LANDMARC has received funding from the European Unions' Horizon2020 Grant Agreement No 869367

SUSTAINABLE COFFEE AGROFORESTRY

Increasing carbon storage in soils and trees and decreasing emissions from fertilizer use and deforestation in coffee landscapes of Vietnam

About the initiative

The Central Highlands of Vietnam is the biggest Robusta coffee producer in the world with approx. 600,000 hectares of coffee, predominantly produced in high-input monoculture systems. Sustainable farming practices in combination with intercropping and agroforestry systems have received increased interest leading to substantial efforts by an interdisciplinary consortium of national and international partners to design sustainable farming systems. The LANDMARC H2020 research project on land-based negative emissions solutions will explore the potential of these farming system practices to store carbon in soils and trees, while reducing emissions.

Focus area

The activities are conducted in three districts of the Central Highlands: Krong Nang in Dak Lak, Dak Song in Dak Nong and Dak Doa in Gia Lai. The benefits of a combination of soil remediation techniques (liming and biochar application), bioinoculants, good farming practices and associated multipurpose trees (i.e. fruits, timber, nitrogen fixing) are assessed in 5-10 experimental trials per district. Value chain approaches and policies are explored that facilitate adoption of improved practices at scale, while landscape approaches are evaluated that reconcile sustainability at farm and landscape level.

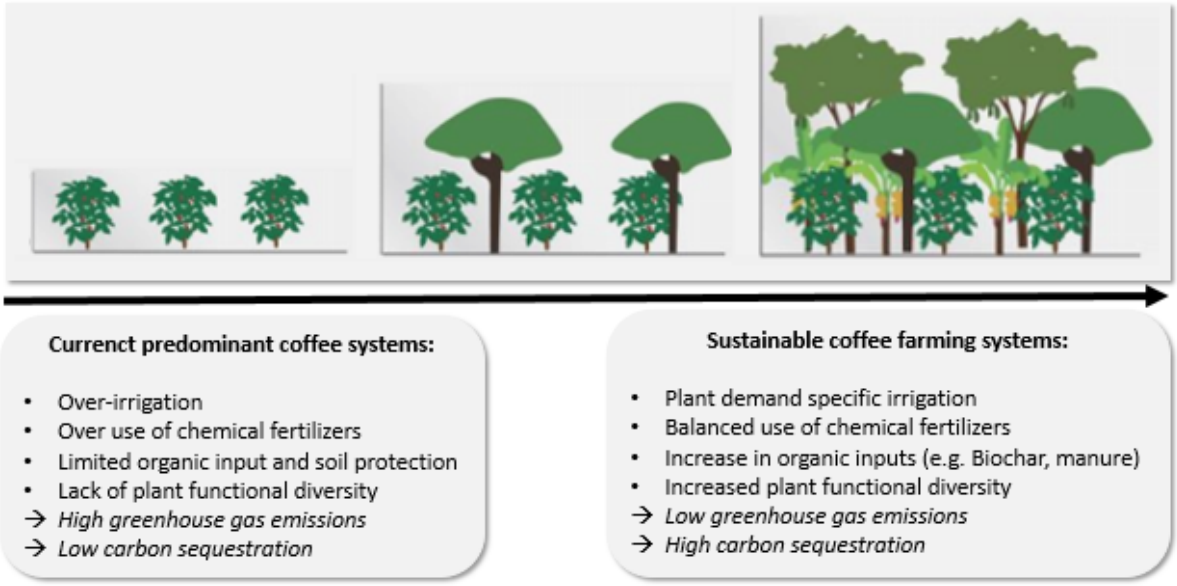

Figure 1: Land-use transition pathways in Robusta coffee areas of Vietnam. Association of coffee with multipurpose trees, soil remediation techniques (i.e. biochar) and good farming practices.

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What LANDMARC offers

LANDMARC will add value to existing activities in coffee landscapes of the Central Highlands in Vietnam by:

1. **Assessing LMT potential:** The feasibility of the land-based mitigation technologies (LMTs), i.e. scaling of agroforestry and biochar, will be assessed with stakeholders in order to identify barriers to adoption and conducive enabling environments. Together with stakeholders, we will co-develop scenarios that exemplify plausible scaling pathways. Based on the identified pathways the carbon sequestration potential will be modelled.
2. **Climate risk assessment:** Climate change related increase in temperature, changing precipitation patterns and increasing frequency of climate extremes is threatening coffee production globally. Agroforestry systems are not only an important LMT strategy but also key in adapting coffee to changes in climate. Trade-offs and synergies between climate change adaptation and mitigation will be modelled for different future climate scenarios in order to inform different pathways of climate resilient coffee and related LMTs. Together with local stakeholders this will enable the development of climate risk management plans.
3. **Regional and global scaling:** Identifying LMT portfolios and assessing their potential at national, continental and global scales together with various stakeholders and through alignment with regional and global initiatives. Integration of scenario construction efforts from multiple scales will be used and the LMTs of the Vietnamese case study contextualized within a broader assessment.

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