

# Agroecology is a Climate Solution!

*Sharing farmers' expertise from Africa, Asia and Latin America*

Scientific evidence indicates that chemical-intensive agriculture exacerbates climate change, contributing to greenhouse gas emissions, while also making our agricultural systems more vulnerable to the stresses brought on by climate change.

## ***Agroecology offers a powerful climate solution.***

This productive, ecologically resilient, economically robust and sustainable approach to farming integrates cutting edge science with local and Indigenous knowledge, innovation and practice, and emphasizes farming in harmony with natural cycles and processes.

Grounded in the principles of food sovereignty, collectivity and justice, agroecology provides both a vision and a foundation for the needed transformation of our food systems, and offers a multitude of pathways that farmers can adapt to their own circumstances.

The case studies presented here have been developed by members of **Pesticide Action Network's International Agroecology Workgroup**, in advance of the UN Framework Convention on Climate Change gathering in Brazil.

The series provides policymakers, partners and the public with concrete evidence of the ability of agroecology to lead the way towards successful climate-resilient farming solutions, while reducing the carbon footprint and greenhouse gas emissions associated with chemical-intensive agriculture.

These case studies showcase the experiences, knowledge and expertise of farmers from **Argentina, Benin, Burkina Faso, Costa Rica, Ethiopia, India and Kenya.**



## **Agroecology Case Studies**

- Agroecological best practices through farmer field schools in Benin
- Mapping agroecological practices in Burkina Faso
- Agroecological pest management in Lake Ziway, Ethiopia
- Climate resilience through agroecology: Fifteen years of community-led sustainable agricultural practice in Kenya
- Scale up agroecology for sustainable and resilient food systems in Kenya
- Agroecological farming practices in Kerala, India: Women leading the way
- Semi-urban organic farming practices of Participatory Guarantee System farmers in Kerala, India
- Agroecology in Argentina: Promoting climate-resilience, protecting health and restoring biodiversity
- Agroecological alternatives for crop management without use of highly hazardous pesticides in Costa Rica

## Recommendations

Across the diversity of case studies, common themes emerged. Farmers shared their hopes and aspirations for ways in which their successes could be seen, understood and taken up by others. With a supportive and enabling policy environment, many of the structural challenges they and other farmers face can be more readily overcome, paving the way for national transformation of food systems and global progress in tackling the pressing issues that the world faces today.

### Key arenas for action include:

- **Policy:** Boost public investments in agroecology; provide incentives and programs to support farmers' transition from chemical-intensive to ecological farming; develop integrated cross-sectoral national action plans with financing for an agroecological transition.
- **Financing & Markets:** Simplify green and organic certification processes and encourage the establishment of Participatory Guarantee Systems; expand access to financing for farmers in transition.
- **Research, Extension & Education:** Support farmer participatory research to generate locally relevant knowledge; reorient extension services to promote agroecological approaches; support establishment of farmer-to-farmer communication and knowledge exchange systems.
- **Health & Environmental Protection:** Protect public and ecosystem health with legal and regulatory frameworks that phase out the use of highly hazardous pesticides; introduce initiatives to promote ecological pest management and restoration of degraded areas.
- **Circular economy:** Promote systems of circular production by leveraging agricultural and organic waste and plant-based inputs to generate energy, organic fertilizer and natural pest control products, and by integrating animals for a more diverse and dynamic system.
- **Ethics:** Promote a holistic view of ecology, where humans are caretakers, not exploiters, of natural resources and where production is not measured solely by economic returns, but by the ability to regenerate soils, nourish communities, and coexist with the environment now and for generations to come.

Farmers emphasize that communities and Indigenous knowledge must be at the center of these policies, programs and initiatives. In the words of one farmer, Marcela Calderón:

***“We are sowing the future, sowing autonomy, sowing life.”***

Additional resource: Marquez, E. 2025. Pesticides and Climate Change: From a Vicious to a Vivacious Cycle. [panna.org](https://panna.org)



**Pesticide Action Network International (PAN)** is a global coalition of over 600 participating non-governmental organizations, institutions and individuals in 90 countries, working to replace hazardous pesticides with ecologically sound and socially just alternatives. Founded in 1982, PAN works to end reliance on hazardous pesticides and achieve health, resilience and justice in food and farming. PAN advocates for agroecology as a powerful solution to the negative effects of chemical-intensive agriculture and the converging planetary and societal crises of climate chaos, biodiversity loss, pollution and failing public health. PAN situates its work within a rights-based approach that prioritizes agroecology, food sovereignty and climate justice.

[pan-international.org](https://pan-international.org)



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