Adapting Successional Agroforestry to a European context with collaborative methods

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Introduction
In the context of climate change and declining fossil fuel reserves, it is important to experiment with new agricultural systems [3]. The Successional Agroforestry System (SAF) has been developed in Brazil with the aim to restore degraded land and at the same time create a diverse and productive agroecosystem which provides a livelihood for farmers [1,2]. Some European agroforestry systems such as "forest gardens" [4,6] share similarities with successional agroforestry systems. This poster presents SAF and an ongoing research with farmers in Southern France.

What is SAF? Successional agroforestry draws inspiration from the processes of species succession related to soil and climatic conditions, and attempts to mimic the functioning of forest ecosystems

Core principles of SAF [5]
- A mix of species which cover totally or partly the strata and the life cycles from annual species to trees
- A quick accumulation of organic matter using pruning and systematic trimming of some species
- Evolution of the plant communities and of the main harvestable crops (photos 1, 2 and 3)

Aims of the research
So far, forest gardens have not been developed for professional farming. Drawing inspiration from SAF, a project was initiated to develop a participatory methodology for the design of larger scale multi-strata agroforestry systems with farmers. This research has three aims:
- To develop a participatory methodology for the design of larger scale complex agroforestry systems with farmers in France
- To identify successful combinations of species and management practices taking in account wild animal control and amount of work
- To analyse the performance of chestnut tree installation using SAF compared with traditional planting

Research approach and tools used
Collaborative and bottom-up research with the aim of creating collective intelligence
- Participatory observation
- Regular group discussions (Photo 5)
- Collective work (Photo 6)
- In-depth interviews
- Visualisation methods (Figure 1 is the first overview of a common work)

Photo 3: Approximately 15 year old SAF plot on the farm of Jostok Mint in Savigny (Belgium). The dominating crops are coffee, cacao, oranges, palm fruit and timber. Before being diversified, this farm had been an orange tree monoculture plantation

Photo 4: Old part of farmer Joël’s garden (Southern France). Fruit trees and berries were planted in a vegetable garden. Overtime, this garden turned into an fruit-berries orchard

Photo 6: Visit of a new practice’s experiment at the association’s tree nursery

Figure 1: Draft table of the successional stages and strata of some of the plants that the farmers in Arligue, France, intend to use in their SAF.

In this context strata is used as a combination of height of the plant and demand for light. Successional stage is used as a combination of plants’ life-cycle and appearance in the succession of system. Design adapted from [5].