



# Editorial: Agroforestry With Perennial Crops, and the Contradictions Between Commodity Production and Local Benefits

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## Editorial on the Research Topic

### Agroforestry With Perennial Crops, and the Contradictions Between Commodity Production and Local Benefits

Agroforestry systems (AFS) stand out as diversity management units with multiple social, economic, and environmental benefits. However, producing local and global benefits may generate contradictions when trying to reconcile competing claims, especially AFS with perennial crops used as commodities. Issues as broad as the lifestyles of local people, the demands of global markets, and the trends of global food systems are at stake and may be compromised when narrow frameworks are in use. The objective of this Research Topic was to compile articles focused on the contribution of AFS with perennial crops for provisioning goods and services and discuss the tensions that originate between maintaining local benefits, conserving natural resources, and producing commodities.

AFS with perennial crops are complex systems that combine different species of plants, are characterized by multiple strata of vegetation, and may also integrate animals. Examples of these systems are those focused on cocoa, coffee, home gardens, vanilla, cardamom, and rubber. Usually, these are traditional systems that have been based on or adapted from ancient cultures. They are also recognized for their importance for biodiversity conservation, as well as for the maintenance of other services such as water, soil, and pollinators, and including other provisioning, regulating, supporting, and cultural benefits. However, market demands for AFS production has increased over recent decades leading to important changes. The latter has given way to important transformations regarding their structure, diversity, and functions, usually trending toward simplification with consequences at different levels.

These systems are mostly present in the tropics and subtropics, where family households use multiple land management strategies. Historically, they have depended upon different agroecosystems containing local staple foods with superb nutritional qualities and perennials that do not need to be replanted. They also include valuable plants used for fuel, fibers, medicines, condiments, and colorants. The higher the complexity of the AFS, the higher number of local benefits (**Figure 1**). In this issue, Kreitzman et al. emphasize the importance of these systems as sources of perennial staple crops with great nutritional qualities and high yields. They illustrate

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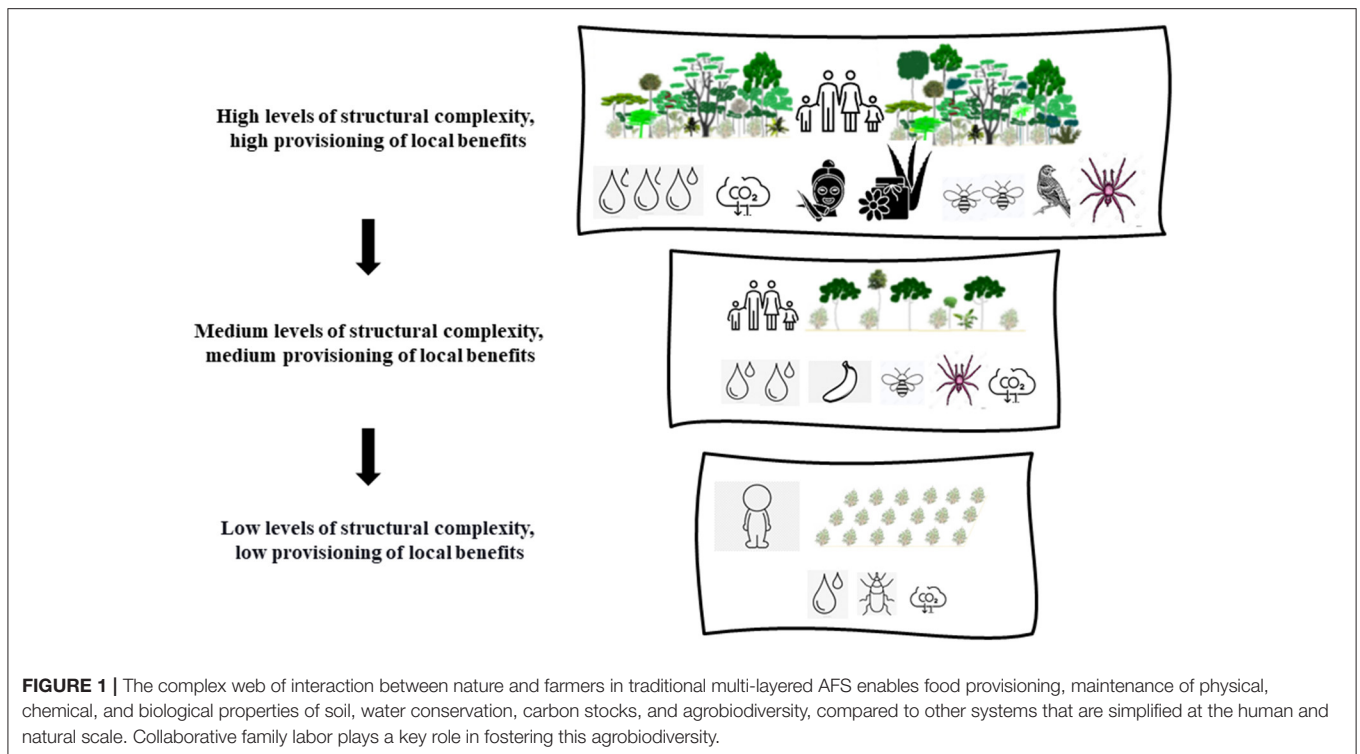
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nutritious features and of common nuts, oils, grains, fruits, tubers, leafy vegetables and edible stems, medicinal plants, grains, stimulant drinks, and plants with other forage and industrial uses, can be produced in AFS. These resources are essential for peoples' diet and supporting local cultures, whose cultivation in AFS can be considered win-win solutions for food production and ecosystem conservation.

The availability of resources in some of these systems is a cornerstone for household food security. Nevertheless, through their adaptation as sources of commodity-oriented goods, some of these systems are losing this economic, social, and ecological potential, as pointed out by Jemal et al. studying home gardens, multistorey-coffee-systems, and multipurpose-trees-on-farmlands in Ethiopia. As pointed out, the lives and decisions of families that depend on these AFS's are severely affected by global markets, climate change, and the incidence of pests and diseases. Millions of producers, workers, and families are left in vulnerable situations, losing local benefits, and compromising the environment. The complexity of how agroforestry contributes to household food security is a crucial aspect of the understanding. It is often not straightforward in the literature since most studies addressing the potential role of agroforestry on rural household food security lack specificity and empirical evidence.

On the other hand, agricultural intensification has not shown an undisputable profit increase. It depends on many additional drivers, as highlighted by some authors (Orozco-Aguilar et al.; Haggart et al.). Examples from different countries show that it is possible to reconcile production and conservation, as illustrated by coffee farmers who adapt AF shaded coffee to allow the output for commodity yields and other additional benefits and supports.

Authors also highlight the need that producers have regarding research to help them make informed decisions to achieve the sustainability of their systems and livelihoods. As Ruiz-de-Oña and Merlin Uribe indicate, if public, institutional, or private recommendations ignore the local socio-ecological conditions, it will probably bring unwanted consequences and new challenges for adaptation, production, and household reproduction in their study area.

In sum, authors in this collection show different experiences of local benefits in AFS with perennial crops in African and Latin American countries. These systems must be valued, promoted, and supported in situated contexts that combine production, conservation, and culture. These contributions are relevant since they analyze the issue from varying approaches that acknowledge their complexity at global and local levels.

## AUTHOR CONTRIBUTIONS

LS-P proposed and discussed with co-authors the main idea of this editorial article, summarized the contributions of the articles compiled in the Research Topic Agroforestry with perennial crops, and the contradictions between commodity production and local benefits. LS-P wrote the primary draft of the manuscript and integrated all corrections and additions. AM, IB, and LP-B discussed the main ideas of this editorial article, corrected, and added new views based on their work as co-editors of the above mentioned topic. All authors contributed to the article and approved the submitted version.

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