



Tropentag, September 14-16, 2022, hybrid conference

“Can agroecological farming feed the world?
Farmers’ and academia’s views”

Indicators of soil quality, health and cultivation environment in an agroecological cropping system

AGOSTINHO DIRCEU DIDONET¹, GLAYS RODRIGUES MATOS¹, ALVARO GONÇALO RODRIGUES²,
ALCIDO ELENOR WANDER¹

¹*Brazilian Agricultural Research Corporation (EMBRAPA), Brazil*

²*Emater Goiás, Brazil*

Abstract

The initial validation of the indicators was carried out on small scale family farms linked to an association of agroecological producers in municipalities around Anapolis, Goiás state, Brazil. To validate, train and encourage use by the producers, we sought to identify and quantify the current state of soil conservation and the visual health status of crops and vegetation used in the participating farms. The quite diversified production of the farms used to validate the indicators involves fruits, vegetables, eggs and derivatives of honey, sugar cane and cow milk, all produced using agroecological principles. Farmers often use fallow and crop rotation, and the crop choices consider regional market opportunities, local farmers’ markets, and digital channels (virtual delivery market). The indicators can provide important information about the agroecosystem and the relationships and integrations between management practices and the sustainability of farms. Once validated, they will make it possible to verify, quantify, visualise, and compare the adopted management practices among farms, and facilitate the choice of the most appropriate ones, according to the available resources. The initial validation of the indicators evidenced the need to include soil cover crops as green manure to manage the farmers’ cropping systems. Using soil improvement and conservation practices were also identified. And the need to develop alternatives for coexistence with weeds as an essential quantified demand. The indicators used in the initial validation made it possible to highlight, evaluate and quantify sustainability in most farms. It was demonstrated that soil conservation is the activity in which farmers focus the most care, highlighting the importance of management practices to control soil erosion and water use.

Keywords: Agroecological farming, crop rotation, diversification, family farming, horticultural production, sustainability indicators