

A circularity framework to support mixed farming and silvopastoral systems

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Synergising the agendas and actions of circular economy, climate change mitigation and sustainable agricultural will help to limit the effects of climate change and modify our current extractive production systems. However, there are a number of challenges for integrating the concept of circularity within the context of sustainable and climate neutral agriculture. We reviewed the available scientific literature for concepts, definitions and strategies relating to: circular agriculture (CA), agricultural sustainability and climate change mitigation and adaptation. From this we developed a conceptual CA framework applicable to mixed farming and silvopastoral systems. A comprehensive vision and scope for CA needs to include at least four major strategies: narrowing loops, closing loops, slowing down resource use and regenerative practices. Operationalizing these broad CA strategies with specific indicators, based on life cycle thinking, can support more holistic design, planning and adoption of circular activities that benefit farm sustainability. We therefore, applied the CA framework to the SMART-Farm Tool (Schader et al., 2016), to identify how well current farm level sustainability tools can capture broader CA effects.

The developed conceptual framework contributes to advancing the discussion on CA and to identifying how and if on-farm practices are circular. It can also help to determine the contribution of such activities to sustainability and climate change mitigation strategies. This will be particularly useful for mixed farming and silvopastoral systems.

Keywords: circular agriculture, climate change mitigation, mixed farming systems

References:

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