanzania</td>
<td>63.59</td>
<td>67.87</td>
<td>29.8</td>
<td>25.9</td>
<td>34.3</td>
<td>08</td>
</tr>
<tr>
<td>Uganda</td>
<td>45.85</td>
<td>40.53</td>
<td>27.1</td>
<td>23.8</td>
<td>41.8</td>
<td>16</td>
</tr>
</tbody>
</table>

*Mining, quarrying, manufacturing, construction & public works (water, electricity, gas)

https://data.worldbank.org/country
Bioeconomy mission

- To enable scientists in eastern Africa to translate biological based research outputs into practical uses in society through appropriate business models.
Alignment with regional priorities

- African Union Commission (2013/15)
- East African Community (2016)

- Education & scientific skills, modern agriculture, biodiversity conservation, climate resilient, social inclusion, economic growth, etc.
Key features of the East Africa bioeconomy

- Biologically based – relies on biological materials.
- Cross sectoral – bridges economic sectors.
- Systemic – involves diverse actors.
- Science driven (but also indigenous knowledge).
- Innovation driven – collaboration/co-creativity.
- Sustainability/circularity – aim for zero waste/emissions.
<table>
<thead>
<tr>
<th><strong>Sustainability pillars</strong></th>
<th><strong>Priority themes</strong></th>
<th><strong>Key activities</strong></th>
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</thead>
<tbody>
<tr>
<td>• Environmental sustainability</td>
<td>• Food security &amp; sustainable agriculture</td>
<td>• Better ways to improve primary production of commodities by farmers</td>
</tr>
<tr>
<td>• Climate change adaptation &amp; mitigation</td>
<td>• Health &amp; well being</td>
<td>• Value addition to primary produce and other biological materials (as off takers/market linkages)</td>
</tr>
<tr>
<td>• Sustainable production &amp; consumption</td>
<td>• Sustainable energy</td>
<td>• Biological waste conversion – from municipal and agro-industrial biowaste.</td>
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<tr>
<td></td>
<td>• Biologically based industries</td>
<td>• Biodiversity conservation /ecosystem services – ensure sustainable supply</td>
</tr>
</tbody>
</table>
Towards implementation: Regional conferences

Dr Kevit Desai, Permanent Secretary, Ministry of East African Community (EAC), Kenya, giving a closing statement at the 2nd Eastern Africa Bioeconomy Conference

- National bioeconomy policy dialogues (upcoming in October 2023 in Burundi)
Towards implementation: Knowledge products

Dr Sylvance Okoth, Executive Secretary of EASTECO, Eng. Steven Mlote, Deputy Secretary General, EAC, Dr. Julius Ecuru, head of Bionnovate Africa and SEI Executive Director Prof. Måns Nilsson launch the State of the Bioeconomy in Eastern Africa: 2022 report. Photo: Lawrence Nzuve / SEI.

23 June 2022, EAC Secretariat in Arusha, Tanzania
Towards implementation: value addition projects (1)

Improving nutrition

- BioBuu (K) Ltd providing more nutritious, environmentally friendly & affordable insect proteins feed supplement to millers/farmers. (Annual Sales (2022) US$100,000)

Managing Biowaste

- BIOCON (T) Ltd/EnvSol (T) Ltd, providing tailor made solutions for industrial wastewater management. Annual Sales (2022), US$ 200,000
- Guavay Co. (T) Ltd, providing nitrogen enhanced biofertilizer (Hakika™) to organic avocado growers/exporters Annual Sales (2022) US$200,000
- BioManagement of Coffee Waste (vermicompost) Annual Sales (2022) US$ 10,000

BioInnovate Africa - New products/ventures (2023)
Towards implementation: value addition projects (2)

- Other projects
  - Electricity from sugar cane bagasse
  - Food processing (fruits, vegetables, etc)
  - Biowaste conversion (biofertilisers, etc.)
  - Biocontrol (biopesticides, parasitoids, microbiomes, etc)
  - Insect proteins
  - Biopharmaceuticals
  - Biomaterials/biopackaging
• The East Africa regional bioeconomy strategy is the first of its kind in Africa, and second after the EU bioeconomy strategy.

• It’s useful for aligning bioeconomy investments to regional development needs and priorities.

• Encourages regional collaborations, and global partnerships for bioeconomy development that will help us live better lives in a healthy planet.
Thank you

BioInnovate Africa

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