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Complexity of agroforestry cropping systems in the undergrowth of Guadeloupe

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In this study, SYAPROVAG and its partners in the VALAB initiative (Integrated ecosystemic valorization of the agrobiodiversity in the forest of Guadeloupe) surveyed the current diversity of complex agroforestry cropping systems in the forest undergrowth of Guadeloupe.
For more than 3 centuries, Guadeloupeans cultivate many species in the undergrowth. High value-added heritage crops such as vanilla, coffee and cocoa, which can be classified as high quality and exportable, can be distinguished from other food, fruit, aromatic or medicinal crops intended for local households. All these species are cultivated in the heart of the natural rain forest, in complex agroforestry systems (AFS), the associated spontaneous forest species serving sometimes as shading, sometimes as support for cultivated species such as vanilla (*Vanilla planifolia* and *Vanilla pompona*) or the different yams (*Dioscorea* ssp) when they are not valued directly for some of these (production of various oils and resins) such as red wood carapate (*Amanoa caribea*), incense wood or white oak (*Dacrydes exelcasa*).
Five main AFS have been identified in the Guadeloupe forests, a secular endogenous construction that has been produced by the history of the archipelago, with today two main orientations: the AFS based on heritage crops only on the one hand, and those combining heritage crops and food crops, accounting for 5 to more than 20 cultivated species, current declensions of forest gardens that tend to disappear.
These various AFS are characterized by several common points. First of all, cropping techniques come from ancient know-how. Thus, chemicals and mechanization are missing. As a result, these systems are respectful of the environment and contribute to the conservation or the improvement of the biodiversity of the forest area. On the other hand, the labor intensity of these agroecosystems, coupled with the high cost of labor, limit the area cultivated by asset and the productivity of land and labor. On farm processing of high value-added crops for niche markets, or direct sales, are strategies developed to overcome this structural constraint by increasing income generation.
Overall, it remains difficult today to live only with these AFS in Guadeloupe. Only the diversification of individual activities (pluriactivity) and / or the diversification of farms activities (agro-processing, agri-tourism ...) make it possible to make viable these systems of activity that nevertheless attract many candidates for farming installation.

Keywords: Cropping systems, undergrowth, Guadeloupe, farms viability, added value.

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