

# FARMER-CENTERED RESEARCH FOR AGROECOLOGY

## Transforming research, reimagining food systems

### LEARNINGS FROM AN INTERNATIONAL ONLINE GATHERING

**In October 2021, the Collaborative Crop Research Program (CCRP) hosted a three-day online gathering of farmers, extensionists, researchers, agronomists, non-governmental organizations, farmers' unions and federations, policy-makers, government representatives, businesses, and more.**

The aim of the gathering was to weave together diverse strands of experience, practice, stories and evidence from farmer-centered research for agroecology. It celebrated accomplishments, asked some hard questions, stimulated learning and engaged people from many different places. The conference was streamed live and translated, in real time, into French, English, and Spanish.

This report provides a synthesis of key themes and findings emerging from the presentations and discussions that took place over three days.

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### Summary: Key Messages Emerged

- Researchers have made progress in placing farmers at the center of research, developing the collaborative skills needed to work with producers to better understand the problem, specify practical indicators, and gather meaningful data. Trust between farmers and scientists is growing as the latter shares both research findings and credit for findings with the farmers. However, farmers are still often excluded from the analysis step.
- Farmers who take part in research tend to actively disseminate findings among their broader networks, especially when these findings are captured in videos in which farmers can see themselves and their environments.
- Effort needs to be made to better involve women and young people to ensure an agroecological transition that is just and sustainable.
- Expanding farmer-centered networks across levels and scales requires a systemic understanding of the role agroecology plays in broader social, political, agricultural and ecological systems. Part of this is understanding that farmers need an income.
- Farmer research networks work. They are contributing to scientific understanding of which indigenous agricultural practices nurture healthy agroecological systems, and why. They are also proving useful for agroecological extension work and for helping farmers to organize themselves to identify and access financial opportunities linked to agroecology, for example, the production of agroecological pesticides and fertilizers.

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## Objectives

The convening process aimed to achieve the following objectives:

- Enhance linkages and synergies with networks of farmers and researchers in support of agroecology-related work by sharing experiences towards operationalizing CCRP FRN principles and practices, and sharing stories and experiences from within and outside the CCRP.
- Expand the agroecology evidence base by sharing practical efforts and results from FRNs and identifying shared questions and areas for future research.
- Strengthen linkages between and across projects, organizations and different agroecology stakeholders at country, region and program level by amplifying and strengthening networks, sharing messages and understandings, and supporting the emergence of shared questions to enhance collective action.
- Increase capacity to influence food systems transformations at local, regional, national and global levels by identifying opportunities that amplify the collective voice of farmer research networks and contribute to greater agroecological transformation.
- Deepen the understanding of what is needed to be effective.



Female farmer of the Farmer Federation FUMA Gaskiya doing participatory selection of pearl millet near Serkin Haoussa in the Maradi region of Niger.



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## Key Themes

### THEME 1: WHAT IT MEANS TO PUT FARMERS AT THE CENTER OF RESEARCH PROCESSES

Involving farmers in the whole research process is one of the guiding principles when convening farmer research networks. But what does this look like in practice? The following themes emerged during the gathering in answer to this question:

- Farmers are involved in decision making throughout the project, including setting research goals. Involving farmers early on helps researchers understand the problem better so that they may co-create research goals that are useful to the farmer. Similarly, involving farmers in selection of indicators will help ensure that the indicators make sense to the farmers in their context.
- Farmers are respected as sources of knowledge. Farmers bring to projects indigenous knowledge that was handed down from generation to generation over centuries. They are also natural researchers, constantly experimenting and trying new ways to complement the old. The role of researchers is to support this natural ability in whichever way is contextually appropriate. This may involve giving farmers funds so that they can organize themselves to pay for transportation if needed, or providing them with mobile phones to facilitate data-gathering.
- Farmers receive credit for their contributions, which are often both material (for example, seeds) and practical (for example, data-gathering). Credit does not necessarily refer to financial reward but to recognition of the role they played.
- Research results are shared back with farmers in ways that are meaningful to them, using formats that enable them to disseminate the findings. Because some farmers cannot read or write, videos are useful for sharing research findings in ways that make sense to them and that they can use to share research findings with others.

**To engage in farmer-centered research, academic researchers need new skills and knowledge, along with respect for farmers' values and trust in their ability to participate meaningfully in research.**

### THEME 2: FARMER-CENTERED RESEARCH REQUIRES THAT RESEARCHERS LEARN NEW SKILLS AND ATTITUDES

Academic researchers need a new suite of skills and knowledge, underpinned by respect for farmers' values and trust in their ability to participate meaningfully in research, to engage in farmer-centered research. These new abilities and knowledge include:

- Facilitation and negotiation skills to find common ground and develop trust-based partnerships with farmers and their broader communities. Trust is built when researchers show a genuine interest in understanding community and farmer priorities and prioritize these in research activities.
- A deep understanding of political and financial power in food systems, as well as the potential socio-economic impacts of agricultural research. Seed custodians in particular need evidence-based advocacy to encourage policies that support seed sovereignty, while

participatory plant breeders have expressed the need for research support in questioning stringent distinctness, uniformity, and stability standards.

- Flexibility, creativity, and patience. Agricultural research can be a slow process that takes several years. Designing research projects that can meet farmers' short-term need as well as longer-term research goals can help ensure sustained interest and collaboration.
- The ability to communicate technical concepts in a way that is timely and resonates with farmers. Farmers actively participate when they understand what is needed of them and why.

### **THEME 3: FARMER-CENTERED RESEARCH IS CHANGING THE AGRICULTURAL RESEARCH LANDSCAPE**

- Farmers are more willing to work with researchers than ever before. At the same time, greater numbers of farmers understand the methods and aims of academic research and are adopting and adapting these practices for their own purposes.
- Farmers are actively disseminating research. When farmers are meaningfully involved at all stages of a project, and when they can see themselves and their work reflected in the research results they actively share their knowledge and findings, both with their neighbors and with family members in faraway communities.
- Program/project-specific goals are better sustained. Examples of this include increases in crop variety and diversity, improvements in community seed systems, and the spread of ecological pest and disease management as an alternative to damaging chemicals.
- Farmers are taking the lead in identifying and resolving issues around seed, food and nutrition security. They are empowered. As Diego Mina of the Institut de recherche sur le développement in Ecuador noted, "We want farmers to be their own voices, to break the cycle of dependency with technicians and engineers."
- In some areas, women and children are more involved in agriculture. However, gender and age are still overall concerns (see Theme 6).

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### **THEME 4: WE ARE LEARNING HOW TO NURTURE HEALTHY AGROECOLOGICAL SYSTEMS**

The transition to agroecology presents a difficult task, made more difficult by policy environments that reward industrialized approaches and work against agroecology principles. However, implementing agroecology has deep and inclusive benefits, and has been found to improve ecosystem processes, strengthen economic drivers and build communities that thrive both socially and culturally.

The gathering highlighted the important role that farmers play in protecting indigenous seed. Farmers are working hard to save the seeds handed down to them from their grandparents and great-grandparents and keep them out of the hands of commercial interests who might interbreed and patent them. Such efforts have served to protect dazzling array of heritage bean and corn seeds.

Producers are also keeping close records of indigenous varieties. This includes measuring all dimensions of the produce and seed, including the length, breadth and width/diameter of produce, the size of seeds and the average weight of the seed. They also are engaged in their own research to determine whether special treatments will help “sick” indigenous seeds germinate.

### **THEME 5: AGROECOLOGY IS NOT A GOAL BUT A DECISION-MAKING FRAMEWORK**

It was noted that agroecology is less a goal than a framework for making decisions. With this in mind, academic researchers were encouraged to:

- Adapt agroecological principles to fit local values and contexts. This might involve using easily accessible and simple materials to produce fertilizer, as an example.
- Create platforms for dialogue that support partnership with and between farmers and communities. Social organizing requires a long process of talking and listening to better understand community and farmer priorities and co-design a way forward.
- Resist pressure for quick solutions. The transition to agroecology takes time. Many multinational donor organizations want projects that offer quick solutions for impoverished communities. However, such solutions often leave communities worse off than before.
- Support producers in establishing seed banks to better protect the catalogue of indigenous seeds that farmers have been preserving for generations from corporate exploitation and extinction.

### **THEME 6: WOMEN AND YOUNG PEOPLE ARE VITAL TO ENSURING A JUST AND SUSTAINABLE AGROECOLOGICAL TRANSITION**

Inclusion is the first of CCRP’s guiding principles, on the understanding that the just transition to agroecological production methods need to include all able and willing participants, including women and young people. It was noted that several different types of power imbalances exist in addition to those between men and women, including imbalances between the old and the young, the literate and those who cannot read, and those who are members of different castes in India. However, even within these imbalances, men systematically have more decision-making power than women, especially within households.

While some speakers highlighted the prominent, even leading role that women play in agriculture in some areas in Latin America, this was not the norm. Contributors from Africa noted that African women as a group are typically excluded from land-use decisions and agricultural benefits, even though they are often also the ones who physically work the land.

Various approaches to ensure the inclusion of women in farmer research networks were suggested:

- Adopting a quota system when selecting farmers can help to ensure the inclusion of a proportionate number of women relative to the population in an area.
- Selecting female project participants based on their age and wealth can help ensure that the most vulnerable and impoverished women farmers benefit from participation.

**The just transition to agroecological production methods needs to include all able and willing participants, including women and young people.**

- Observing who does and doesn't participate in group discussions will enable the facilitator to identify reserved participants who can be approached in a different setting, away from those who hold power in the group, to obtain an honest and open opinion.
- Involve entire families in planning (the family approach) so that everyone in a household can clearly see who contributes to agricultural work and who benefits from agricultural work. This sheds light on power dynamics, inclusion and equity in sharing benefits, while developing social cohesion starting at the family level.

Emphasis is also needed on developing tools to implement, monitor and evaluate gender equity in farmer research networks and research projects. The challenge with young people is that they are often not interested in farming and want to be more secure financially. In Kenya, for instance, the average farmer is over 50 years old, and older farmers find it more difficult to adopt “new” agroecological technologies.

## **THEME 7: A SYSTEMS APPROACH CAN SUPPORT SUSTAINABLE TRANSITIONS AT DIFFERENT SCALES AND LEVELS**

Farmer research networks tend to conduct their research at farm level, often on parcels of land no bigger than two hectares. However, ecological interactions take place at a larger scale. This points to a need to conceptually link adjacent farms, forests, and non-farm land in order to develop an understanding of agroecological interactions at the landscape and territory level. Farmer research networks have an important role to play in this kind of research—especially if they include a broader pool of stakeholders.

First identifying a community's economic/trade priorities and focusing agroecological efforts on that before working to enhance other aspects of the ecological system, helps make the link between livelihoods and agroecology.

For example, if a community values cropping, you would start by working with farmers to build up soils to improve yield. Once this is in process, one can shift attention to other aspects of the landscape such as implementing agroecological

**Getting to scale: Linking farmer research networks with universities so that farmer-centered methodology becomes equally credible as classic research methodologies.**

principles to improve water storage, implement better livestock rearing practices, and support wildlife. This systematic and incremental approach progressively improves whole ecosystems and supports a transition in thinking from scarcity to abundance, and from “me” to “we.”

Additional systems-related suggestions and observations:

- Small-scale farmers hold very little power in the food system. Working collectively to link small-scale producers with consumers presents an opportunity to cut out the commercial middlemen who hold an undue amount of power and increase farmers' income.
- Participatory GIS (geographic information system) mapping and resource flows through and between farms (water, manure, etc.) as possible entry points for systemic thinking.
- Raising public awareness of power imbalances in the food system and the negative ecological consequences of commercial food practices plays an important role in shifting the current global food system. Social media has been an ally in this.





Farmers from South Pokot participate in an FGD on seed systems in Chepareria, Kenya. Photo credit: John Kangogo

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## Promising Research and Innovations

Farmer research networks engage in a wide range of research, peer-to-peer information-sharing and extension activities that focus on various aspects of production. Below is a sample of initiatives, insights, and innovations highlighted during the gathering.

### SOIL REGENERATION

Soil regeneration emerged as an important topic both to improve production and mitigate climate change.

Research conducted by Kenya Agricultural and Livestock Organization found that rotating cereals like maize or sorghum with lablab (a legume) has huge potential to suppress striga growth and fix nitrogen into the soil (>100kg of atmospheric nitrogen fixed per hectare) while delivering additional benefits such as food or striga suppression, depending on the lablab variety chosen.

In Peru, farmer research conducted by Grupo Yanapai and Colorado State University found that planting a mixture of grasses and legumes (annuals and perennials) rather than leaving the earth bare during the fallow season covers the ground and improves carbon fixing while providing forage for livestock. When the area was again used for crops—in this case, potatoes—the yield was also substantially higher. The results were strongest on farms with livestock who use this kind of rotation, and weakest in areas where the soil was too degraded to generate enough cover.

Fermented biofertilizers have long been used in Latin America. Now, this technology is making inroads into Africa, where several networks have conducted research into bokashi. To date, the findings have been promising. Bokashi inoculates the soil with microbes, reducing pests and producing more vigorous plant growth (wider leaves and more seed/beans) than using compost or nothing at all. What makes bokashi especially appealing is that it can be produced much faster than compost using local, readily available material.

## **ECOLOGICAL PEST AND DISEASE MANAGEMENT**

Pests drive farmers to use chemical pesticides. Ecological pest and disease management was identified as a way to control these problems in a way that works with nature while creating economic opportunities.

Ecological pest and disease management can be labor-intensive. Some farmer networks have identified this as an opportunity to produce ecological pesticides and fertilizers to sell to other farmers at a fraction of the cost of chemical pesticides. Others have developed innovative ways to apply ecological pesticides and biofertilizers using a bicycle frame with a boom that holds several nozzles, allowing several rows of plants to be sprayed simultaneously.

## **AGROFORESTRY**

Trees play an important role in managing wind and high temperatures in drylands, which negatively affect soil health and crop growth. Farmer-managed natural regeneration of trees is a promising, low-cost method that works with farmers to nurture existing tree stumps into fully grown trees that provide shade, wind protection and organic matter (falling leaves) for their soils and crops. Further benefits include:

- Bioirrigation, which is when trees bring up water from deeper in the soil at night. This water is then transferred to surrounding crops and soil microbes.
- A reduction in women's labor because women no longer need to forage in distant locations for firewood. However, this is not often considered because women have less control over land in the areas where this method has been tested.
- Insect control because birds are attracted to the trees in the area.

Landscape-level actors (traditional and local government authorities) play key decision-making roles in the success of farmer-managed natural regeneration of trees, but farmers remain central to the success of this approach because they specify what they want to achieve in growing trees, identify which tree species to grow to meet these goals, and share their knowledge about farmer managed natural regeneration of trees.

## **ORDERLY MARKETING**

Farmers are price takers who are exploited by powerful parties further up the food value chain. Rather than compete with each other, it is possible to cooperate with each other and with consumers to cut out these middlemen to ensure that agroecological farmers get a fair price for their produce and consumers get the highest-quality, locally grown organic food. Hansalim in Korea is an example of how such "orderly marketing" can be a success. Of the money earned from selling produce, 80% goes to farmers and 20% goes to organizers. On less than two hectares, farmers are earning a fair living.

## **MULTI-STAKEHOLDER SOCIAL LEARNING**

A supportive policy environment may help accelerate the widespread adoption of agroecology. Lobbying, advocacy, and science-based decision making are important tools for influencing policy decisions. However, these often fail to address democratic representation. Multistakeholder social learning is an emerging method that fills this gap by creating opportunities for learning through social interaction with the people most influenced by policies. Increasingly used in relation to natural resource management, multistakeholder social learning has yielded some promising policy outcomes.



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## The Next Frontier

Scaling of farmer-centered research outputs and methods across territories, landscapes, and systemic levels involves:

- Leveraging farmers' vast social networks and linking farmer research networks with farmers outside of the networks, including possible territory-level farmer research networks.
- Linking farmer research networks with local political and policy processes, especially with regard to seed policies.
- Linking farmer research networks with universities to ensure that farmer-centered research methodology has the same credibility as classic research methodologies. A joint vision for agroecology that includes farmers' and scientists' voices will be much stronger.

Farmer research networks are not just vehicles for agroecological change but also hold potential for sustainable transitions in other aspects of interest to farmers.

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**The CCRP would like to thank everyone who gave so generously of their time, experience, and expertise to create a content-rich event filled fresh thinking and valuable, thought-provoking insights.**

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Members of a farmer research network use mobile phone photos to monitor and report potato pests and diseases in Cotopaxi, Ecuador. Photo credit: Israel Navarrete