

Activity Group 4 – Towards Sustainable Modern Wood Energy Development

Info note on expansion of the AG4 theme to woody biomass for forest landscape restoration (FLR) and sustainable livelihoods

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Traditional wood energy is still the primary source of energy for many households in some parts of the world. The situation is particularly prominent in sub-Saharan Africa (SSA), where households primarily rely on traditional biomass to fulfil their energy needs. For example, in Togo, 93 percent of the population rely on wood energy for cooking and heating purposes, and the current demand for woody biomass for energy in the country is 2.5 times higher than the actual sustainable offer¹.

The unsustainable wood energy value chain for traditional wood energy production and use has many impacts to be considered. It has debilitating social issues such as the health problems caused by household air pollution, time spent collecting biomass, and risk of injury or violence during fuel gathering. Limited access to modern energy services also impacts on livelihoods. As well as social and economic issues, it also leads to environmental problems, such as air pollution and greenhouse gas emissions. Furthermore, as demand increases, the sustainable supply of fuelwood cannot keep up, leading to deforestation and landscape degradation, reduced biodiversity and soil degradation.

Forest landscape restoration (FLR) is the recovery of forest landscapes through the restoration of ecological functionality. As its name suggests, its focus is at the landscape level, taking into consideration the multiple ecological, social and economic functions of landscapes and the associated ecosystem goods and services. The concepts of FLR are applied all over the world and approaches are tailored to the local contexts. SSA is also a region of intense focus for FLR, due to the threat of desertification and the negative impacts on livelihoods brought about by degraded ecosystems and soils. Each year, around 6 MHa of productive land are lost to degradation. AFR100 is a pan-African, country-led initiative that seeks to address this by bringing 100 million hectares of degraded lands into restoration by 2030.

Therefore, the wood energy value chain and FLR are inherently interlinked, and it is important to understand the opportunities for sustainable wood energy production and use to contribute positively to FLR.

Improving the sustainability of the wood energy value chain

Improving the sustainability of the wood energy value chain can reduce pressures on natural forests through better management practices and improved technologies. Indeed, the sustainability of the wood energy can be improved across the value chain, from biomass production and transformation to the production and use of bioenergy and its by-products. There are a multitude of opportunities in this regard:

- For biomass production, sustainable forest management is an important first step, including the establishment of community forests, as well as the conservation of protected areas. Plantations are an opportunity to remove the pressures on natural forests whilst maintaining biomass supply. There is also the opportunity to produce biomass on currently degraded lands; these plantations could restore lands,

¹ Data from Ministry of the Environment and Forest Resources (MERF), Togo (2017)

provide employment, ecosystem services and carbon storage while also supplying modern bioenergy services². Agroforestry is also an attractive option.

- At the biomass transformation stage, improved feedstocks (such as wood pellets, chips or briquettes) could increase the efficiency of the value chain, thus reducing pressures on forests. These feedstocks could also be produced from wood ‘wastes’ such as those produced from the timber sawing industry, thus further improving the sustainability of the system.
- The sustainability of the wood energy value chain can also be enhanced through the use of improved bioenergy technologies. For traditional bioenergy, this includes both the methods of charcoal production and the use of fuelwood in homes with improved cookstoves. However, woody biomass can also be used to provide modern energy services through e.g. the production of electricity in co-generation plants or the production of syngas through gasification technologies.
- Finally, the use of by-products can also enhance the sustainability of the system. For example, the biochar produced as a by-product of the gasification process can be used as a soil amendment to boost soil fertility, increase agricultural yields and therefore improve livelihoods.

Reduce pressures on forest resources through the use of alternative biomass

As well as options to improve the sustainability of the wood energy value chain itself, there are also other options for bioenergy production from other sources that reduce the pressures on forest resources.

These include: the use of other biomass sources such as waste and residues from agriculture, agro-industry or urban activities; and the use of other bioenergy production technologies such as anaerobic digestion.

Role of GBEP and AG4

During the 15th meeting of the Working Group on Capacity Building, it was decided that GBEP could further explore ‘woody biomass for FLR and sustainable livelihoods’ under AG4. Therefore, Partners and Observers were asked to express renewed interest in AG4 and in particular on this potential expansion of its thematic area. Discussions will initially focus on the role of GBEP in this area and potential activities that could be carried out. An e-discussion will be organized with a view to have a first round of comments/suggestions regarding potential scope expansion and concrete activities to be included into the current AG4 scope and programme of work.

Some GBEP activities in this regard have already taken place. For instance, a [discussion forum](#) was organized by GBEP in collaboration with GIZ, on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ), and with IEA Bioenergy. It was held in the context of the Global Landscape Forum in Bonn (1-2 December 2018) and it discussed the “Contribution of a sustainable wood energy production approach to Forest Landscape Restoration (FLR) in Sub-Saharan Africa (SSA)”. The event contributed to improve knowledge and capacities related to sustainable local production and use of wood energy as well as on sound planning for sustainable landscapes and rural development.

² IRENA (2017), *Bioenergy from degraded land in Africa: Sustainable and technical potential under Bonn Challenge pledges*, International Renewable Energy Agency, Abu Dhabi.