



Why East Africa chose to develop a regional bioeconomy strategy

In 2019, seven countries in East Africa opted for the development of a bioeconomy strategy for the region. The aim is to use the rich biological resources of the continent in a sustainable way while promoting economic diversification. The innovative potential that this holds also became apparent in the response by scientists from Tanzania and Uganda to the advent of the coronavirus pandemic.

By Julius Ecuru

East Africa is endowed with plants, animals, insects and microorganisms (tiny living things which cannot be seen by the naked eye) of various kinds. This rich diversity of biological resources is a strong foundation for a bioeconomy. The term “bioeconomy” is widely understood in the region as the use of scientific knowledge to add social and economic value to biological resources in a sustainable way. This added value is expressed in healthier foods, safer medicines, useful substances from biological waste and other environmentally friendly processes in manufacturing, distribution and consumption of goods and services. The region chose to develop an innovation-driven bioeconomy strategy, the first of its kind in Africa,

which will ascertain priorities, build partnerships around shared goals and guide investment in a wide range of biological resources.

The recent coronavirus disease 2019 (COVID-19) pandemic, which first broke out in China in December 2019 and spread all over the world, has further highlighted the importance of having a resilient bioeconomy. As part of the response to the pandemic, a team of scientists in Tanzania and Uganda started to produce alcohol-based sanitisers from the fermentation of cassava peels and stalks of sweet sorghum, respectively. These materials are usually discarded as waste. Alcohol-based sanitisers having a concentration of alcohol above

60 per cent v/v (i.e. 60 per cent of the liquid is alcohol) are effective disinfectants, which kill microorganisms (e.g. viruses, bacteria and fungi). In an active bioeconomy, scientific ideas involving biological resources and the agility of scientists in responding to emerging situations such as disease outbreaks are vital assets for countries.

Seeking a low-emissions pathway from the start

Countries all over the world are gradually turning to biological resources as a means to reduce carbon dioxide and methane emissions, which

Ms Njeri, a fruit and vegetable vendor in Kenya. East Africa's rich diversity of biological resources is a strong foundation for a bioeconomy.

Photo: Valine Moraa



are responsible for global warming. These emissions arise from the use of fossil fuels like oil to power automobiles or make plastic materials, etc., and coal to generate electricity or produce cement for house-building. If people were to change the way they produce and consume these things and adopt biological-based alternatives, then emissions would drop, and the planet would be saved from potential catastrophic climatic effects of global warming. Regions like East Africa, which still have low carbon emission levels, can choose a growth and development pathway that circumvents the pitfalls of a fossil-driven economy. This pathway is a bioeconomy!

Developing an East African bioeconomy is attractive because the region has a rich biological resource base. It also has scientists who, when given the necessary support, are capable of harnessing knowledge from within and elsewhere in the world, to add value to these resources in a productive and sustainable way. The region has the fundamentals for growth. There is relative macroeconomic stability – markets are liberalised and fiscal policies are effective. A lot of investment has been made in security of persons and property. Infrastructure like roads and electricity are being built,

and many foreign companies are also investing in the region. Collectively, these factors have driven the region's GDP growth rate consistently above five per cent in the last decade, as data from the International Monetary Fund and African Development Bank show.

Going forward, the challenge is for the region to increase this growth rate to at least seven per cent per annum, if it is to realise its ambition of achieving upper middle-income status (where gross national income per capita is between 3,996 and 12,375 US dollars) within the next 30 years. To a large extent, this challenge can be addressed by diversifying sources of growth. Why does a bioeconomy offer more opportunities for economic diversification in the region?

Linking farmers to new value chains

Over 65 per cent of people in East Africa depend directly on biological resources for food, fuel, medicine and other uses. They use these biological resources in their raw form, and dispose of significant portions as biological waste. By adding value, numerous other uses of the biological resources can be found, e.g. biowaste can be turned into biofertilisers and energy, and high-value green chemicals can be recovered from the waste. These new uses bring new business prospects and jobs, thus diversifying the economy. With rising urbanising trends in the countries and the continent as a whole, farmers who produce or are custodians of most of the biological resources can be linked to new value chains that demand their produce.

It is in this regard that seven countries in East Africa (Burundi, Ethiopia, Kenya, Rwanda, South Sudan, Tanzania and Uganda) identified a need and chose to develop a regional innovation-driven bioeconomy strategy. Demand for the strategy received further impetus from a consensus at the Global Bioeconomy Summit 2018, which called on countries and regions to develop bioeconomy strategies that meet their unique development aspirations and priorities. Developing the regional bioeconomy strategy for East Africa began in 2019, and has already motivated several countries, e.g. Ethiopia, Uganda and Tanzania, to start developing their own national bioeconomy strategies. The regional strategy will enable countries to pool their resources to address shared regional priorities, while national strategies will deal with highly contextual needs and also be a vehicle for domesticating regionally agreed actions.

Stakeholders are contributing views on what the regional bioeconomy strategy for East Africa should look like and what it should address. But already there appears to be a growing recognition that the strategy should focus on increasing economic and social value of regionally traded biological-based goods and services, on converting biological waste into useful material (thus promoting circular production), and connecting national, regional and global biological-based value chains. There is also a growing appreciation that if properly implemented, the strategy would increase the region's capacity to fully participate in and benefit from the African Continental Free Trade Agreement, which was signed on the 21st March 2018, in Kigali, Rwanda.

Incentivising the informal sector and productive partnerships

Incentivising the informal sector, which currently dominates much of the businesses and makes up over 50 per cent of non-farm employment, should be a vital element of the strategy. Promoting bioeconomy clusters of innovation and entrepreneurial activities based on renewable biological resources is one way in which this can be done. The other element would be to support universities and research organisations in the region to work co-creatively with industry and government in moving biological-based ideas and inventions to the market. This is possible. It has already been demonstrated through regional initiatives like BioInnovate Africa that scientists from universities, research institutes and firms in the region can work collaboratively to add economic and social value to biological resources. These types of productive partnerships can be expanded with support from the region's governments and development partners. The scientists in Tanzania and Uganda, who used their knowledge involving biological resources to produce hand sanitisers in response to the COVID-19 situation, is only a glimpse of the wide latitude East Africa has to innovate using biological resources and contribute to a sustainable economy in the region.

Julius Ecuru, Ph.D., is head of BioInnovate Africa, a regional science and innovation-driven network in Eastern Africa, based at the International Centre of Insect Physiology and Ecology (icipe) in Nairobi, Kenya.

Contact: jecuru@icipe.org

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