



# Assessing agroecological transitions in Ethiopia 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 Ethiopian districts (Hula, Sodo-Zuria and Walmara) in the context of the Global Programme “Soil Protection and Rehabilitation for Food Security” (ProSoil), operating as ISFM+ in Ethiopia. To assess the contribution of ProSoil to agroecological transitions of farmers and their multidimensional performance, TAPE was applied with 99 households that actively participated in ProSoil activities (ProSoil group) and with 99 households that had not actively participated in the programme (comparison group).

## Step 0: Enabling environment

The agricultural policies in Ethiopia provide a favourable enabling environment for agricultural development yet predominantly focus on economic growth and food security. In the study locations, high population densities coupled with intensive cultivation result in land degradation and soil erosion, being key concerns for sustainable agricultural production. Increasingly unpredictable rainfall patterns pose a major challenge to farmers. The majority of households rely on agriculture for their subsistence and practice mixed farming, integrating staple food crops (cereals and ensete) with livestock and fruit trees. While sale of surplus and limited production of timber, coffee, khat and other cash crops contribute to household incomes, access to markets is a major limiting factor and high proportions of the population in the three districts live below the poverty line. The economic situation is connected with youth emigration, resulting in shortage of manpower for agricultural labour. Farm size averages 1.56 hectares (ha) per household and land fragmentation is increasing due to population growth. As farmers do not own the land they use, land tenure can be considered a major hindering factor for agroecological transitions. On the other hand, the increased awareness of environmental challenges and the limited access to commercial agricultural inputs result in an increasing interest in farmers to transition to agroecological farming systems.

## 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, only very few households are at an advanced stage of transition. The difference between the ProSoil and comparison groups is most pronounced for the element co-creation and sharing of knowledge. This indicates that ProSoil successfully fostered farmers’ central role in innovation and knowledge sharing on agroecology.

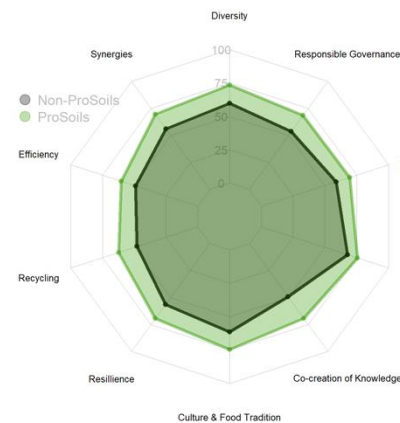


Figure 1: Results of TAPE Step 1 (CAET). The average CAET scores per element of agroecology are compared for the ProSoil and comparison groups.

## 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 value of farm outputs (Figure 2). Additionally, the results show a significantly positive correlation between CAET scores and productivity, value added as well as household income (graphs not shown). When calculated per area (ha), these correlations between agroecology scores and economic performance remain positive but become less statistically significant. This implies that farm size is a major factor determining both degree of agroecological integration and economic performance in Ethiopia, indicating the importance of ensuring that innovations and knowledge sharing mechanisms are adequate for smallholders.

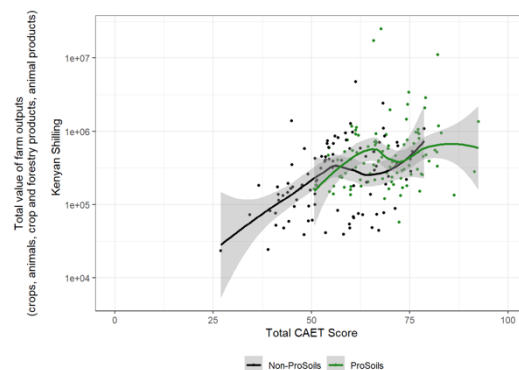


Figure 2: Results of TAPE Step 2 on economic performance. The total CAET scores of the ProSoil and comparison groups are correlated with total value of farm outputs (crops, livestock and forestry products).

**Environmental performance:** The results (Figure 3) show that more agroecological farms on average have a significantly higher aggregate soil health index score (combining 10 individual indicators). This demonstrates the value of agroecological approaches for reversing soil and land degradation. Further, CAET scores correlate significantly positively with (i) diversity of natural vegetation and pollinators (Figure 4), (ii) diversity of crop species and varieties, as well as (iii) diversity of livestock species and breeds (graphs not shown).

**Social performance:** There is no significant correlation between CAET scores and the women and youth empowerment indicators (graphs not shown). 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, improved dietary diversity and a reduced exposure to pesticides (graphs not shown). This suggests that agroecology is an effective and viable approach for improving food and nutrition security and health parameters for rural populations in Ethiopia.

### Step 3: Participative analysis of results

In a workshop attended by over 60 stakeholders, including farmers, civil society organizations, research and education institutes as well as representatives from governmental agencies and the private sector, the participants appreciated the importance of the results from this TAPE application for guiding decision makers towards enhancing finance and policy support for agroecological food system transformations and to facilitate increased capacity development for diverse actors on agroecology. The stakeholders made the following recommendations:

- Create increased incentives for youth to engage in agriculture; for instance, through preferential micro-credits, by creating an enabling environment for ICT-supported business opportunities along the value chains, or by improving tenure security for young farmers.
- Provide deliberate support for farmers to adopt agroecology; for instance, by establishing a national agroecology platform or through the provision of monetary and non-monetary incentives for practicing agroecology. The stakeholders were, however, divided on the question of monetary incentives as about one-third of them were convinced that the benefits (increased multidimensional performance) of practicing agroecology ought to be a sufficient incentive and the focus should hence rather be on creating enhanced awareness of the benefits of agroecology among farmers and other actors.
- Carry out more assessments of the performance of agroecology, including beyond the farm-level as several of the 10 Elements of Agroecology as well as the results of agroecological transitions only become fully apparent on a landscape or territorial scale. Assessments should also be carried out periodically in the same locations to create a baseline and track localized agroecological transitions.

### Links

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

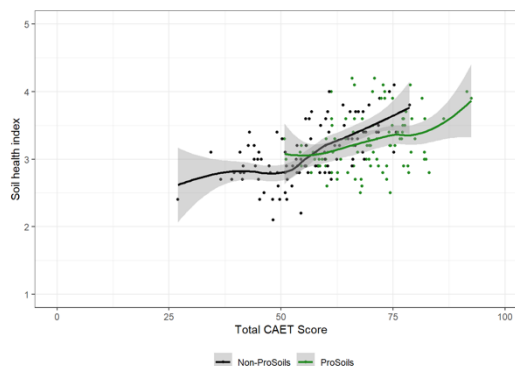


Figure 3: Results of TAPE Step 2 on environmental performance. The total CAET scores of the ProSoil and comparison groups are correlated with the aggregated soil health index.

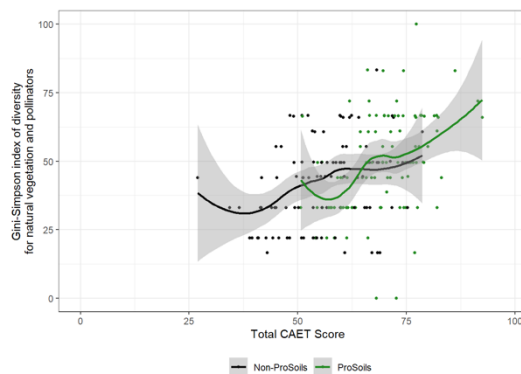


Figure 4: Results of TAPE Step 2 on environmental performance. The total CAET scores of the ProSoil and comparison groups are correlated with the Gini-Simpson index of diversity for natural vegetation and pollinators.

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