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Agroecology and Organic Coffee: Where Does the Organic Matter Come From? A Resource Accounting Approach

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Abstract

The adjectives organic and agrocological are often used synonymously. Yet, the current certification for organic products does not consider several aspects that make up agroecology, and especially misses out on systemic dynamics and cycling issues on the farm. In other words, an agroecological agricultural system is potentially more tightly closed than an organic agricultural system.

From a metabolic point of view, organic systems may therefore be just as dependent as conventional systems on the input of matter. The matter being not synthetic but rather organic matter, the enrichment of an organic system can be coupled with the depleting of another resource. To the least, the maintenance of the organic system may be dependent on the existence of an external but coupled source of organic matter.

The paper analyses farming systems from a metabolic perspective and evaluates their sustainability but also their agroecological character. Our study characterises the metabolism of 5 farms producing coffee in intercrop with banana, chosen among a large sample of farms known from previous research in the Mount Elgon, Uganda. The 5 farms are representative of 3 groups: organic coffee producers, conventional coffee producers and low-input coffee producers. The accounting of material, energy and financial flows through the different production systems provides answers the following questions, all strongly related to agroecological characteristics: How dependent are the farms on material and energy inputs from outside? How related are these with financial flows and funds? How efficient are the farms? And how regenerative are they to their environment?

Our findings suggest that through its maintained reliance on external inputs, the organic system shows some metabolic similarities with the conventional system. Much of the organic material needed to obtain good organic coffee yields is imported from distantly accessible savannahs. The reliance on external inputs rather than cycling also has social implications as access to external inputs seem conditional to the wealth of the farm.

Our ability to assess agroecological features of farming systems and their relationship to the embedded ecological and institutional landscape, via the metabolic perspective, will increase our capacity to design sustainable farming systems in the future.

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