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“Filling gaps and removing traps
for sustainable resource management”

Towards Integrated Soil Fertility Management (ISFM) Practices to Increase Cocoa Productivity in Cameroon

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Abstract

Africa supplies most of the world cocoa, but yields remain low. ISFM practices are required to increase cocoa productivity in Africa. Peoples' perceptions, closely coupled with their knowledge, are key in explaining their behaviour. Little is known on how cocoa farmers understand and manage soil fertility, and view its importance for achieving high yield. We address this gap by providing data from a survey of 120 Cameroonian cocoa farmers equally divided over two cocoa production basins with distinct predominant vegetation and mean annual rainfall: Mbam-and-Inoubou (low-shrub-savannah and 1300 mm), and Mvila (humid dense forest and 1650 mm). We found that most farmers agreed or strongly agreed that high yields (90%), dark colour (85%), easy ploughing (82%), specific plant species presence (80%), and diverse-and-abundant vegetation (79%) indicate a fertile soil. Respectively 30% and 13% of farmers in Mbam-and-Inoubou and Mvila consider soil fertility low or very low. 100%, 40%, 34%, 16% and 14% of farmers respectively used crop residues, tree planting, mineral fertilisers, compost and manure. More farmers in Mbam-and-Inoubou than in Mvila used manure (20% and 7%, $p = 0.03$) and mineral fertilisers (47% and 20%, $p = 0.002$). To justify the non-use of mineral fertilisers, limited accessibility (52%), “satisfying soil fertility” (23%), and lack of knowledge (15%) were cited. Regarding organic fertilisers (manure and compost), lack of knowledge, labour requirement, limited accessibility, and “satisfying soil fertility” were cited by farmers respectively 42.5%, 24.5%, 23.5% and 9.5% of times. Furthermore, farmers view SFM as the least important cocoa farming practices for high yields; SFM practices scoring on average 2.92 compared to 4.27 out of 5 for the other. The findings suggest that soil fertility perceptions, inputs access, and local habits influence farmers' SFM practices. Farmers combine different practices, but lack knowledge on the optimal practices combination for high yield. The authors recommend to raise farmers' awareness on the need to ‘continuously feed cocoa trees’; move towards ISFM practices by combining fertilisers uses and good agricultural practices taking into account local conditions. Furthermore, it is essential to think about measures that improve inputs access and returns on ISFM investment.

Keywords: Adoption, Africa, cocoa, good agricultural practices, indicators, intensification, knowledge, soil fertility