



Assessing agroecological transitions in Kenya with the Tool for Agroecology Performance Evaluation (TAPE)

Context

The Measuring Agroecology and its Performance (MAP) project is a collaborative initiative of the Agroecology TPP aimed at fostering agroecological transitions by generating evidence of agroecology's contribution to societal goals. The MAP project is funded by the German Federal Ministry for Economic Cooperation and Development (BMZ), co-funded by the European Union (EU) and supported by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. The Tool for Agroecology Performance Evaluation (TAPE) was applied in 2024 in three Kenyan counties (Bungoma, Kakamega and Siaya) in the context of the Global Programme "Soil Protection and Rehabilitation for Food Security" (ProSoil). To assess the contribution of ProSoil to agroecological transitions of farmers and their multidimensional performance, TAPE was applied with 101 households that actively participated in ProSoil activities (ProSoil group) and with 100 households that had not actively participated in the programme (comparison group).

Step 0: Enabling environment

The predominant farming systems in the three counties provide a good starting point for agroecological transitions. Most farmers practice mixed farming, combining a diversity of crops and livestock and usually integrate trees in their productive systems. Yet, most farmers are smallholders with an average farm size of 0.77 hectares (ha) and rely on subsistence farming with limited surplus production and a significant proportion of farmers (68 percent) live below the international poverty line. This is among the key factors rendering agriculture unpopular with youth, whereas young people represent the largest segment of the labour force in Western Kenya. While the focus of public policy is on increasing agricultural productivity through subsidizing synthetic fertilizers and the hire of tractors for ploughing, existing producer networks, are key for enabling agroecological, as these networks facilitate co-creation of knowledge. Yet, the presence of various organizations that promote sometimes conflicting farming approaches creates confusion among farmers and cooperatives regarding the most appropriate sustainable farming practices. Additional hindering factors for agroecology include high levels of land degradation and limited access to ecological inputs and markets.

Step 1: Characterization of the agroecological transition (CAET)

Results show that ProSoil activities made a holistic contribution to foster farmers' transition to agroecology, as on average the households of the ProSoil group had a significantly higher CAET score for all 10 Elements of Agroecology than farmers from the comparison group (Figure 1). Still, most households are at an incipient stage of transition. The difference between the ProSoil and comparison groups is most pronounced for the elements efficiency, recycling, synergies, and co-creation and sharing of knowledge. This indicates that ProSoil successfully introduced a series of agroecological farming practices and further fostered farmers' central role in innovation and knowledge sharing on agroecology.

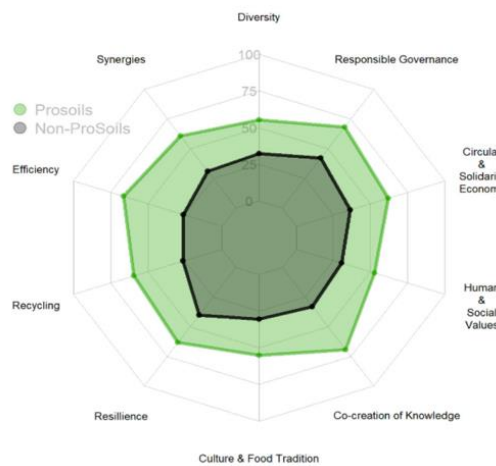


Figure 1: Results of TAPE Step 1 (CAET). The average CAET scores per element of agroecology are compared for the ProSoil and comparison groups.

Step 2: Performance of the systems

Economic performance: The results show a positive correlation between the degree of agroecological integration (CAET score) and economic performance. Thus, on average, more agroecological households have higher total farm productivity scores (Figure 2). This is particularly the case for farmers at an advanced stage of agroecological transition. Additionally, the results show a significantly positive correlation between CAET scores and value added as well as household income (graphs not shown). Yet, the results also show that on average more agroecological farmers have higher expenditures on agricultural inputs (graph not shown). This implies that deliberate efforts to decrease the costs of ecological and organic farming inputs are required to further foster agroecological transitions.

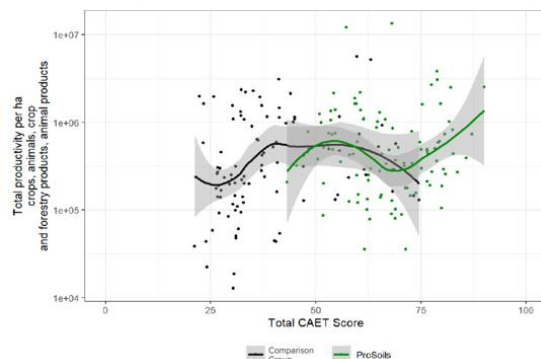


Figure 2: Results of TAPE Step 2 on economic performance. The total CAET scores of the ProSoil and comparison groups are correlated with total farm productivity per ha.

Environmental performance: Regarding agrobiodiversity (graphs not shown), CAET scores correlate significantly positively with (i) diversity of crop species and varieties, (ii) diversity of livestock species and breeds, as well as (iii) diversity of natural vegetation and pollinators. Regarding soil health, the results (Figure 3) show that more agroecological farms on average have a significantly higher aggregate soil health index scores (combining 10 individual indicators). The correlation between CAET scores and individual soil health parameters is strongest for increased soil cover and reduced erosion, crucial to combat further land degradation.

Social performance: There is no significant correlation between CAET scores and the women and youth empowerment indicators. This highlights the requirement to further strengthen gender equity and youth empowerment efforts in agroecological interventions to increase agroecology's contribution to sustainable development.

Health and nutrition: On average, households with an enhanced integration of the 10 Elements of Agroecology have significantly lower perceived levels of food insecurity (Figure 4). This suggests that agroecology is an effective and viable approach for addressing food security and hunger in Kenya. The results further show a significant positive correlation between CAET scores and the dietary diversity index (graph not shown).

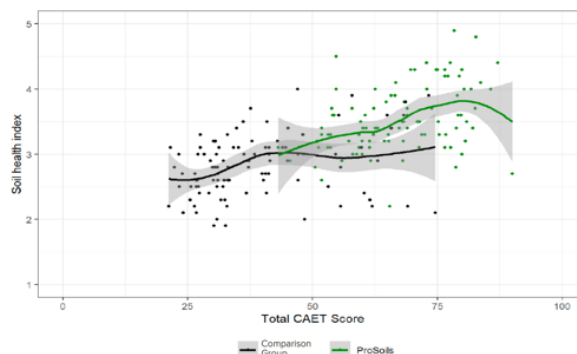


Figure 3: Results of TAPE Step 2 on environmental performance. The total CAET scores of the ProSoil and comparison groups are correlated with the aggregated soil health index.



Figure 4: Results of TAPE Step 2 on health and nutrition performance. The total CAET scores of the ProSoil and comparison groups are correlated with the food security score.

Step 3: Participative analysis of results

In a workshop attended by 46 stakeholders, including farmers, civil society organizations, research and education institutes as well as representatives from governmental agencies and the private sector, the participants appreciated that ProSoil has been highly effective in fostering agroecological transitions and that the holistic integration of the 10 Elements of Agroecology correlates with significant increases of farming households' performance across economic, environmental and nutrition dimensions. The stakeholders made the following recommendations:

- Deliberately focus on making agriculture more attractive to youth, including through policies supporting tenure security, creating opportunities for digital marketing technologies and the application of information and communications technology in precision farming.
- Ensure a holistic systems approach when assessing agroecology and its performance rather than limiting agroecology to its agronomic dimensions or limiting performance to economic criteria. As not all projects are able to systematically address food system challenges holistically or to integrate all 10 Elements of Agroecology, the participants recommended enhancing collaborative efforts among projects and actors working in Western Kenya to collectively foster an agroecological food system transformation.
- To scale agroecology beyond projects, participants recommended intentional efforts to build the capacity of producers and producer organizations, incorporating farmer-to-farmer knowledge-exchange programmes and thereby enhancing ownership, connectivity among producers, and the sustained implementation of agroecological practices.

Links

[Tool for Agroecology Performance Evaluation \(TAPE\)](#) | [Agroecology TPP](#) | [Soil Protection and Rehabilitation for Food Security \(ProSoil\)](#) | [Measuring Agroecology and its Performance \(MAP\) project](#)



The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dashed lines on maps represent approximate border lines for which there may not yet be full agreement.



Some rights reserved. This work is made available under the Creative Commons Attribution - 4.0 International licence (CC BY 4.0).