



Assessing agroecological transitions in Benin 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 four municipalities (Za-Kpota, Bantè, Sinendé and Kandi) in Benin 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 120 households that actively participated in ProSoil activities (ProSoil group) and with 120 households that had not actively participated in the programme (comparison group).

Step 0: Enabling environment

The conditions in the study sites provide considerable opportunities for agroecological transitions. On average, the assessed households manage 7.6 hectares (ha) of land. While an average of 5 ha is dedicated to agricultural production, 0.6 ha are pastures for livestock, and 2 ha are reserved for natural vegetation. While 46 percent of farms are mono-cropping systems, 54 percent have a diversified production system, with diverse crops (47 percent), livestock (33 percent), fruit trees (15 percent), and timber trees (5 percent). Overall, the policy environment in Benin is supportive of agroecology, with several national and sub-national policies prioritizing sustainable land management, biodiversity conservation and climate change adaptation and mitigation. A key constraint to agroecological transitions in Benin is the limited land tenure security. Of the assessed households only 11 percent had legal or customary tenure land ownership rights.

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 element co-creation and sharing of knowledge, indicating that ProSoil 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 significant positive correlation between the degree of agroecological integration (CAET score) and economic performance. Thus, on average more agroecological households have significantly higher total farm productivity scores (Figure 2). The correlation is strongest for the agroecology element diversity, demonstrating the importance of farm diversification for economic sustainability. Additionally, the results show a significantly positive correlation between CAET scores and value added as well as revenues from crop and animal sales (graphs not shown). Higher degrees of agroecological integration are also closely correlated with higher net revenues from all agropastoral activities combined (Figure 3). These results indicate that in the study locations agroecology is a highly effective strategy for increasing households’ net income and overall farm productivity.

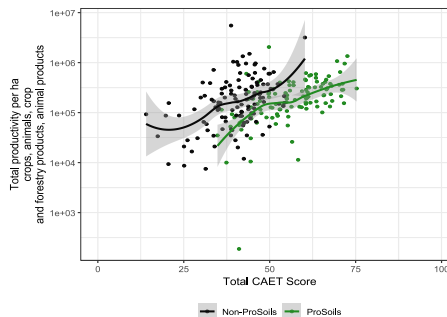


Figure 2: Results of TAPE Step 2 on economic performance. The total CAET scores of the ProSoil and comparison groups are correlated with total farm productivity per ha.

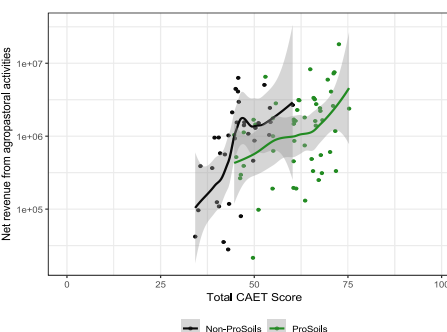


Figure 3: Results of TAPE Step 2 on economic performance. The total CAET scores of the ProSoil and comparison groups are correlated with total net revenue from agropastoral activities.

Environmental performance: Regarding agrobiodiversity (graphs not shown), CAET scores correlate significantly positively with diversity of crop species and varieties as well as with diversity of natural vegetation and pollinators. The

correlation between CAET scores and livestock diversity is much less significant but still positive. Regarding soil health, the results show that more agroecological farms on average have significantly increased soil cover and higher presence of soil invertebrates. However, the aggregate soil health index (combining 10 individual indicators) correlates only weakly with CAET scores (Figure 4), which could indicate a time lag between transitioning to agroecology and being able to measure significant differences in soil health parameters.

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 5). This suggests that agroecology is an effective and viable approach for addressing food security and hunger in Benin. However, no significant correlations were found between CAET scores and dietary diversity or food expenditure per capita, emphasizing the need to enhance agroecology's contribution to nutrition outcomes.

Step 3: Participative analysis of results

In a workshop attended by 32 stakeholders, including farmers, civil society organizations, research and education institutes as well as representatives from governmental agencies and the private sector private, 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 social dimensions. The stakeholders made the following recommendations:

- Further develop capacity of diverse actors to assess the multidimensional performance of agroecology with TAPE.
- Disseminate the results widely to increase awareness on the contribution of agroecology to sustainable development, particularly local economic development.
- Carry out further analyses to assess the impact of agroecological practices and particularly agroforestry on climate change mitigation, in light of Benin's commitments to carbon sequestration.
- Strengthen gender equity and youth empowerment efforts in agroecological initiatives.
- Systematically address land tenure challenges to enable inclusive agroecological transitions.
- Further support farmers in diversifying their production systems, as the evidence suggests a clear correlation between overall farm productivity and farm diversification.

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.

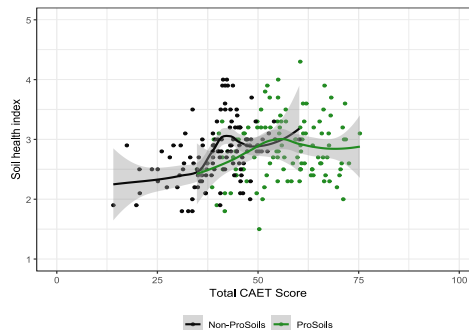


Figure 4: Results of TAPE Step 2 on environmental performance. The total CAET scores of the ProSoil and comparison groups are correlated with the aggregated soil health index.

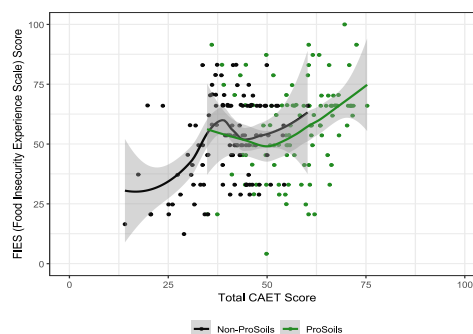


Figure 5: Results of TAPE Step 2 on health and nutrition performance. The total CAET scores of the ProSoil and comparison groups are correlated with the food security score.



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



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.

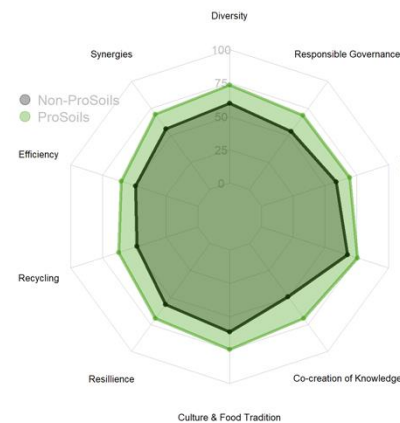


Figure 1: Results of TAPE Step 1 (CAET). The average CAET scores per element of agroecology are compared for the ProSoil and comparison groups.

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.

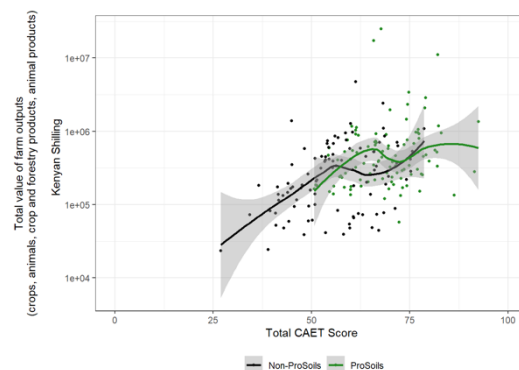


Figure 2: Results of TAPE Step 2 on economic performance. The total CAET scores of the ProSoil and comparison groups are correlated with total value of farm outputs (crops, livestock and forestry products).

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](#)

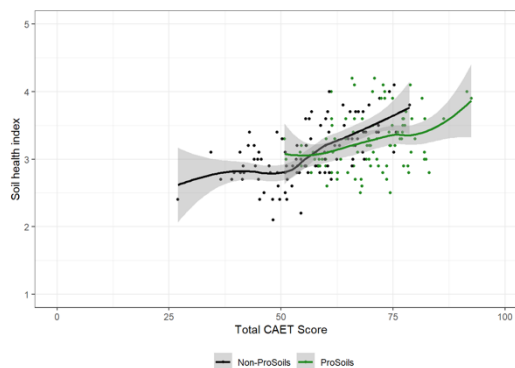


Figure 3: Results of TAPE Step 2 on environmental performance. The total CAET scores of the ProSoil and comparison groups are correlated with the aggregated soil health index.

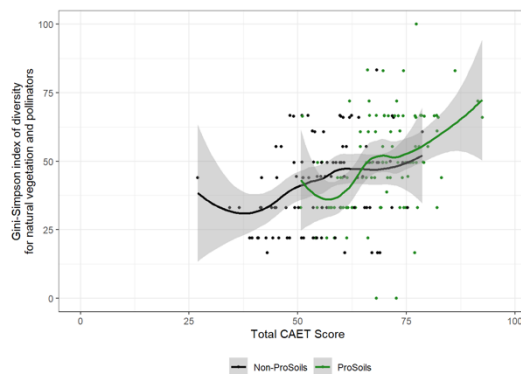


Figure 4: Results of TAPE Step 2 on environmental performance. The total CAET scores of the ProSoil and comparison groups are correlated with the Gini-Simpson index of diversity for natural vegetation and pollinators.

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).



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.

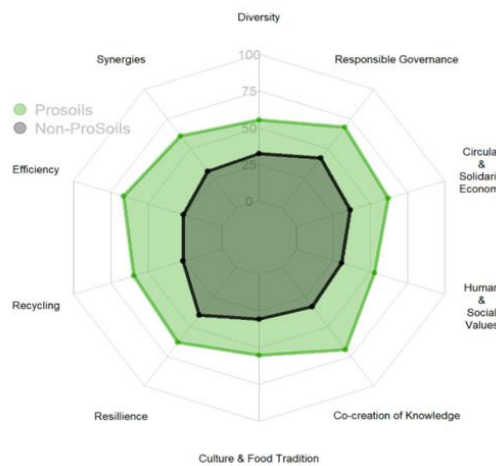


Figure 1: Results of TAPE Step 1 (CAET). The average CAET scores per element of agroecology are compared for the ProSoil and comparison groups.

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.

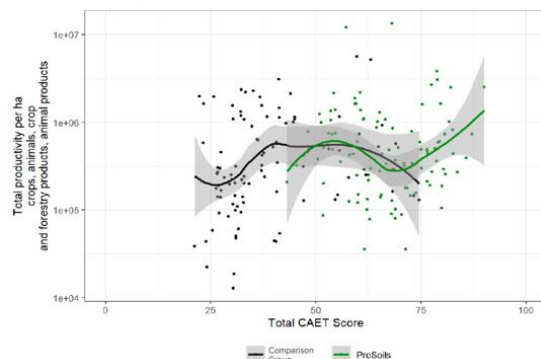


Figure 2: Results of TAPE Step 2 on economic performance. The total CAET scores of the ProSoil and comparison groups are correlated with total farm productivity per ha.

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).

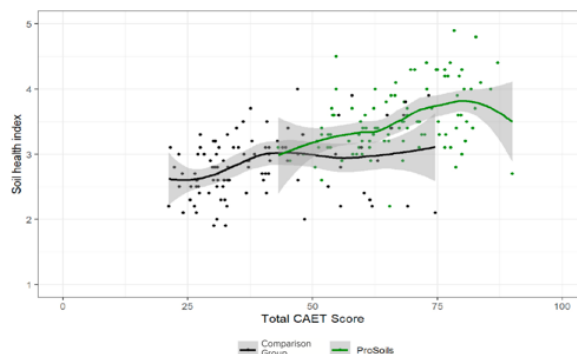


Figure 3: Results of TAPE Step 2 on environmental performance. The total CAET scores of the ProSoil and comparison groups are correlated with the aggregated soil health index.



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).



Assessing agroecological transitions in Madagascar 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 four municipalities (Belobaka, Katsepy, Manerinerina and Tsaramandroso) in the Boeny Region of Madagascar in the context of the Global Programme “Soil Protection and Rehabilitation for Food Security” (ProSoil). To characterize farmers’ transition to agroecology and assess the correlation between agroecological integration and multidimensional performance, TAPE was applied with 200 households in the intervention area of ProSoil.

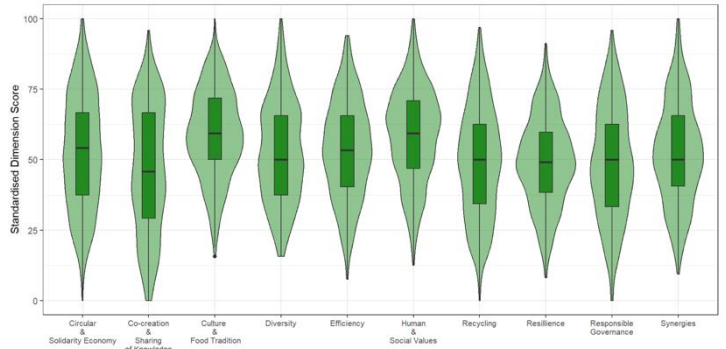
Step 0: Enabling environment

Near-natural ecosystems make up nearly 90 percent of the Boeny Region and only 12 percent of the land is cultivated, over half of which is dedicated to rice production. Vegetables and fruit trees are commonly grown for subsistence in home gardens and commercially around urbanized areas. Different legumes are grown commercially and for subsistence, particularly in the temporarily flooded fertile lowlands. Farmacyard manure production is limited, and mineral fertilizer is applied scarcely. Thus, soil fertility management is mainly based on natural processes during floods in lowlands and soil mining is very common in the uplands. Unregulated pesticide use is common, particularly in maize and legume cultivation. In proximity to the regional capital, organic farming inputs are commercially available. The savannah ecosystem prevailing in the region is suitable for cattle farming and the livelihoods of the local Sakalava people largely depend on cattle rearing. The 630 km coastline as well as several freshwater bodies result in fishery, aquaculture and rice-fish farming playing a major role in the local economy. While population densities are low, the region is characterized by high levels of rural migration from other parts of the country. Road infrastructure is poor, resulting in very limited market access and fields are often only accessible by foot. The enabling environment for agroecological transition in the Boeny Region is supported by ProSoil activities and other GIZ-implemented projects on land tenure, reforestation and protected areas. These aim to counteract environmental degradation, informal contract farming, and uncontrolled pesticide use as well as to support the establishment or strengthening of farmers’ organizations.

Step 1: Characterization of the agroecological transition (CAET)

The results from 200 household assessments show a considerable variation among assessed households (Figure 1). While the average total CAET score of 52 implies that most farmers are at an incipient stage of transition, a considerable proportion of farms are yet to transition to agroecology and others have already integrated the 10 Elements of Agroecology to an advanced degree. The average CAET scores are highest for the elements culture & food traditions and human & social values. This indicates that in the study locations, local knowledge, traditions and culture are critical aspects of agroecological transitions that need to be conserved and strengthened. The agronomic and economic dimensions of agroecology seem less developed in the Boeny Region.

Figure 1: Results of TAPE Step 1 (CAET). The average CAET scores with standard deviations are shown for each of the 10 Elements of Agroecology.



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 a significantly higher overall farm productivity (Figure 2). Additionally, the results show a significantly positive correlation between CAET scores and household income yet no significant correlation between agroecological integration and value addition (graphs not shown). This indicates that agroecology can be an effective approach to reduce economic poverty in rural Madagascar.

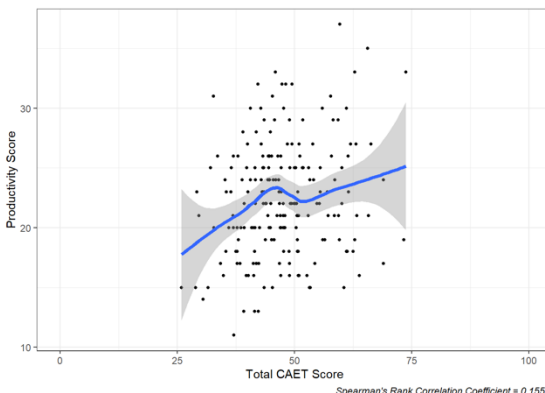
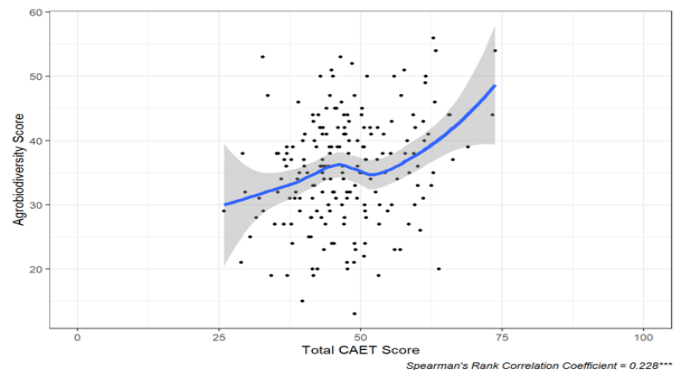


Figure 2: Results of TAPE Step 2 on economic performance. The total CAET scores are correlated with the composite productivity score, combining indicators for crop, livestock and forestry productivity.

Environmental performance: The results show a highly significant positive correlation between CAET scores and agrobiodiversity indicators, as more agroecological farms on average cultivated more crop species and varieties, held more livestock species and breeds, and had a higher Gini-Simpson index of diversity for crops and livestock as well as natural vegetation and pollinators (Figure 3). Further, more agroecological farms on average have significantly higher soil health scores, particularly for the indicators on presence of invertebrates, soil cover and soil compaction (graphs not shown). This demonstrates the value of agroecological approaches for here is even a slightly negative correlation with CAET scores (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 highly significantly lower perceived levels of food insecurity and improved dietary diversity (Figure 4). Further, more agroecological farmers also had a highly significantly reduced

Figure 3: Results of TAPE Step 2 on environmental performance. The total CAET scores are correlated with the composite agrobiodiversity score, combining indicators for crop, animal and natural vegetation diversity.



exposure to pesticides (graphs not shown). This suggests that agroecology is a highly effective approach for improving food and nutrition security and health parameters for rural populations in Madagascar.

Step 3: Participative analysis of results

A national workshop was attended by over 70 stakeholders, including farmers, civil society organizations, research and education institutes as well as representatives from governmental agencies and the private sector. Additionally, municipality-level workshops were attended by hundreds of farmers as well as local authorities and NGOs. The farmers and other stakeholders appreciated the evidence linking agroecological transitions with improved performance across economic, environmental, nutritional and health domains. The stakeholders made the following recommendations:

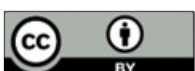
- Prioritize providing promising opportunities for youth to engage in agriculture and ensure sustainable livelihoods.
- Further support farmers to transition to agroecology, as this requires long-term investments to adapt to climate change and combat environmental degradation, which were seen as major threats for agricultural production by the stakeholders.
- Increasingly engage policy makers and investors as well as entrepreneurs in the discussions about agroecology, as scaling agroecology requires an enabling environment and farmers' agency is limited.
- Take a non-dogmatic approach to agroecology, as many farmers considered synthetic pesticides and mineral fertilizers necessary to obtain sufficient yields to ensure food security and economic prosperity. The biopesticides locally available were considered insufficiently effective by many participants.

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).