

# ECO

## SPECIAL ISSUE: AGRICULTURE

This special issue underscores the threats and opportunities for agricultural biodiversity at COP 13. National and regional seed laws, corporate mega mergers, new technologies, and climate change represent critical threats to agricultural biodiversity. On the other hand, “mainstreaming agricultural biodiversity,” agroecology, engaging farmers, women and Indigenous People in decision making processes, and seeking creative partnerships to enhance and strengthen community-based seed systems represent important opportunities that must be seized.

## Agricultural Biodiversity: The Mainstream Ingredient in our Food

Patrick Mulvany, ECOROPA

*“We nurture and grow biodiversity in our fields, forests, waters, mountains and deserts, where the greatest biodiversity is often found. For centuries we have safeguarded precious and diverse seeds and animal breeds — through conservation, sustainable use, breeding, exchange and our intimate knowledge of how they perform in the changing contexts of our ecosystems.” - Elizabeth Mpofu, La Via Campesina- 43<sup>rd</sup> session of the Committee on World Food Security*

It's peasants, pastoralists, fishers, forest dwellers, indigenous peoples, urban gardeners and other small-scale food providers who give life to and dynamically manage agricultural biodiversity, above and below ground and in waters. In doing so, they give resilience to our food system- something essential in the face of climate change and other threats.

COP 13 should focus on defending these small-scale food providers and their communities from being engulfed by the biodiversity-eroding industrial food system which only feeds 30% of the people in the world yet consumes 70% of its resources, and whose unjust laws also erode peasant production which feeds most people in the world.

### Turning 'Mainstreaming' Upside Down

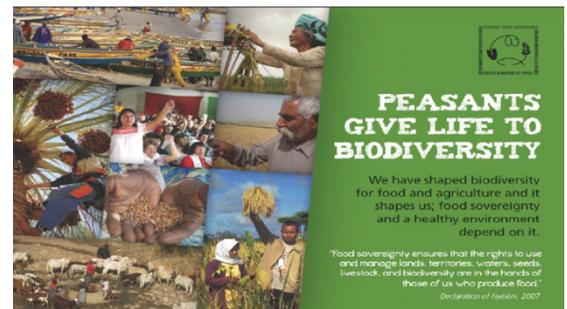
The 'mainstreaming agenda' of the CBD needs to be turned upside down. The debate in this COP should be about how the biodiverse, ecologically-resilient small-scale food production systems of peasant producers, developed in the framework of food sovereignty, could replace industrial commodity systems.

COP13 must not become an opportunity for the agribusiness lobby to drown out the core CBD decisions on sustaining Agricultural Biodiversity. It should reinforce the implementation of past Decisions- such as the landmark 1996 Decision on Agricultural Biodiversity (III/11), its Annex 1, and Decision V/5- which include commitments to the 'development, transfer, and use of technological innovation, in accordance with the precautionary approach'. As such, COP could explicitly reconfirm the *de facto* Moratorium on Terminator Technologies, prevent the release of SynBio organisms, and ban the use of Gene Drives. It could emphasize the negative impacts of perverse incentives, skewed research, patents and other restrictive privileges, and commit to their abolition. It could highlight the impact of damaging agrochemicals and insist that they be withdrawn from use in the food system.

### Defending Agricultural Biodiversity and its Custodians

COP could actually implement its 1996 Decision, in which Parties agreed, *inter alia*, 'to encourage the development and use of technologies and farming practices that enhance agricultural biodiversity'. It could call on FAO to develop a robust Global Plan of Action, based on its assessment of the State of the World's Biodiversity for Food and Agriculture, to send clear signals to the global community that the CBD is in the business of defending agricultural biodiversity, its custodians and their Rights in the framework of food sovereignty, rather than furthering the monopoly privileges of agribusiness and industrial commodity production, the main driver of the loss of agricultural biodiversity.

It's peasants who give life to agricultural biodiversity – the mainstream ingredient in our food.



Read this brochure produced for the agricultural biodiversity working group of the IPC for Food Sovereignty in five languages:

[www.foodsovereignty.org/biodiversity](http://www.foodsovereignty.org/biodiversity)

# Farmers Preserve and Improve Agricultural Biodiversity

Through Participatory Plant Breeding

*Faris Ahmed, USC Canada*

Farmers in the mountainous Yoro region of Honduras have bred and released several varieties of maize that are higher yielding, and more resilient to climate change. Based on local or 'landrace' varieties, *Capulin Mejorado* and *Santa Cruz* produce large cobs, are adapted to high altitudes, but have shorter, sturdier stalks -- which helps them withstand the longer and more unpredictable hurricane season and the risk of being knocked over by winds and ruined by rain. *Capulin* is an indigenous maize variety that already grows well in high altitudes. Farmers collect seeds for the community seed bank to secure a healthy seed supply.

The release of these varieties coincided with one of the heaviest hurricane seasons on record. Many people had almost nothing to harvest, or seeds to sow in the new season. But communities growing *Capulin Mejorado* and *Santa Cruz*, were hardly affected. This is due to the high quality, adaptability, and resilience of these varieties, combined with agroecological farming and conservation practices.

Communities and government officials across Honduras have applauded their success, and have received *Capulin Mejorado* seeds for their own communities.

Farmers on the steep hillsides of the Honduran countryside have proven to be skilled plant scientists. Through continuous participatory breeding and varietal selection, Farmer Research Teams (known as CIALs) have successfully bred and increased on-farm diversity in corn, beans, and other crops, while increasing average yields by 20-30%.

Honduras lies in a biodiversity hotspot, with many native crop varieties, especially of maize and beans. The agricultural biodiversity and plant genetic resources are critically important for food security and nutrition, building climate resilience, and strengthening community food sovereignty.

Farm families participating in the plant breeding program, supported by USC Canada and FIPAH (Foundation for Participatory Research), are using agroecological and watershed management approaches, such as terracing, making and integrating natural fertilizers and pesticides, greater crop diversity, and preserving soil health. As a result, they have managed to drastically reduce what 's known as *los Junios* – the hunger days.

Simeona Perez :  
Indigenous farmer,  
researcher, plant breeder  
and community leader.



## Daily Quotes

**"If farmers do not have access to broad (seed) diversity, including diversity from other countries and continents (that may be necessary for providing traits necessary for emerging novel conditions)... how can we expect crops to adapt?"**

– Cary Fowler, *Stanford University and Chair of the International Advisory Council of the Svalbard Global Seed Vault*

**"Seeds are the first link in the food chain and the repository of life's future evolution. As such, it is our inherent duty and responsibility to protect them and to pass them on to future generations."**

– Nelson Mudzingwa, *Zimbabwe Smallholder Organic Farmers Forum*

## Side Event Today:

Co-Creating Solutions for Agricultural Biodiversity– In Farmers' Fields and at the Policy Table

Session #1920

**Monday, Dec. 12, 2016**

**6:15 pm – 7:30 pm**

Universal Building, 2<sup>nd</sup> floor

Multi-Purpose Room

Join the conversation at side-event, follow it live at #SeedDiversity @COP13MX or contact us directly for more information: [lauren@futureoffood.org](mailto:lauren@futureoffood.org)

[Food and drinks will be served.](#)

[Translation to Spanish and French](#)

# Supporting agricultural biodiversity through community based seeds systems

Ruth Richardson, *Global Alliance for the Future of Food*

The Global Alliance for the Future of Food is a strategic network of 23 independent foundations that have come together to push the agenda for an urgent transition to more sustainable, equitable and secure food systems globally. Our members have varying approaches and perspectives on many issues, but when it comes to the preservation, maintenance, and enhancement of agricultural biodiversity, they agree on a key premise: diverse and robust seed systems are central to sustainable food systems.

When the Global Alliance first came together to map the urgent issues related to a more sustainable, secure and equitable future of food one of the issues that surfaced to the top was seeds. The issues of agricultural biodiversity and community based seed systems are deeply connected to climate change, health and nutrition, food security, the rights of Indigenous Peoples, and the stability of local economies. Seeds are, indeed, one of the foundations of sustainable food systems.

Recognizing this, the Global Alliance commissioned experts from around the world to weigh in on a future that protects and improves resilient seed systems. *The Future of Food: Seeds of Resilience, A Compendium of Perspectives on Agricultural Biodiversity from Around the World*, includes an Opportunities Report by agricultural biodiversity researchers Emile Frison and Toby Hodgkin, as well as twelve commentaries from a diverse range of experts, including farmers, community activists, business representatives, researchers, and scientists.

The authors of the compendium come from a range of world views, but they all agree that the value of resilient and diverse seed systems goes far beyond any economic measure: community based seed systems are connected to diverse cultural and culinary traditions, health and wellness, resilient agroecological landscapes, and sustainable local economies. Maintaining and enhancing seed diversity and agricultural biodiversity is critical in light of the global challenges we face.

Community based seed systems offer our best opportunity for protecting the global food supply in times of accelerating climate change.

Smallholder farmers from different cultures around the world- particularly women farmers and Indigenous Peoples, who often are the keepers of cultural knowledge from generation to generation- harbor a tremendous amount of knowledge of seeds and seed varieties that will need to be passed down to future generations, including effective methods for adapting crops to changes in climate and soil conditions.

Supporting their leadership and the sharing of this knowledge amongst their peers and with the scientific community can help ensure the survival of thousands of commercially unavailable varieties of nutritionally rich foods, many of which are already adapted to handle challenging climate conditions, and some of which have medicinal and healing properties. By investing in these seed systems we can not only bolster threatened cultural traditions but also enrich the diversity in our diets as a global community.

## Towards a collaborative approach to supporting community based seeds systems

The *Future of Food: Seeds of Resilience* compendium lays out these issues in more nuanced detail. Most significantly, it surfaces key themes that cut across diverse perspectives and voices represented by the authors and commentators, and identifies potential pathways for taking collective action:

**Proposal 1:** Develop a coordinated advocacy strategy in support of community based seed systems.

**Proposal 2:** Provide greater resources and support to community based seed systems.

**Proposal 3:** Strengthen the central role that women and Indigenous Peoples play in agricultural biodiversity.

The Global Alliance is exploring the potential of a Shared Action Framework on Agricultural Biodiversity and Community Based Seed Systems that strengthens practice, policy and advocacy at both national and international levels, and connects broadly to other pressing issues such as climate change, agroecology, and sustainable, equitable and secure food systems.

The full publication, key messages and synthesis of findings are available online:

[www.futureoffood.org](http://www.futureoffood.org).



# Comparing Traditional and Modern Seeds

Simon Mitambo, African Biodiversity Network

Under a huge baobab tree, in sight of blooming flowers of the surrounding indigenous shrubs in the beautiful, cool landscape of Tharaka, Kenya, community Elders and farmers met with researchers to discuss the merits of indigenous compared with hybrid seeds. Seeds in this community are sacred as the testimonies of local women attested. One of these, Teresa Makena Daudi, a smallholder farmer, has experimented with hybrids and compared them with her indigenous and traditional crops.

Her quest to experiment with hybrids and her traditional seeds was prompted when she attended a training workshop organized by the Ministry of Agriculture at the Marimanti Polytechnic. In this workshop one of the officials of the Ministry made some allegations that Teresa did not want to believe - the officer claimed that hybrid seeds give better yields compared with local traditional seeds. Through a community mapping exercise supported by the African Biodiversity Network (ABN), Teresa and other members of the community reaffirmed the importance of their indigenous seeds and they realised how much they had lost including seeds. Teresa began to revive these seeds together with the other members of the Kibuka Sacred Site Group, where she is the caretaker. This impelled her to do her own experiment back at home to ascertain the truth of the officer's utterances. Teresa had not done any such kind of experiment before but this time round she was determined to prove whether this was true or not. So, on three separate plots, Teresa compared hybrids and traditional varieties of crops including green gram, millet, sorghum and cowpeas.

The results showed that the hybrids could only reach 80% of the yields of the local varieties, findings that were validated by other farmers, including Sabella Kaguna, defying those who would reject them. Not only do hybrids yield less but wider biodiversity in Tharaka is being compromised by the spread of large-scale mono-

cropping of hybrid sorghum, on commercial farms, which are expanding into and destroying local forests and local food provision.

**These experiments reconfirmed for Teresa that traditional crops offer her community better options for resilience to climate change, and for livelihoods, than the hybrids.**

The results of this research are all the more interesting when you consider that certain traditional varieties of millet like the *mugoi*, *cikaungi* and *mututua* also offer better coping mechanisms for climate change adaptation. These varieties mature early and are harvested while still green but they then bear more shoots and produce almost the same again. The hybrid millets don't have such characteristics.

The research shows that indigenous crops and varieties can produce better yields than hybrids when they are grown under same conditions. These varieties are more resilient and can better adapt to adverse climatic changes. It also confirms conclusively that small-scale farmers, especially women, have deep knowledge of seeds. Scientists and policy makers need to listen more keenly to the voices of these farmers. By regenerating their indigenous crops these small scale farmers are contributing greatly not only to conserving agricultural biodiversity but also improving the resilience of their food system; locally, these diverse, traditional and indigenous seeds are rightfully known as "the seeds of freedom from hunger."



## Must-Read Reports

- **The Future of Food: Seeds of Resilience:** [www.futureoffood.org](http://www.futureoffood.org).
- **Keeping Seeds In People' Hands:** [www.righttofoodandnutrition.org](http://www.righttofoodandnutrition.org)
- **Peasants Give Life to Biodiversity.** Available in Arabic, English, French Spanish and Portuguese: [www.foodsovereignty.org/biodiversity](http://www.foodsovereignty.org/biodiversity)
- **Farmers' Rights to Participate in Decision-Making:** [www.publiceye.ch/en](http://www.publiceye.ch/en)
- **Declaration of the International Forum For Agroecology:** [www.foodsovereignty.org](http://www.foodsovereignty.org)
- **From Uniformity to Diversity:** [www.ipes-food.org](http://www.ipes-food.org)