Food and Agriculture Organization of the United Nations

Assessing agroecological transitions in Mali with TAPE

CONTEXT

TAPE was used to establish the baseline for the GEF project "*Resilient, productive and sustainable landscapes in Mali's Kayes Region*" led by FAO, and to support its formulation.

Between September and October 2020, 242 farms were surveyed with TAPE in 5 districts of the region of Kayes by the Institute for Research and Promotion of Alternatives in Development (IRPAD), an NGO working to support agro-ecological transitions.

TAPE was coupled with the methodology for mapping territorial markets developed by FAO to complement the analysis on this particular topic.

STEP 0: ENABLING ENVIRONMENT

The enabling environment for the agroecological transition in the area includes specific laws and activities of farmers organizations (e.g. the Nyéléni convention on food sovereignty was signed in Mali, not far from Kayes).

Poverty in rural areas of Western Mali remains a major issue, as well as the lack of good infrastructures and the threat of climate change and desertification.

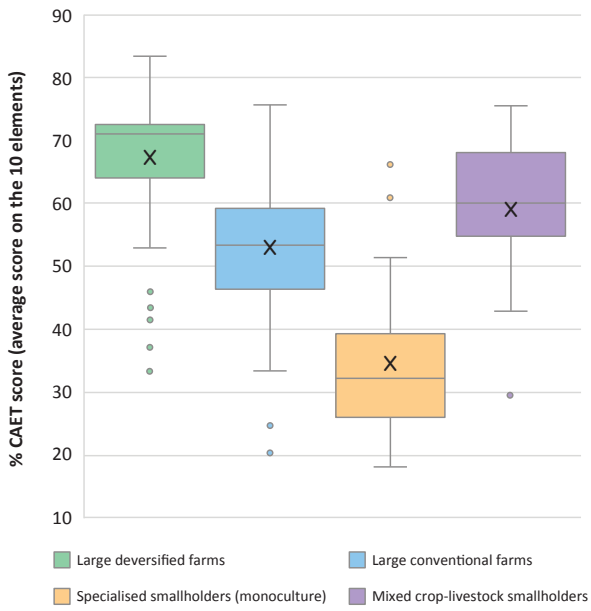
Four types of production systems were defined prior to carrying out the TAPE surveys: large farms (diversified vs conventional) and smallholders (mixed vs specialized in monoculture).

STEP 1: CHARACTERISATION OF THE AGROECOLOGICAL TRANSITION

The overall agroecological level of the farm/household is measured by the Characterization of agroecological transition (CAET), which is an average score over the 10 Elements of Agroecology. In the Kayes area, 68 percent of the farms score over 50 percent and 31 percent score over 70 percent.

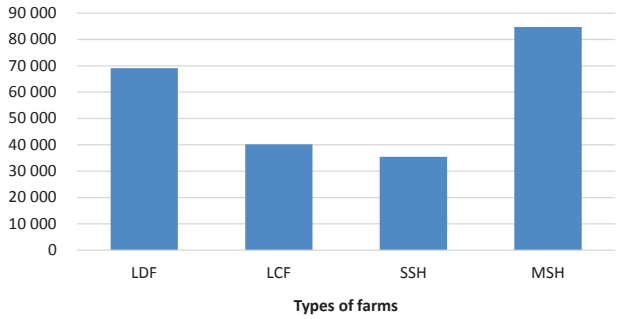
Smallholders in monoculture (SSH) have the lowest scores of all types, with particularly low score in Resilience (29 percent). Mixed crop-livestock smallholders (MSH) have the second highest average CAET score (60 percent) and the highest score in Efficiency (80 percent) and Co-creation and sharing of knowledge (65 percent).

FIGURE 1
Characterization of agroecological transition (CAET) per type of farm: boxes include second and third quartile and x represent means



Sources: Authors' own elaboration.

FIGURE 2
Net revenue from agriculture/person (CFA)

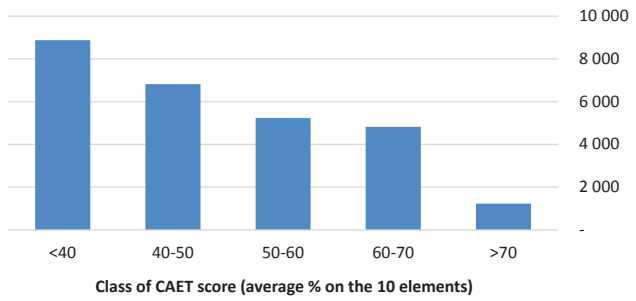


Sources: Authors' own elaboration.

STEP 2: PERFORMANCE OF THE SYSTEMS

Economic performance: more advanced agroecological types of farms (LDF and MSH) show higher productivity and value added than the conventional farms and the farms in monoculture. They also have higher net revenues generated by the agropastoral activities (Figure 2), better perception of the evolution of their revenues, as well and less expenditures for productive inputs per hectare (Figure 3).

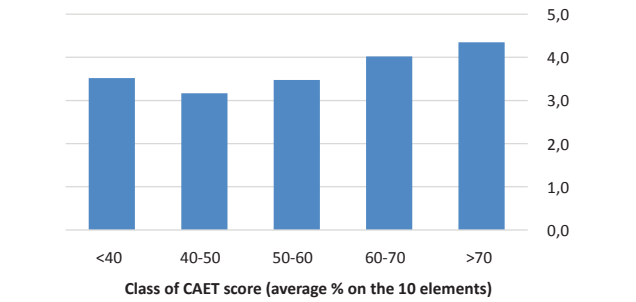
FIGURE 3
Averance expenditures for inputs/ha (CFA)



Sources: Authors' own elaboration.

Environmental performance: more advanced agro-ecological types of farms have less exposure to pesticides. Positive correlations can be found between the CAET average score and the soil health score (Figure 3), as well as biodiversity on farm.

FIGURE 4
Average score for soil health (%)



Sources: Authors' own elaboration.

Social performance: More advanced agroecological types have more opportunities for young people, more of them employed on farm, and less willingness to leave area. Strong correlation between CAET scores and percentage of the family employed on farm, including women, were also found. Results also show that women have less secure land tenure than men.

A positive correlation between agro- ecological transition (CAET) and nutritional diversity was found. More advanced agroecological farms also have less expenditures in food which indicates that they are more self-sufficient in terms of food production.

FIGURE 5
Average score for youth employement (%)

Sources: Authors' own elaboration.

STEP 3: PARTICIPATIVE ANALYSIS OF RESULTS

A restitution workshop was organized by IRPAD in Kayes to inform producers about the level of agroecological transition in the various types of farms and the performance indicators. The validity of results was confirmed. Results from TAPE were subsequently used to inform the design of the GEF project. This includes for example the need for better integration between crops and livestock through the recycling of crop residues and by-products as animal feed and a better use of manure, as well as a focus on water use efficiency. The role of producers' networks, including for women, was also recognized as an important part of the enabling environment.

LINKS

Evidence on the multidimensional performance of agro-ecology in Mali using TAPE https://doi.org/10.1016/j.agsy.2022.103499

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