

FORESTS NEWS

How would a forest-based circular bioeconomy in sub-Saharan Africa ensure local wellbeing?

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Woman carrying a solar panel near Yangambi, Democratic Republic of Congo. CIFOR/Axel Fassio

Economies do not adhere to “one-size fits all” approaches when it comes to who benefits. In the developing world, imbalances are especially evident where resources are extracted, exported and increasingly depleted, with value added elsewhere, as are the resulting profits.

One economic approach – termed the circular bioeconomy – is offering a different path. Centering on nature, it offers the potential to resolve resource depletion, support the environment and ensure greater local benefits. A new [paper](#) by the Center for International Forestry Research (CIFOR) looks into the strategy as applied in sub-Saharan Africa, reviewing the current research and the social impacts for people living with a lot of precarity.

The literature review focuses on the sub-sector of circular bioeconomy concepts in which forest materials are the key renewable resource, i.e., the “forest-based bioeconomy.” With circular bioeconomy approaches increasingly seen as a solution to industrial waste and emissions problems, the paper asks how such approaches are playing out for forest-dependent populations in sub-Saharan Africa.

The authors found that there is limited research on the topic, with most addressing more traditional forest bioeconomy activities and a sizable amount looking at the development of value chains. Positive social outcomes were detected in 45 percent of the abstracts reviewed, in the form of higher incomes, better access to education and improved land tenure rights, among others.

The paper concludes that forest-based bioeconomy approaches have the potential to improve well-being in sub-Saharan Africa, but “persistent forest sector challenges resulting from colonial inheritance” need to be addressed first.

The Social Element

Reviewing 360 peer-reviewed scientific studies published between 2000 and 2020 with a specific focus on the forest-based bioeconomy in sub-Saharan Africa, study author Sabrina Rosa searched for references to such social sustainability elements as land rights, food security and health. She flagged the forest sectors and bioeconomy elements that were most apparent in the literature, taking into account both “traditional” and “modern” forest activities, meaning actions ranging from fuelwood collection and logging to the use of forest biomass to create new, original products.

“Most bioeconomy strategies today are originating in the Global North and have a strong focus on technology and economic aspects, while elements of social sustainability are left aside,” said Rosa, who is an MSc student in Forest Bioeconomy Business and Policy at Finland’s [University of Helsinki](#).

“This study is important in addressing the social aspects, as leaving this important element out may constitute a risk for vulnerable and rural populations,” Rosa said.

Taken as a whole, the reviewed studies reflect the way forests are used on the ground – that the forest sector in sub-Saharan Africa is still largely informal and mostly traditional. Considering circular bioeconomy approaches and their focus on innovation, of the abstracts analyzed, 51 percent referred to traditional forest activities, with only 8 percent including elements of “new” forest uses. Studies addressing modern or emerging forest activities looked at issues like bioenergy, value chains, governance and economic policy instruments.

Recurring themes emerged in the research review, including the central role of non-timber forest products (NTFPs) as income generators, followed by analysis of value chain improvement and the importance of forests for livelihoods and wellbeing. But the CIFOR paper found that the analysis of social sustainability was less adequate.

“If social aspects of forest-based economic activities are being addressed in the literature, it is mostly to say, ‘We need to look at it’. But nobody’s actually investigating the problem of social effects directly,” said Christopher Martius, co-author of the paper and Bonn Hub Leader and Managing Director of CIFOR Germany.

“The big question in the literature review we’ve done is asking how forest-based circular economy activities affect local people’s well-being, their health, their access to food, the essential elements in life,” he added.

A total of 30 sub-Saharan African countries were represented in the publications reviewed, but only a few were represented in more than five. The most studied country was Ethiopia, followed by Tanzania and Cameroon, with research there focused on forest-dependent communities and rural populations and households.

Looking for solutions

Information about the outcomes of forest-based bioeconomy exposure was detectable in 66 percent of the abstracts reviewed. In 30 percent of the cases, the outcomes were positive, in 11 percent they were negative, and in 25 percent of the cases the outcomes were mixed. The positive outcomes were associated with higher incomes, improved inter and intragenerational benefit capture, better access to markets and education, and conservation of natural resources, among others. Negative outcomes were associated with loss of natural resources needed for subsistence

due to overexploitation, dispossession and displacement, inequalities in benefit sharing, gender issues, and elite capture.

The overlapping issues of poverty, land rights and access to food and fuel have implications for any novel economic approaches that include the use of nature, as the paper's findings show.

"For a forest-based bioeconomy to work in an equitable way, in a sustainable way, the problems from the layer below also need to be solved, as the forest industry is already heavily impacted by a lot of difficulties that are mostly linked to a political economy that derives from the colonial heritage," Rosa said.

So, there is a lot of work to do.

In the paper's look into the range of research on the topic, attempts to solve these challenges include initiatives such as tree planting to create alternative livelihood sources that would rely on the production of food and non-food products or for the carbon market. Other solutions could involve maximizing the value of forest products so that they can compete with the profits from illegal activities; fuelwood farming as a way to produce energy from biomass in a sustainable way and contribute to incomes; and community forestry as a way to foster social innovation, enable diversification and attract investment. Also, there could be needed reforms to legalize markets and land tenure.

Circular bioeconomy advocates point to a host of innovations that would foster more sustainable ways of living, from the use of wood, for example in textiles and construction, to the processing of bio-waste into new, usable materials.

How this would manifest in sub-Saharan Africa and how it would affect income and job creation is not prominent in the research, according to the paper.

Technology transfer?

"You see all this innovation happening in the Global North," Martius said. "And in Africa, if you talk about bio-energy, people want to move away from their charcoal-dependence – it's polluting, it's back-breaking labor, it feels too backwater. We need to get out of this trap where North America and Europe move ahead, and Africa is again left behind with the current innovations and only provides the raw materials. Bio-based approaches are the future, not backwater."

Circular bioeconomy approaches must be designed with this awareness, creating a balance that does not currently exist with an economy that takes from the developing world and leaves behind waste, making products and profits abroad. The paper notes that the interests of people in sub-Saharan Africa should be part of circular bioeconomy designs, as opposed to planning that may only serve the interests of the Global North for biomass.

In Europe, the European Union Bioeconomy Strategy prompted a growing number of member states to develop dedicated national and regional bioeconomy strategies and initiatives. But in sub-Saharan Africa, only South Africa currently has a dedicated national bioeconomy strategy.

Ensuring forest-based circular bioeconomy approaches become more mainstream in sub-Saharan Africa would include, then, more national strategies, as well as creating new ways of cultivating trees and plants, the re-packaging of charcoal dust for use as fuel and the use of processed wood for sustainable construction.

“A circular bioeconomy includes using the raw materials coming from forests and trees and using the technology,” Martius said. “But technology is only part of the solution, and in sub-Saharan Africa it may take a different shape. You also need to get the other things right – both the social side and the income side. You cannot leave people behind with either side.”

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