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Tailoring agroecological practices to the family farm in cotton zone: unveiling farms’ constraints and motivation

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Abstract

The transition to more sustainable cotton-based production systems through the adoption of agroecological practices has become urgent. Despite policies designed to promote the uptake of sustainable cotton-based cropping systems, adoption remains low.

We suggest that placing farmers at the center, while accounting for both farm- and system-level factors, can help identify the barriers and facilitators to the uptake of agroecological practices. Using the framework of innovation characteristics from the farmer’s perspective, we investigated how, as experts in their bounded environment, farmers choose and implement agroecological practices and their motivations.

A survey was conducted on 192 farm households that had adopted a set of practices. We collected data concerning farm structural characteristics, their resource endowment, and five criteria related to the attributes of the practices. Farm diversity and agroecological practice classification were constructed using a statistical typology, and we analysed the relationship between them. Our typologies distinguished five types of farm households and four types of agroecological practices, ranging from neutral and simple innovations to risky, complex, and resource-intensive practices.

Although we expected to find that smallholders intensified their adoption more, the study revealed that there is no specific practice type tied to each farm household type. However, some practices show greater adoption potential than others. Thus, market-oriented larger-scale farms tend to adopt more resource-constrained practices. In addition, regardless of farm type, farmers’ motivations for implementing agroecological practices are primarily driven by the search for additional yield rather than environmental concerns. However, improving social status appears important for medium-sized diversified farms.

These diverse adoption patterns call for tailored technical and policy support, including targeted territorial management, output market development, and access to credit, to facilitate the widespread adoption of agroecological practices in the cotton-growing zone.

Keywords: Adoption, agroecological practice, constraints, cotton zone, farm diversity, motivation