Insights for Optimizing the Cassava Value Chain and Scaling Adoption of the Acacia-Cassava Agroforestry System in the Batéké Plateau Savannas (Republic of Congo)

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Agroforestry systems (AFS) integrating acacia (*Acacia auriculiformis*) and cassava (*Manihot esculenta*) offer sustainable alternatives to traditional slash-and-burn agriculture in Central Africa's degraded savannas. This study evaluates the socio-economic performance of the cassava value chain (VC) from the perspective of scaling its adoption on the Batéké plateau. A survey of cassava producers from the traditional slash-and-burn system (TS) and from two AFS models (the partnership and the village AFS models), was carried out. Cassava producers, processors, and traders were surveyed, resulting in a total of 105 stakeholders. Focus group discussions and direct observations were also conducted to cross-validate the collected data. The profitability of cassava-related activities across the three value-chain steps was assessed and compared in terms of net margin. Factors negatively impacting activities across the investigated VC steps were identified, and the adoption drivers and challenges of AFS practices at the production step were documented in particular. Results showed positive margins at the production level across all investigated cropping systems, with the partnership AFS model outperforming the village model and the TS (highest profitability, 0.59 margin-to-cost ratio) due to cost-sharing by the SPF2B company. Processors and traders also achieved significant margins, though constrained by artisanal methods and market inefficiencies. In particular, wholesalers achieved the highest profitability among the investigated cassava VC stakeholders. Identified drivers of AFS adoption included cost reductions in the partnership model; knowledge/ awareness of ecological and economic benefits; and land tenure security in the village model. However, these AFS adoption drivers were challenged by the following key constraints: (i) inadequate extension services and (ii) fears of cassava yield decline. Other key constraints identified across the cassava VC included the reliance on traditional cassava varieties, limited processing equipment (lack or inefficiency), and marketing challenges. Recommendations include a robust extension program that encompasses the dissemination of improved varieties and the promotion of AFS practices. Incitative incentives, such as institutional supports and the vulgarization of enhanced/modern processing infrastructure to optimize the cassava VC, or grouping strategies (cooperative creation and support) to scale the AFS adoption, could contribute to sustainable development in the region.

Keywords: Agroforestry, cassava, Acacia, value Chain, Socio-economic analysis, Batéké Plateau, Republic of Congo.