

II. ADVANCE WIDE-SCALE ADOPTION OF AGRO-ECOLOGY WITHIN FARMS AND RANGELANDS

ACTION AREA	FOOD SYSTEMS RESILIENCE
SOLUTION CLUSTER	INTEGRATED APPROACHES TO RESILIENT FOOD SYSTEMS
THEMATIC AREA	AGROECOLOGY FOR RESILIENCE
SUBMITTED BY	FAO

WHAT PROBLEM IS THE SOLUTION TRYING TO ADDRESS?

The world's agriculture and food systems are the opposite of resilient. They are not presently delivering desirable outcomes on food, security and nutrition. It is also no longer feasible to look at agricultural livelihoods, food, management of natural resources and biodiversity in isolation. Agriculture, as currently practiced, is causing massive deforestation, water pollution and scarcities, biodiversity loss, soil depletion and high levels of greenhouse gas (GHG) emissions, and destruction of ecosystems that support all life. Industrial agriculture is putting today's society and future generations in jeopardy.

The 2030 Agenda for Sustainable Development calls for a transformative change in agriculture and food systems to achieve multiple benefits that ensure sufficient, safe and nutritious food as well as stable multifunctional landscapes and respect for human rights. What is needed is a shift to agroecology/regenerative agriculture. This shift is based on extensive science, as well as global practice showing that this approach enhances resilience at the local level, and across global value chains.

Key questions:

- How to operationalize agroecology/ regenerative agriculture at different scales, at different points of time, and in different contexts.
- How to measure the multi-dimensional performance of agroecology and utilize this evidence to elicit change via an enabling framework
- How to scale up agroecology/ regenerative agriculture with interested stakeholders.

WHAT, IN BRIEF, IS THE SOLUTION?

The scaling up of agroecological/ regenerative approaches represents the systemic solution that underpins transformative change and supports socio-ecological transitions towards sustainable agriculture and food systems.

WHAT WAS/ WERE THE SOURCE(S) FROM WHICH THIS SOLUTION EMERGED?

It emerged from FAO's work on agroecology and promotion of sustainable agriculture mandate, along with work on regenerative agriculture by myriad partners around the world. Following a multi-stakeholder consultative process conducted during 7 regional and 2 international agroecology meetings held between 2014 and 2018, expert reviews, and review meetings by FAO's governing bodies held between 2018 and 2019, the 10 Elements of Agroecology framework was approved to guide FAO's vision on Agroecology.

The Scaling-up Agroecology Initiative was launched. The Tool for Agroecology Performance Evaluation (TAPE) was developed to provide metrics to assess of status and multidimensional progress along agroecological transitions to sustainable agriculture and food systems. The entire process was actively supported by collaborative engagement and review by different FAO Units recognizing the catalysing role that agroecology can play as a game changer in this context, building on FAO's work on the topic. Regenerative agriculture has been shown by studies from Rodale Institute, among many others, to be more productive, to be better for rural community development and essential if we are to return massive amounts of carbon in the soil. See appendix at the end for a small sample of the studies documenting the science of agroecology/ regenerative agriculture. This approach is increasingly being adopted by such major companies as Danone, General Mills, Cargill, Walmart and others.

WHY IS ADDRESSING THAT PROBLEM IMPORTANT FOR ACHIEVING THE GOAL OF YOUR WORKING GROUP?

Ensuring the resilience of the food system, and protection of our environment requires accelerating socio-ecological transitions towards sustainable agriculture and food systems. These are holistic and people-centered approaches that embrace a long-term vision, such as agroecology, which is increasingly acknowledged for its potential to bring about transformative changes required to meet the SDGs.

HOW CAN THIS SOLUTION ADDRESS THAT PROBLEM?

Recognizing that the inherent complexity of achieving sustainability is commonly seen as a deterrent to decision-making, FAO has approved the 10 Elements of Agroecology^{16 17} as an analytical framework to support the **design of differentiated paths for agriculture and food systems transformation**. This facilitates improved decision-making by policymakers, practitioners and other stakeholders in differing contexts at a range of levels on a number of scales. Biodiversity, consumers, education and governance are identified as **promising entry points** to build a structured process using visual narratives that rely on the 10 Elements of Agroecology to graphically dissect prospective social-ecological transition trajectories. **Nexus approaches** are used to highlight and examine salient interactions among different sectors and entry points, and to develop **visual narratives** describing **plausible theories of transformative change** towards sustainable agriculture and food systems.

FAO's Tool for Agroecology Performance Evaluation (TAPE)^{18 19} is a tool developed to assess the multidimensional performance of agroecology in order to: **Build knowledge and empower producers** through the collective process of producing data and evidence on their own practices; **Support agroecological transitions** at different scales and in different locations by proposing a diagnostic of performances over time and by identifying areas of strengths/weaknesses and enabling/disabling environment; **Inform policy makers and development institutions** by creating references on the multi- dimensional performance of agroecology and its potential to contribute to the SDGs.

When coupled together, the 10 Elements framework provides a territorial way to think about a food system which can then be assessed using TAPE (with its territorial inference and farm/household level sampling structure). Then, the evidence can be utilized and coupled with the 10 Elements framework to analyse enabling/disabling factors of sustainability and pinpoint key interventions (technical, socio-cultural, production, policy, etc.) for advancing sustainability. Both are aligned with a complex adaptive systems approach to think about, measure, and elicit changes to the food system. Both in turn, support the **FAO Scaling Up Agroecology Initiative**, which provides technical and policy guidance to countries and stakeholders to scale up agroecology.

¹⁶ FAO 2018. The 10 Elements of Agroecology: Guiding transitions to sustainable food and agricultural systems. Rome. <http://www.fao.org/3/i9037en/i9037EN.pdf>

¹⁷ Barrios et al. 2020. The 10 Elements of Agroecology: enabling transitions towards sustainable agriculture and food systems through visual narratives, *Ecosystems and People*, 16:1,230-247, <https://doi.org/10.1080/26395916.2020.1808705>

¹⁸ FAO 2019. Tool for Agroecology Performance Evaluation: Process of development and guidelines for application <http://www.fao.org/3/ca7407en/ca7407en.pdf>

¹⁹ Mottet et al. 2020. Assessing Transitions to Sustainable Agricultural and Food Systems: A Tool for Agroecology Performance Evaluation (TAPE), *Frontiers in Sustainable Food Systems*, 16 December 2020, <https://doi.org/10.3389/fsufs.2020.579154>

Similarly, Savory Institute has implemented a Land to Market approach, training practitioners and equipping them with the Ecological Outcome Verification Protocol to enable them to measure and monitor progress to healthier soil, greater biodiversity, increased water holding capacity and many other metrics.

WHY DOES THIS SOLUTION ALIGN TO THE DEFINITION AND CRITERIA FOR A 'GAME CHANGING SOLUTION' DEVELOPED BY THE SUMMIT?

The fragile system of industrial agriculture has brought humanity to the brink of agricultural disaster. One bad harvest means famine in much of the world. Agroecology/ regenerative agriculture is a resilient approach that can ensure high density nutrition, abundant food supplies, rural prosperity, and carbon sequestration. It is, arguably, THE game changing solution. Its participatory development, integrated complex systems approach, harmonization with other tools and resources, involvement with a myriad of stakeholders (including other UN agencies), data-driven nature, ability to be scaled, adaptive to context variation, and actionability, make it the basis of any sustainable agricultural future.

WHAT IS THE CURRENT AND/OR LIKELY POLITICAL SUPPORT FOR THIS IDEA?

FAO developed all three initiatives/tools at the bequest of member states through governing bodies and through negotiation. In 2018, Member States requested FAO to continue applying agroecology as one of the approaches to implement the five principles of sustainable food and agriculture in support of the SDGs and to assist countries and regions to engage more effectively in the transition processes towards sustainable agriculture and food systems²⁰

Members of the Committee on World Food Security are discussing policy recommendations on "Agroecological and other innovative approaches for sustainable agricultural and food systems that enhance food security and nutrition", to be concluded in 2021²¹

The Scaling up Agroecology Initiative brings together different UN Agencies and stakeholders to catalyse scientific evidence, knowledge and cooperation to support agroecological transitions at different levels (World Food Programme, International Fund for Agricultural Development, Convention on Biological Diversity, UN Development Programme, and UN Environment Programme, World Bank).

The Transformative Partnerships Platform (TPP) launched by France (CIRAD) and the CGIAR (ICRAF), is intended to boost the amount of evidence available on the impacts of agroecological approaches to building resilience of livelihoods and landscapes across a wide range of different contexts.

In 2019, The German Parliament approved a decision to mainstream agroecology in its development cooperation programmes.

For more detail on different governments and Non-state actors implementing agroecology, please visit <http://www.fao.org/agroecology/home/en/>

As mentioned above, the shift of major food companies to regenerative agriculture is a sign of the scalability of this approach.

ARE THERE CERTAIN CONTEXTS FOR WHICH THIS SOLUTION IS PARTICULARLY WELL SUITED, OR, CONVERSELY, CONTEXTS FOR WHICH IT IS NOT WELL-SUITED AT ALL?

The 10 Elements of agroecology framework and TAPE both recognize that options need to be adapted to contexts hence the centrality of **co-creation and sharing of knowledge** to generate robust evidence

²⁰ Report of the 26th Session of the Committee on Agriculture (Rome, 1-5 October 2018) <http://www.fao.org/3/my349en/my349en.pdf>

²¹ <http://www.fao.org/cfs/workingspace/workstreams/agapp/en/>

to support decision making across transitions towards sustainable agriculture and food systems in different contexts.

Regenerative agriculture can be scaled from small holder farmers to large industrial operations, as General Mills is now doing on more than a million acres. Similarly, Cargill, McDonalds, and other are implementing this approach on another million acres. The Savory approach is now used on more than 13, million hectares on six continents.

WHAT DO YOU THINK ARE THE KEY ACTIONS REQUIRED TO ADDRESS THIS SOLUTION? PLEASE MENTION THE IMPLEMENTATION APPROACH FOR 3 LEVELS, IF APPROPRIATE:

Public policies: In order to face the agriculture and food systems complex and multidimensional challenges, policies should:

- i. embrace a long-term perspective and holistic approach of the kind embodied by the 10 Elements of Agroecology framework which guides FAO's vision on Agroecology as one of the ways to promote sustainable agriculture and food systems.
- ii. promote diversification in agriculture and food systems in order to reduce vulnerability to an increasingly changing climate and economic shocks.
- iii. strengthen the adaptive capacity of rural livelihoods, by encouraging co-creation processes that combine technological innovations with local knowledge, experience and valuable practices in the context of new marketing networks and the responsible governance of land and natural resources.
- iv. encourage integrated measurement approaches, such as TAPE, TEEBAgriFood, Ecological Outcome Verification and others in order to capture all the factors that contribute to sustainable agriculture and food systems.

To implement the proposed solution it is important to highlight that these initiatives/tools complement each other. The 10 elements of Agroecology provide the framework for the redesign of the current food and agricultural system to make it more sustainable across all dimensions and with different entry points; the scaling up initiative support the incorporation of this framework into policies to support the transition to agroecology, promotes sharing of knowledge and innovations, while strengthening and building connection for transformative change of the food and agricultural systems in support of the SDGs; the Tool for Agroecology Performance Evaluation TAPE, provides concrete, systematic and relevant data of the current state of the food system, making direct links to the 10 elements of Agroecology, the enabling and disabling environment for agroecology and the SDGs indicators, to inform policy makers about the performance of agroecology across different dimensions, taking into consideration the specific context of territory/country, identifying gaps in the system that can be addressed holistically with these policies, promoting concrete actions and a participatory decision making process with participation of all actors in which Civil Society actions play a major role.

ANY OTHER REMARKS OR COMMENTS YOU WOULD LIKE REFLECTED IN AT5'S REPORT OUT ON 'GAME CHANGING' SOLUTIONS

Funding support: The solution needs to be scaled up via more funding to finalize the TAPE tool, to outscale use of the 10 elements, and upscale the Scaling Up Agroecology Initiative. Other UN partners are already aware of these tools/initiatives but a better coordination mechanism with funding is needed to ensure harmonious implementation. Regenerative agriculture and grazing are a very close to Agroecology. Both provide knowledge and tools useful for farmers at all scales. Agroecology has a long history as a scientific discipline since the 1930s, it's been a form of farming since the 1970s, and it's been a social movement since the 1980s ([Wezel et al. 2020](#)). Furthermore, agroecology has its own organizations (e.g. the SOCLA), formal academic programs (e.g. MSc Agroecology orientation in Wageningen University, The Netherlands), institutions and increasing governmental and societal recognition worldwide.

Regenerative agriculture was recently recognized with its own certification: Regenerative Organic, which is rapidly gaining adherence as the gold standard of healthy food produced in ways that increase the resilience of the food system.