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Enhancing landscape connectivity through agroforests: The case of Gedeo’s agroforests in Ethiopia

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Abstract

The Gedeo agroforestry cultural landscape in Ethiopia is recognised as a leading example of sustainable agroforestry practices. It mimics and resembles natural forest, characterised by vertically and horizontally diverse composition, structure, and functionality that contribute to on-farm conservation, environmental well-being, and livelihood support systems. Numerous studies have highlighted the positive impacts of agroforests in the landscape on *circa situm* biodiversity conservation, implying biodiversity conservation through utilisation. Agroforests provide additional habitats for species that are sensitive to disturbance, conserve the gene pools of native tree species, and enhance biodiversity. They also act as buffers against forest degradation and deforestation in the surrounding natural habitats as well as connecting fragmented habitats for animal and plant species through the creation of corridors and stepping stones. Agroforests in the Gedeo landscape serve as important havens for preserving high levels of diversity. The smallholder agroforests in the region play a crucial role in conserving tropical woody plant species as *circa situm* reservoirs of biodiversity in agricultural environments. Previous studies have shown that the diverse species composition within agroforests contributes significantly to biomass and carbon storage, which in turn helps to mitigate climate change. For the Gedeo people, agroforestry is not just a supplementary livelihood activity but rather a mainstay. In summary, the Gedeo agroforests play a significant role in enhancing landscape connectivity and contribute to the integrity and sustainability of the agricultural production system. However, the Gedeo agroforests also face challenges including land degradation and fragmentation, the emergence of lucrative monoculture cash crops, climate change, limited market access, lack of financial resources, and insufficient technical knowledge and training.

Keywords: Agroforest, *circa situm* conservation, Gedeo landscape, landscape connectivity