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Sustainable cocoa agroforestry in Côte d’Ivoire: Enhancing organic fertilisation for upgraded nature’s contributions to people

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Abstract

The EU’s recent ambitions to conserve natural rain forests by banning imports from deforested areas urges local production systems to adapt. In Côte d’Ivoire, increased organic fertilisation has been identified as suitable solution for adjusting traditionally transient cocoa farming systems. Not only can organic fertilisation circumvent ongoing deforestation, but possible simultaneous positive effects on soil and plant health, yields and community well-being are registered. Nonetheless, its application in Côte d’Ivoire’s cocoa production remains scarce and must be enhanced. This study aimed at (1) identifying behaviour-underlying reasons for the low levels of organic fertilisation in Côte d’Ivoire’s cocoa production, and (2) finding ways to boost its application while maximising related Nature’s Contributions to People. Q-methodology was applied to identify prevalent attitudes shaping fertilisation behaviour in cocoa farming in southeast Côte d’Ivoire among a diverse group of 39 stakeholders. Participants’ comparative ranking of 40 statements about fertilisation from “most agreed” to “least agreed” and subsequent commenting helped to display their personal perceptions. Factor analysis and qualitative evaluation of all perceptions revealed three common viewpoints explaining 43 % of the study variance. “Informed status-quo defenders” overly strive for profitability and consider low availability of commercial organic fertilisers a major constraint. “Green-minded optimists” see issues in insufficient cooperation and organisation and place sustainability as their highest farming priority. The group of “open-minded autonomists” identifies a major obstacle in limited knowledge and accompaniment of farmers. Highly valuing their independence this group follows a path of subsistence agroforestry. Evaluating these perceptions’ compatibility with existing fertiliser options’ properties helped to identify ways to enhance organic fertilisation and related Nature’s contributions to People. A) Adapting training and knowledge dissemination, b) increasing cooperation, and c) tailoring economic incentives are recommended as suitable areas of action. Aligning fertilisers’ properties with stakeholders’ needs, they can induce higher application rates and realise elevated Nature’s Contributions to People while obeying the EU’s deforestation ban. Applying similar approaches in different conservation contexts may be likewise useful to make sustainable practices more appealing to target audiences. This can assure more rapid and effective compliance with the future’s proposedly increasing needs for conservation and sustainability efforts.

Keywords: Cocoa agroforestry, individual behaviour, nature’s contributions to people, organic fertiliser, policy recommendations, Q-methodology, sustainability