ANNUAL MEMBERS FORUM MEETING 2025

Agroecology TPP

Agroecology and Safe Food System Transitions

Showcasing and reflecting on AE-TPP progress

The Metrics Domain

01 April 2025

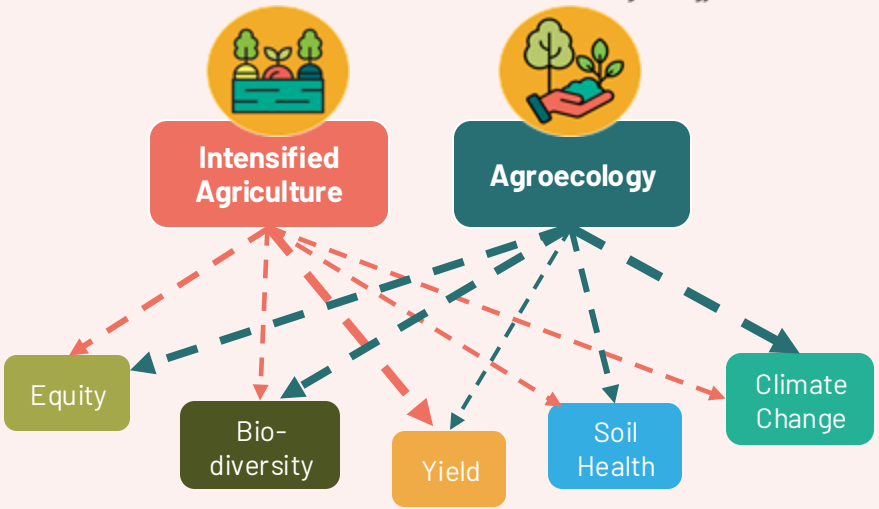
Matthias Geck

Levelling the playing field

A key challenge to up-scaling agroecology is providing policymakers, donors, development actors and farmers with ways of measuring performance that **allow fair comparison** with alternatives.

Agri-food systems are complex, measuring them isn't easy.

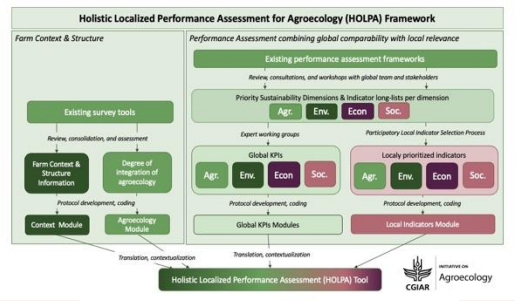
Dominant practice has been to **measure a narrow set of metrics** focusing on economic performance and productivity.

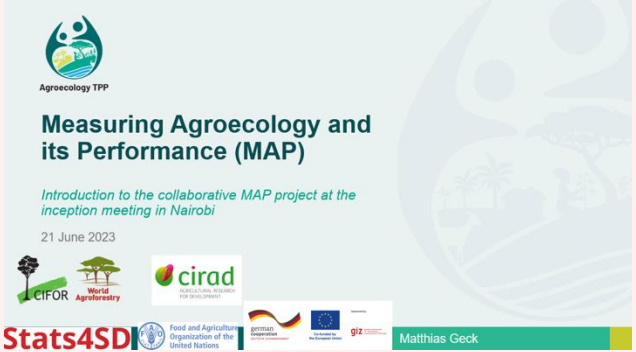


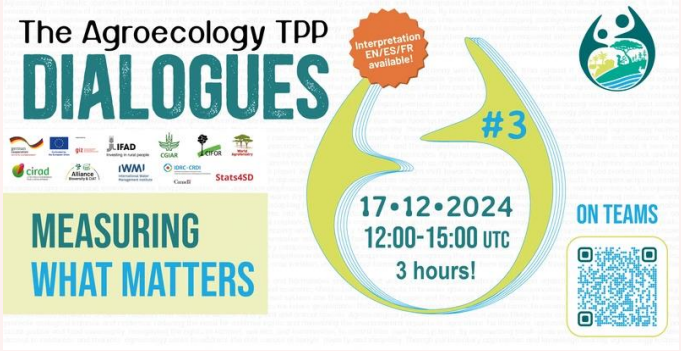
But agroecological systems provide environmental and social benefits, not only economic ones!

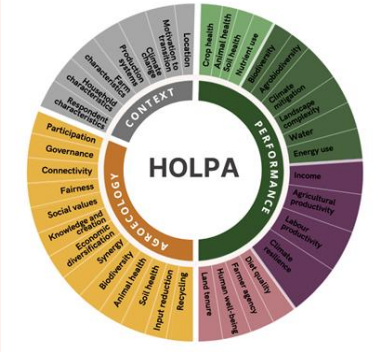
Stats4SD

THE METRICS DOMAIN OF THE AGROECOLOGY TPP









CIFOR World Agroforestry Stats4SD

KNOWLEDGE BRIEF

4

What agroecology brings to food security and ecosystem services: a review of scientific evidence

DeSIRA LIFT

Authors:
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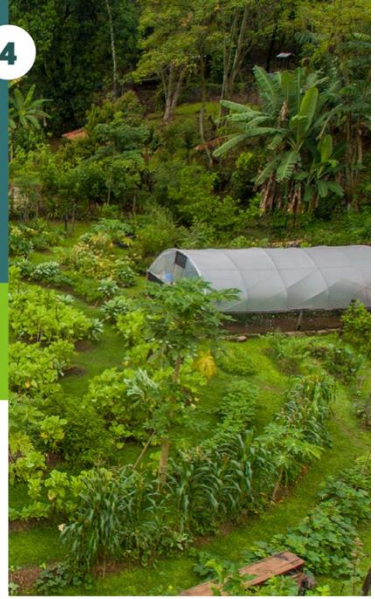
Nadine Andrieu (CIRAD)



Abstract

There is a growing body of scientific evidence regarding the outcomes and impacts of agroecology. This knowledge brief aims to provide a set of evidence, based on a large-scale analysis of scientific articles (literature review, meta-analysis, models).

There is a strong theoretical basis and empirical evidence that food security outcomes (availability, access, utilisation, stability) are as good or sometimes even better for agroecological systems than conventional alternatives. Four levers for agroecology supporting the positive impacts of agroecology on food security are analysed: crop diversification, legume-based systems, agroforestry and mixed crop-livestock systems. Crop diversification is an effective strategy to improve food security by mobilising different biological mechanisms. Due to its biological characteristics for nitrogen (N) fixing, legumes are one of the most important levers for improving food security (both availability and food utilisation/nutrition) based on agroecological principles. Agroforestry contributes to food availability by recycling nutrients, to food stability by increasing the resilience of the farming systems and to food utilisation through better diets. Mixed crop-livestock systems contribute to food availability by recycling nutrients and to food utilisation through meat and milk consumption.

As agroecology is more than a set of practices, this knowledge brief specifically focuses on two approaches with a high potential to increase food security and efficiently address environmental challenges. A set of evidence is analysed for integrated soil health management and agroecological pest management.

Beyond production and food security, agroecology brings multiple services. In fact, such services are the main arguments to support agroecological approaches able to adequately address both food security and environmental challenges. Socio-economic evidence is also analysed.

1 Context and objective

Agroecology is a science, a set of practices and a social movement. It is defined by the Food and Agriculture Organization of the United Nations (FAO) as "an integrated approach that simultaneously applies ecological and social concepts and principles to the design and management of food and agricultural systems" that "aims to optimise the interactions between plants, animals, humans and the environment while taking into account the social aspects that must be addressed for a sustainable and equitable food system". Many actors referring to agroecology prefer to insist on principles that define what agroecology is. The FAO proposes 10 elements to characterise agroecology, identified during a consultation process carried out between 2015 and 2017, and culminating with an international symposium in 2018.[1] The HLPE report (2019) on agroecology presents 13 principles (both technical, social and organisational)

1] Available at http://www.fao.org/about/meetings/second-international-agroecology-symposium/en/ accessed February 2021

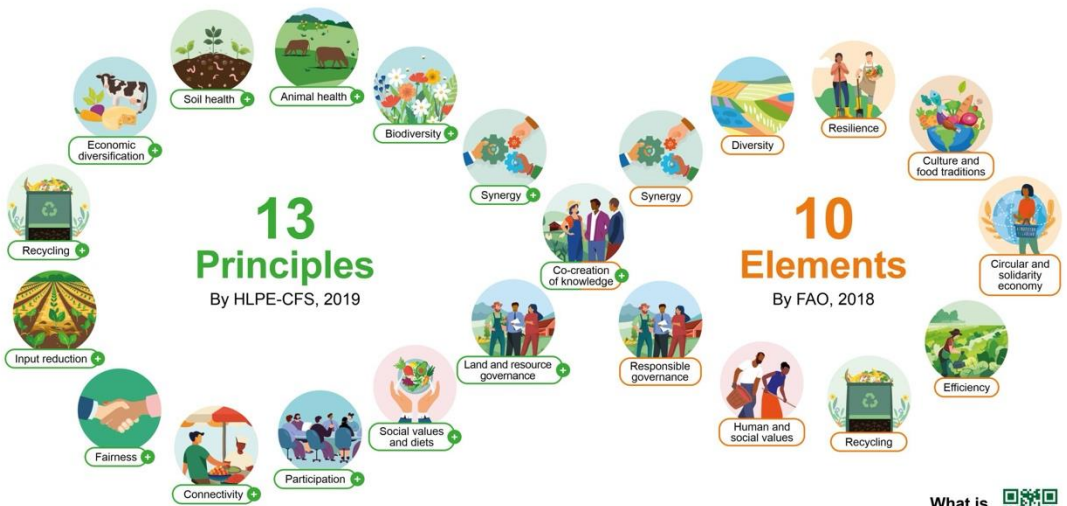
Agroecology Coalition

Agroecology- towards the transformation of food systems

Agroecology, based on a set of principles and elements, is a transformative pathway towards sustainable food systems.

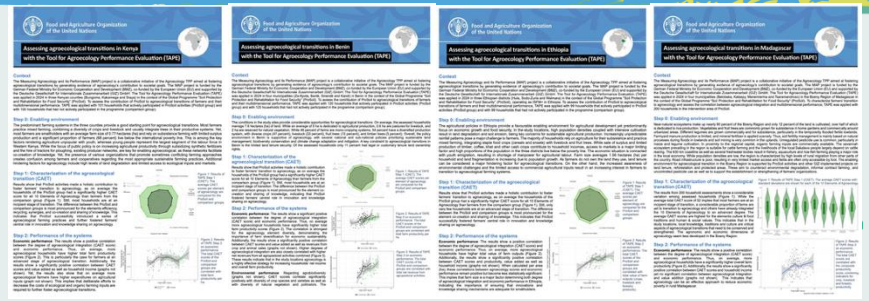
Discover its foundations through theory and practical examples!

Click on the + icon to find out more.



As you explore the infographic, you will come across the word «farmer» several times. This is often used to indicate other food producers (fisher-folks, herders...)

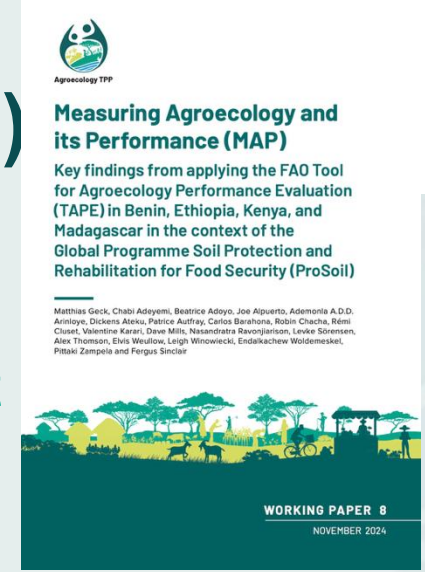
https://www.desiralift.org/wp-content/uploads/2024/02/DeSIRA-LIFT-Knowledge-brief4-Agroecology.pdf

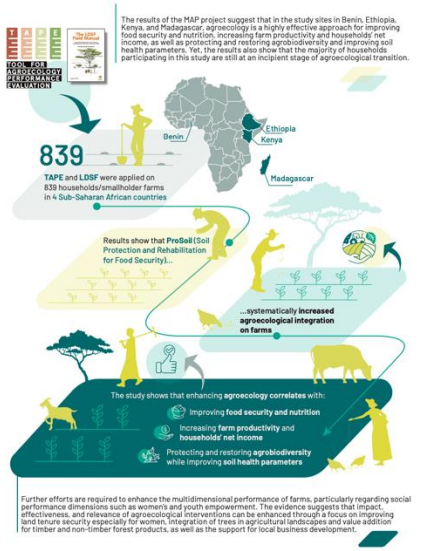


https://www.fao.org/agroecology/database/detail/en/c/1734727/

Measuring Agroecology and its Performance(MAP)

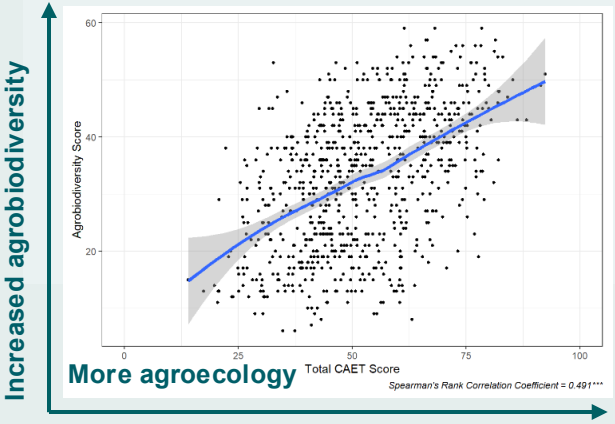
Key findings and lessons learned from applying TAPE in Benin, Ethiopia, Kenya, and Madagascar in the context of ProSoil

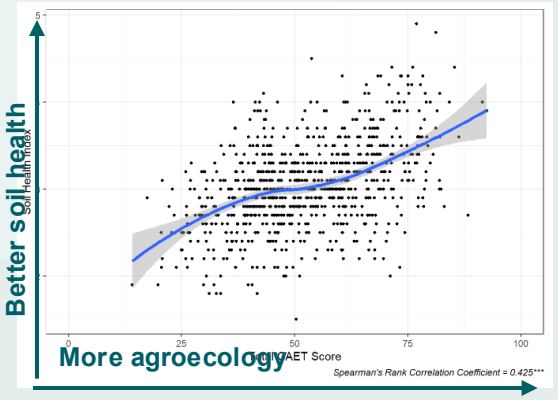




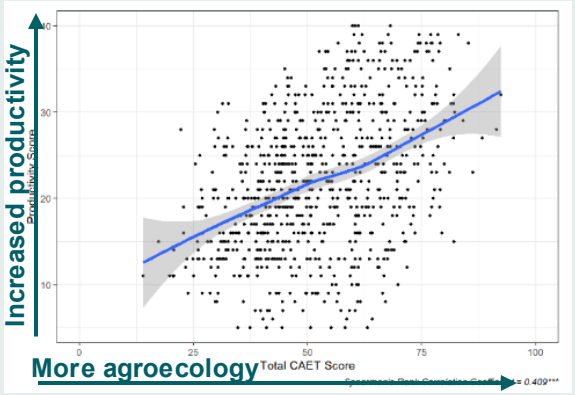
https://www.cifor-icraf.org/knowledge/publication/9298/

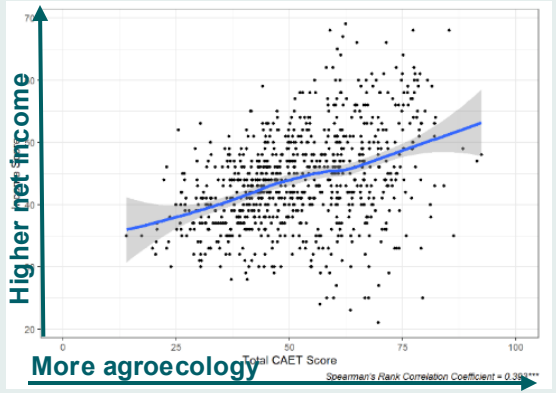
german cooperation DEUTSCHE ZUSAMMENARBEIT
Co-funded by the European Union
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
cirad AGRICULTURAL RESEARCH FOR DEVELOPMENT
Food and Agriculture Organization of the United Nations
Stats4SD
CIFOR
World Agroforestry

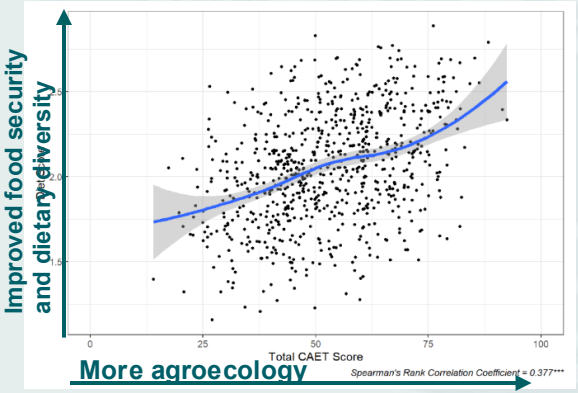




Agroecology is good for the environment, but not only!







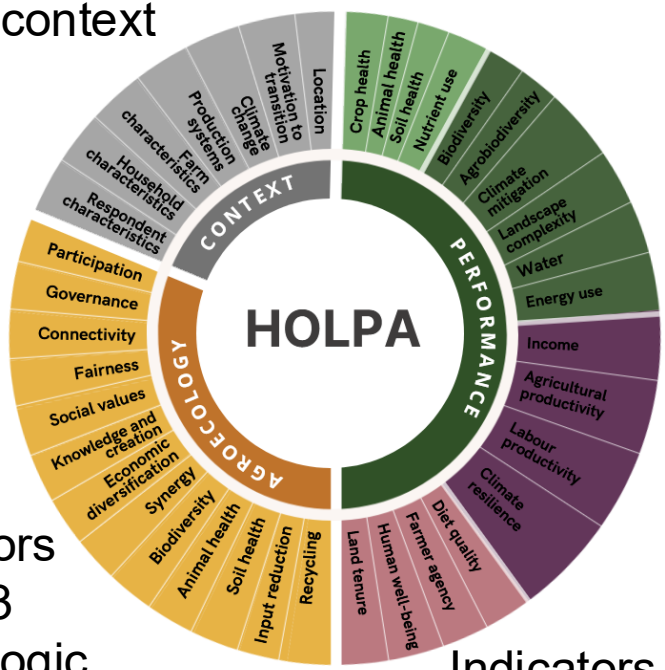
CGIAR INITIATIVE ON Agroecology

Holistic Localized Performance Assessment (HOLPA)

tool for collecting evidence on the impact of agroecology

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4891979

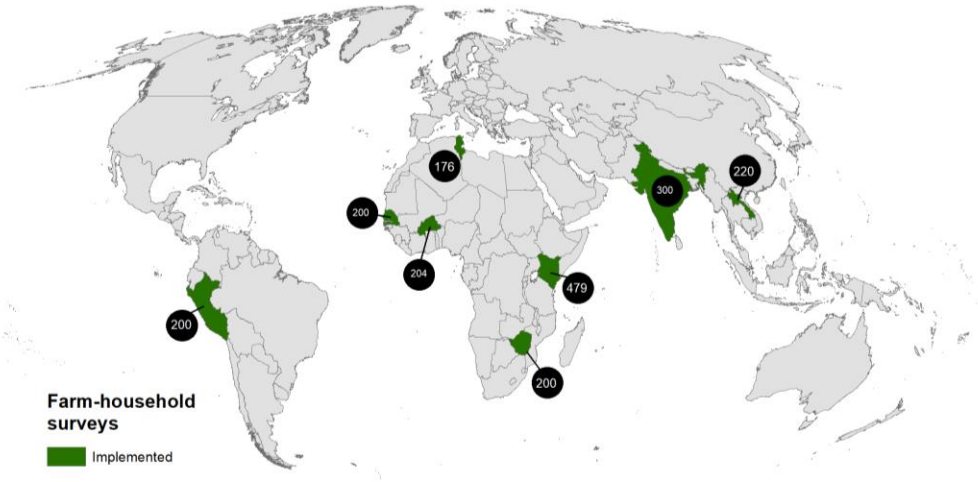
Farm, household and landscape context



Indicators for 13 agroecologic al principles

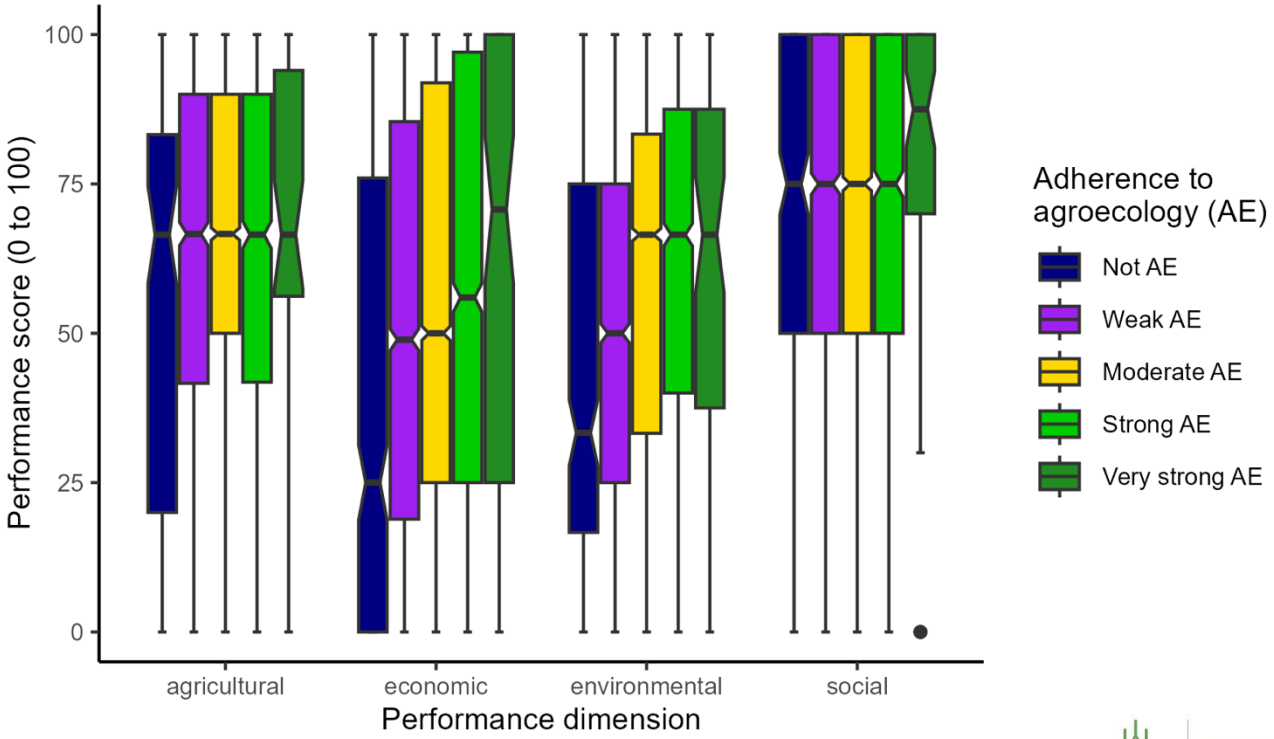
Indicators for 18 performance themes

1979 farm-households across 8 countries



CGIAR INITIATIVE ON Agroecology

Consistent trend towards **higher performance scores with increasing adherence to agroecology**, across economic, environment, and social performance dimensions



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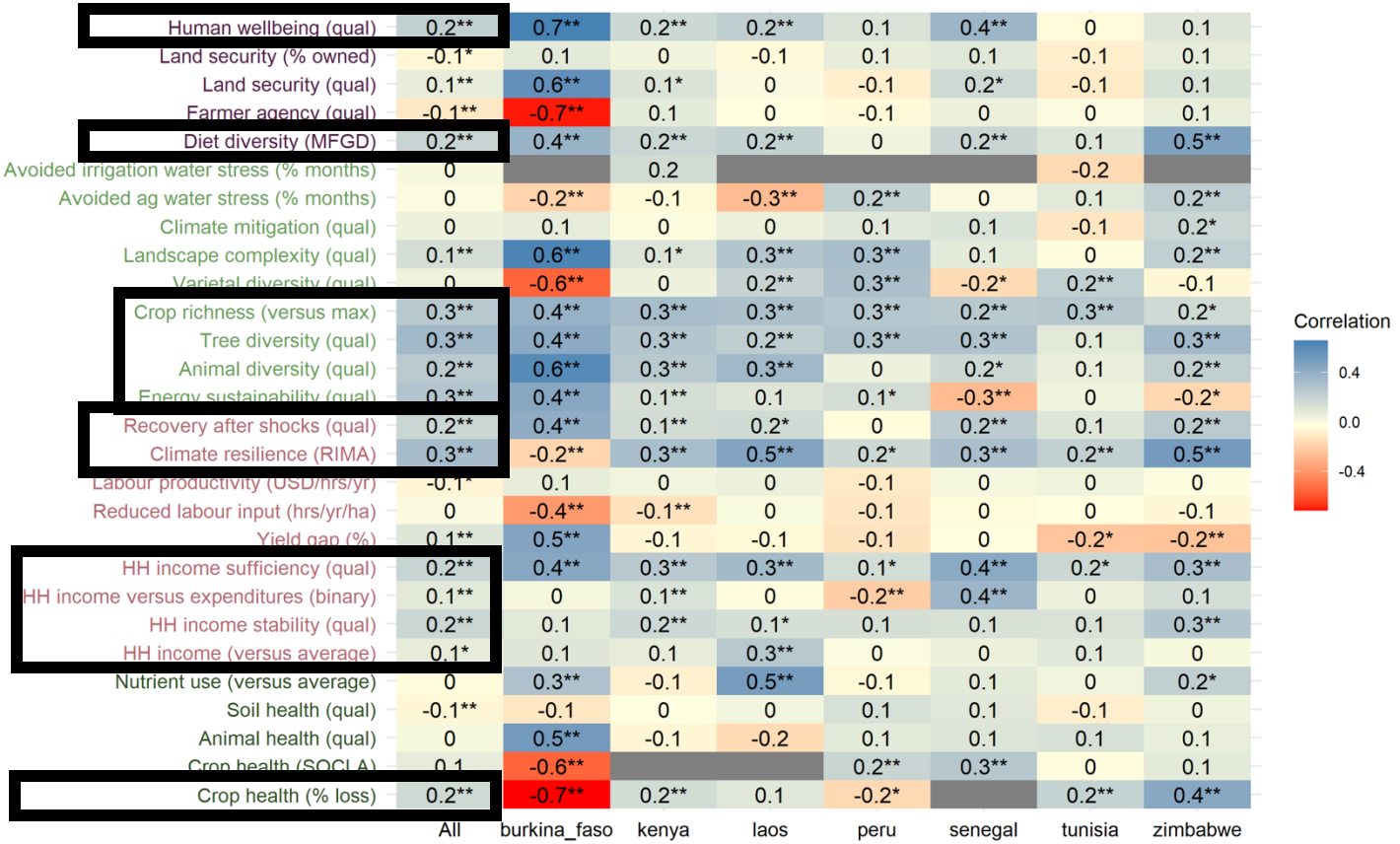
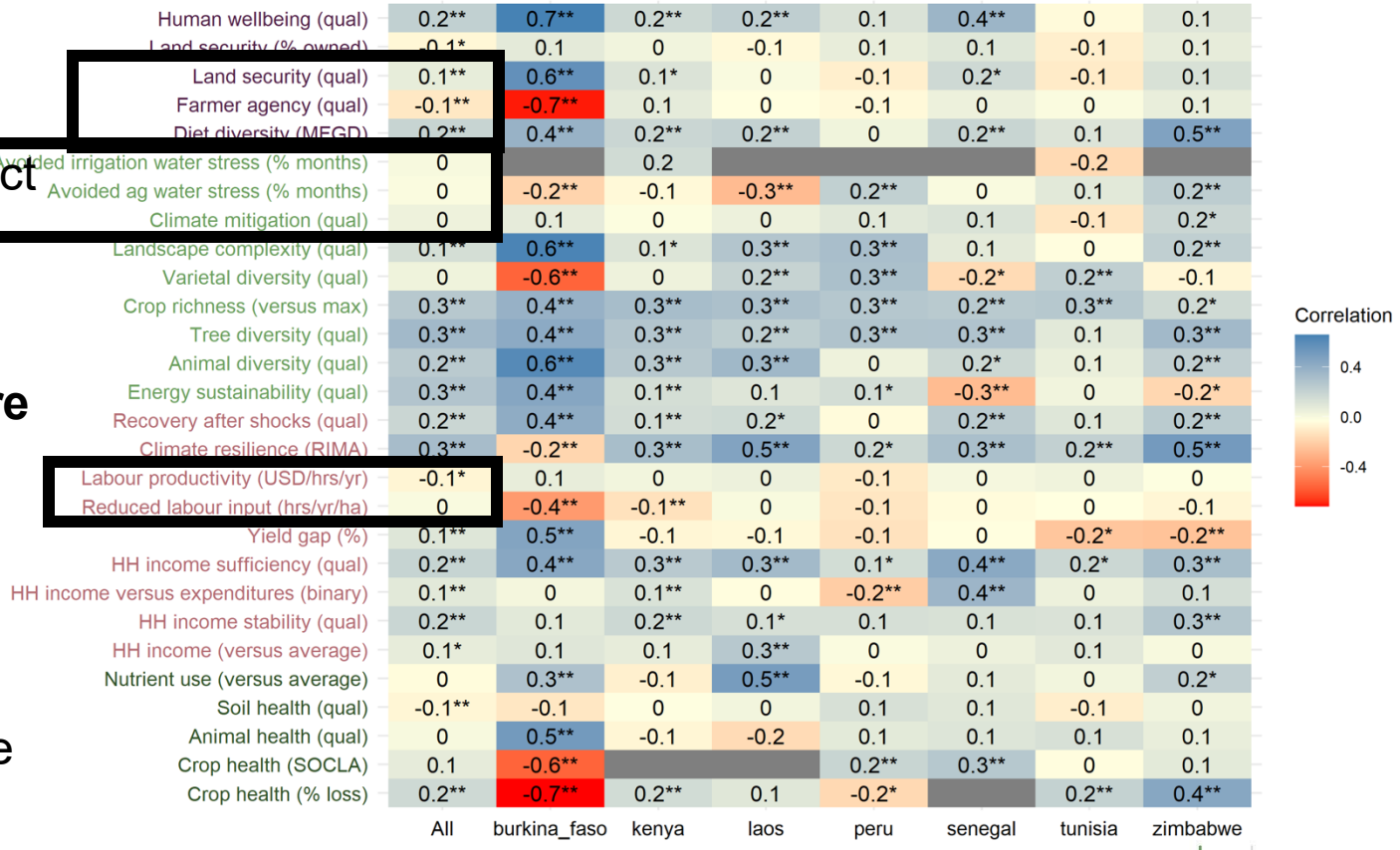
On average, agroecology has a positive effect on **biodiversity** (tree diversity, crop species richness), **energy use**, **climate resilience, human wellbeing, nutrition, income**, and **crop health**



INITIATIVE ON Agroecology
CGIAR

- Mixed/no effect on **climate mitigation or water conservation**
- Mixed/negative effect on **labour productivity, soil health, farmer agency, land tenure security** (or vice-versa)
- Tools matter: depending on the indicators and methods we use we will get different results



CGIAR INITIATIVE ON Agroecology

Outlook on Agriculture
Volume 52, Issue 3, September 2023, Pages 349-359

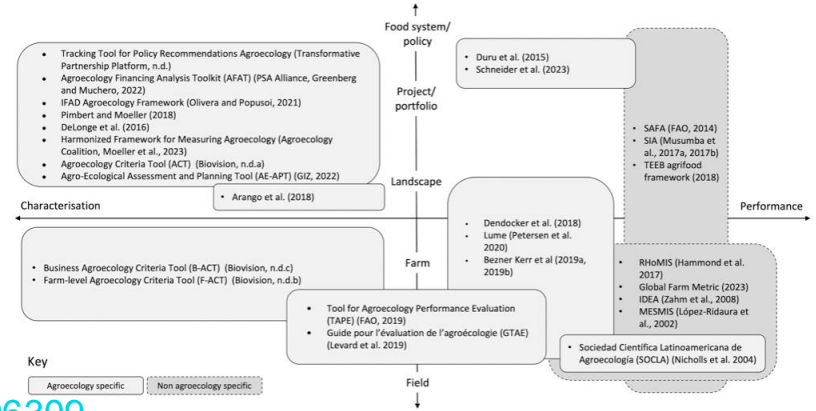
https://doi.org/10.1177/00307270231196309

Sage Journals

Perspectives

Measuring agroecology and its performance: An overview and critical discussion of existing tools and approaches

Matthias S Geck, Mary Crossland [1], and Christine Lamanna



https://journals.sagepub.com/doi/epub/10.1177/00307270231196309

frontiers | Frontiers in Sustainable Food Systems

TYPE Systematic Review
PUBLISHED 25 February 2025
DOI 10.3389/fsufs.2025.1472109

Check for updates

OPEN ACCESS

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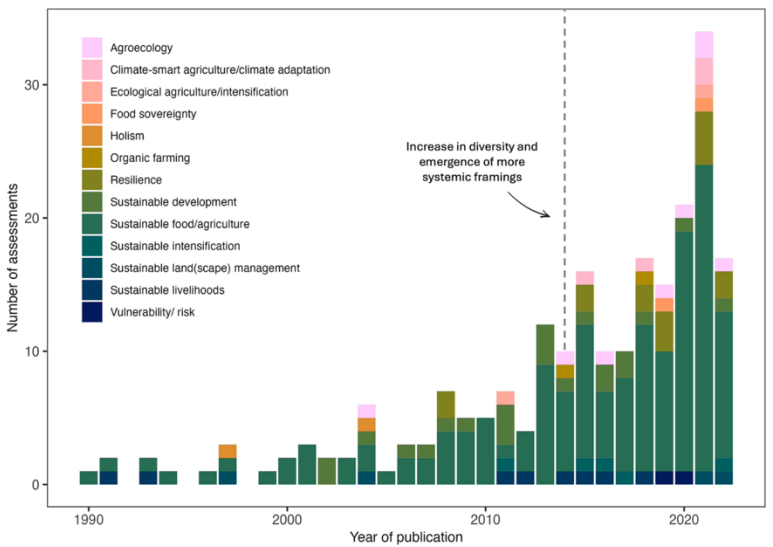
Measuring the holistic performance of food and agricultural systems: a systematic review

Mary Crossland[1]*, Ric Coe[1,2], Christine Lamanna[1], Brian Chiputwa[1], Levi Orero[1], Beatrice Adoyo[1], Sandhya Kumar[1], Victor Mutugi Mwangi[1], Edith Anyango[1], Lisa Elena Fuchs[3], Anne Kuria[1] and Matthias Geck[1]

[1]World Agroforestry (CIFOR-ICRAF), Nairobi, Kenya, [2]Statistic for Sustainable Development (Stats4SD), Reading, United Kingdom, [3]International Center for Tropical Agriculture (CIAT), Nairobi, Kenya



https://www.frontiersin.org/journals/sustainable-food-systems/articles/10.3389/fsufs.2025.1472109/full

The Scoping Study

Aimed to identify barriers and opportunities for assessing agroecological performance and explore how investing in the development of more holistic assessment can support transitions.

- Identify **key actors supporting agroecological transformation** and potential partnerships for advancing the field of agroecology.
- Evaluate their **experiences, interests, and needs** regarding holistic assessments, and identify common **barriers and opportunities**.
- **Review existing metrics**, tools and assessment approaches and identify priority areas for **future research and development**.

Ghana – Burkina Faso – Tunisia

Desk review & stakeholder mapping

In-depth interviews

Engagement Workshops

ICARDA

IDRC · CRDI
International Development Research Centre
Centre de recherches pour le développement international
Canada

CIFOR

World Agroforestry

Stats4SD

TRANSITIONS

This work was carried out with financial support from the International Development Research Centre (IDRC), Ottawa, Canada. The views expressed herein do not necessarily represent those of IDRC or its Board of Governors.

What we found

Need for diverse, cross-sectoral collaboration and a food systems approach that **go beyond production and consumption** to include processing and distribution, which currently receive less attention.

Actors (especially researchers) are collecting data and have relevant methods & tools, but communication and dissemination is lacking. **Need platforms for sharing knowledge** and leveraging each other's experiences (e.g. with different tools, such as TAPE & HOLPA).

Challenges in measuring key agroecological principles. The least measured principles were equity, social values & diets, connectivity, recycling and synergies due to **lack of appropriate metrics, tools and knowledge** on how to measure such aspects.

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Key take-aways

- Embrace a **plurality of definitions** and frameworks
- Harmonise metrics while allowing for **context-specific adaptations**
- Strengthen capacity and **develop guidance** for holistic assessment
- Build **platforms and communities** for sharing knowledge
- Develop easy to use metrics and **tools for the 'hard to measure'**

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TRANSITIONS

METRICS

A project of the Agroecological Transitions Program for Building Resilient and Inclusive Agricultural & Food Systems (TRANSITIONS)

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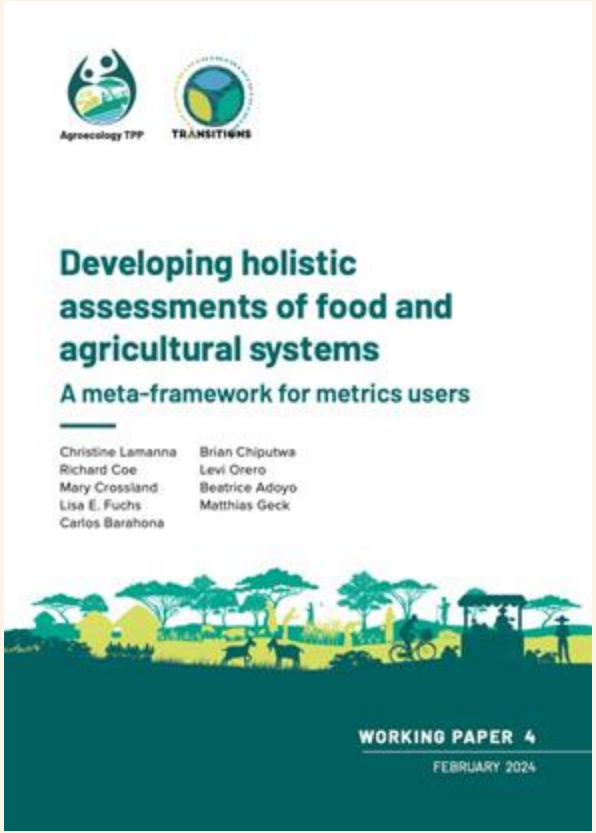
IFAD
Investing in rural people

Stats4SD

Funded by European Union

The Meta-framework

Build your own holistic assessment!



https://www.cifor-icraf.org/knowledge/publication/9081/

Eight principles for designing holistic assessments

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THE PATH

Steps to take to design an assessment system

Framing

1. Define the goals or objectives for the assessment
2. Define system boundaries
3. Decide who will be engaged
4. Chose a theoretical basis

Metrics

5. Identify what matters to measure
6. Select appropriate metrics
7. Select appropriate methods

Data

8. Designing data collection
9. Planning data organization and processing
10. Choosing integration and presentation approaches

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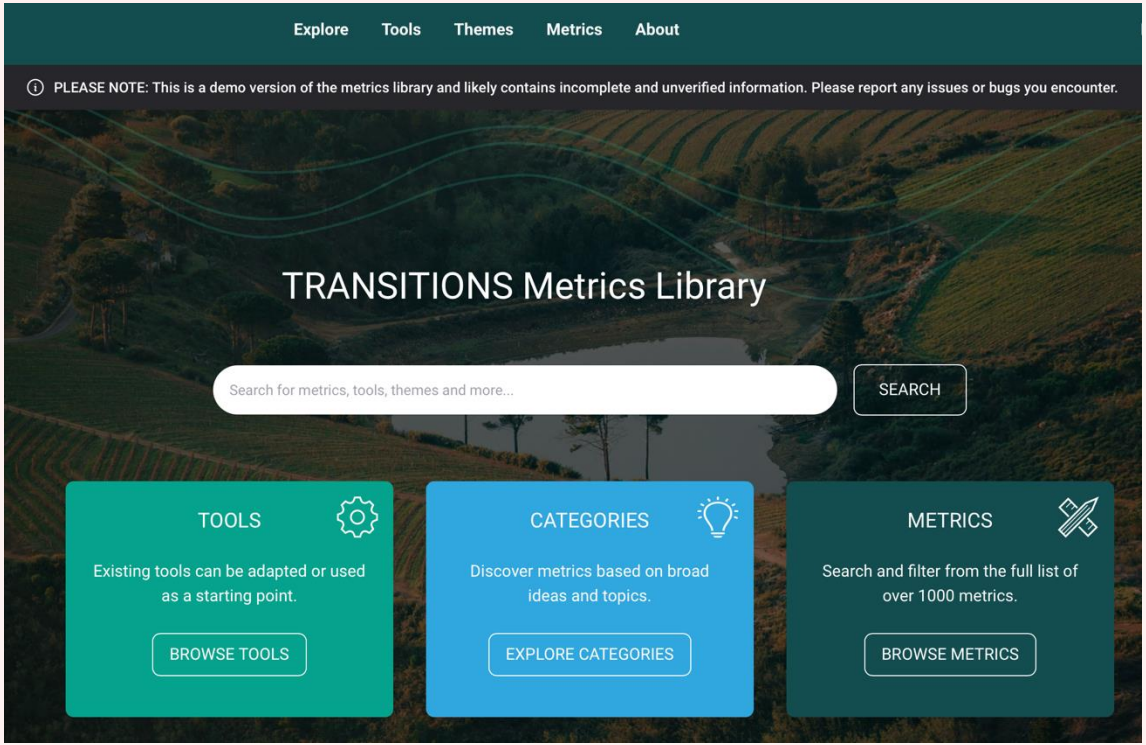
Metrics Database and Library

A one-stop shop for metrics, where users can view, explore and select the right metrics for their needs.

What do you want to **understand**?
What are your **practical constraints**?
What is your **context**?



The TRANSITIONS Metrics Library

What is it?

The Metrics Library is an online database that provides a comprehensive collection of metrics for evaluating the performance of food and agricultural systems. This user-friendly platform will act as a one-stop shop for users to explore, search, and select the most appropriate metrics and tools for their specific needs. The library is aimed at a wide range of users interested in agrifood systems assessment, from policymakers and donors to development actors and producers.

Why is it needed?

While we may already know which aspects of agrifood system performance we want to measure, choosing the right metrics can be challenging. The Metrics Library addresses this gap by offering users the ability to search for metrics based on various criteria, such as the dimension (e.g., economic, environmental, social), theme (e.g., food security, resource use efficiency), or scale of interest (e.g., field, farm, landscape, region). Additionally, the library can suggest existing assessment tools that align with a user's needs and introduce them to potentially overlooked metrics, ensuring a more holistic evaluation.

The Metrics Library is being developed to complement and support the metrics Meta-framework – a step-by-step guide to developing your own holistic assessment that meets your needs.

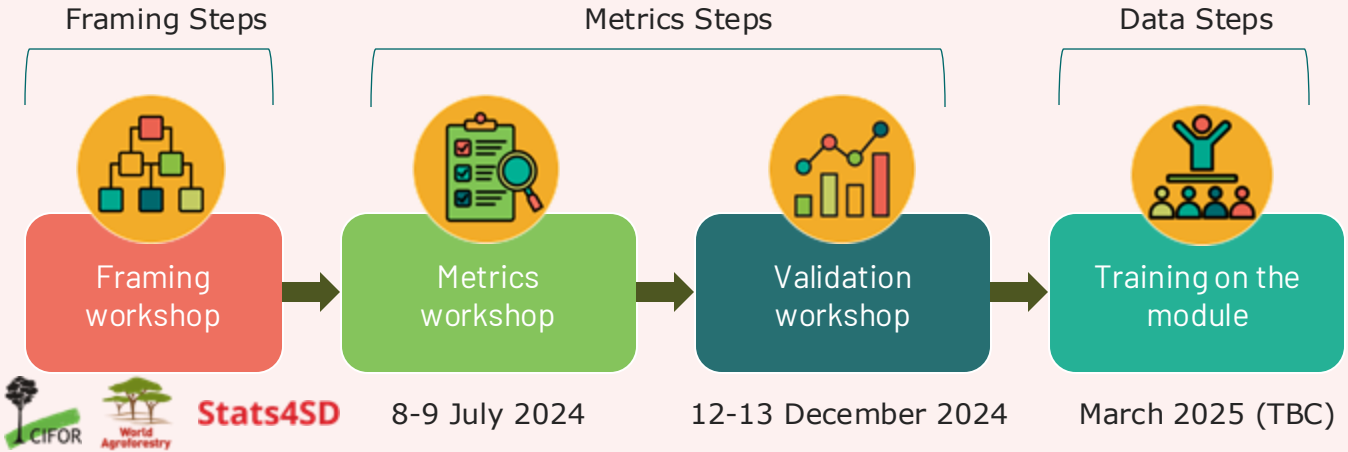
Check out the teaser on the Metrics Library here:

https://www.cifor-icraf.org/knowledge/publication/39378/

The SMART Initiative - Peru

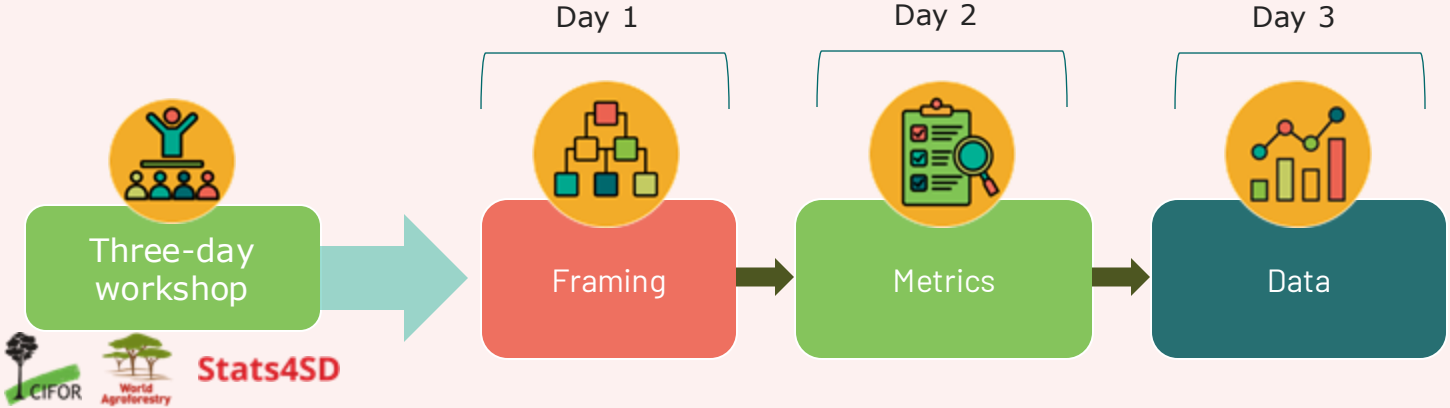
- SMART is a **multi-stakeholder platform** that brings together actors to support the transition to agroecology-based agroforestry in the region of San Martin.
- Using the meta-framework to develop **a module for their online agroforestry knowledge platform** that will provide users with a list of candidate metrics.
- Goal is to guide more **harmonized and holistic assessment among platform** members to allow information sharing and collaborative learning.

SMART includes partners from local, regional and national government, NGO partners, civil society and farmer organizations



M&E framework for the Kenyan National Agroecology Strategy

- Collaborating with the Ministry-led **Intersectoral Forum on Agrobiodiversity & Agroecology** (ISFAA) to develop a **monitoring and evaluation framework** for the recently launched **National Agroecology Strategy for Food System Transformation**.
- Three-day workshop to decide on what to measure to track progress as well as the effectiveness of the NAS-FST implementation.



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Looking forward to enhanced engagements on measuring what matters!

Visit our website agroecologytpp.org