A Peasant Experience of Rescuing Corn and Other Native Seeds: Defending a Common Good

Catherine Marielle, Manuel López Alavez, Marion Poinssot and Lucio Díaz[1]

Abstract

The regional peasant organization known as the Sanzekan Tinemi (ST) Social Solidarity Association together with the Group for Environmental Studies (GEA) initiated a project in 2001 framed within a regional program for peasant management of natural resources and agro-food systems. ST and GEA have worked together since 1993 in local management of natural resources in four municipalities in the Central Mountain Region of the Mexican state of Guerrero. The purpose of the current pilot project, the Sustainable Food System (*Sistema Alimentario Sustentable*—SAS), is to strengthen a group of 80 peasant men and women from 15 communities who conduct agro-ecological experiments and motivate others in the region to join them. Based on processes of ecological plot planning, their *milpas* become experimental, demonstration plots for developing sustainable practices (organic fertilization, organic pest and disease control, selecting seeds from the field, soil and water conservation, etc.). A key strategic aspect in the transition to agroecology consists of the on-site rescue and conservation of native seeds of corn (maize), beans, squash and chilies, to mention some examples, as regional common goods. A collective seed bank has been established, facilitating the development of inventories of local varieties, experimentation and systematization of different methods of organic conservation of seeds, reflection on more appropriate strategies for rescuing, taking care of and improving seeds, and reflection on the importance of *teocintles* as a source of corn's genetic variability. Monitoring studies are conducted to detect the presence of transgenic corn, and workshops are held to increase awareness regarding the new threats represented by transgenic corn with respect to biodiversity, peasant and indigenous autonomy and everyone's health. These efforts are coordinated with numerous networks of groups that support agroecology and that have come to the defense of Mexico's corn. These networks currently form a broad-based, diverse movement working toward dignified living conditions in rural areas and in cities, and toward the country's food sovereignty.

Keywords: *Corn, sustainable food systems, ecological agriculture, Mexico, milpa, food sovereignty*

[1] Grupo de Estudios Ambientales AC

1. There are always antecedents…

1.1. Ancient 'peasant science'

Since the Group for Environmental Studies (*Grupo de Estudios Ambientales*—GEA) was founded in 1977, it has been interested in *campesino* or peasant agriculture with an ecological focus, traditional agricultural technology and the ancient knowledge of indigenous peasant communities. In GEA's early years Professor Efraím Hernández Xolocotzi passed his knowledge on to us, as he gave seminars and took us on trips through the countryside, and we learned to recognize and value such significant antecedents as: milpa,[2] a traditional agricultural system with ancient roots and based on the complex interweaving of cultural and biological elements; and the traditional knowledge that makes up the *ciencia de huarache*, or peasant science. It is vitally important to understand this science, to learn from it, and to enter into dialogue with it, in order to be able to work in agriculture in Mexico. This recognition was—and continues to be—the starting point for all our work with peasant men and women, and with corn (maize). We combined this experience with lessons from Paulo Freire—"no one teaches another" and "everyone learns from everyone"—to create a dialogue of knowledge. Another vital lesson was to recognize Mexico as a country with exceptional natural characteristics, as the center of the origin of corn and of many useful plants for food, medicine and other uses. It is one of the primary centers of the planet's biodiversity, with a great variety of ecosystems existing parallel to the cultural diversity of the country's indigenous people—who, through their knowledge, have been generous guardians of Mexico's natural, agricultural and cultural wealth.

1.2. End of Mexico's food system

Up to the 1960s, peasant and indigenous communities were able to guarantee their food security, thereby contributing to the country's food sovereignty. However, in the mid-1960s, Mexico started to import basic grains, and soon the Mexican government's last attempt to regulate the agro-food chain—from production to consumption—would end. This attempt was known as the Mexican Food System (*Sistema Alimentario Mexicano*—SAM), designed to guarantee the country's food self-sufficiency. It was implemented between 1979 and 1981, precisely before the government gave in to the structural adjustment policies of the World Bank, International Monetary Fund and other agencies promoting neoliberalism globally. The agro-food policies implemented beginning in 1982, with the State's withdrawal from its old regulatory functions, deepened the contradictions between traditional agriculture and subsistence farming, on the one hand, and modern export-oriented agricultural companies, on the other. Beginning in the 1990s, government policies expelled peasants and indigenous people from rural areas, and created a trade opening that was disadvantageous for Mexican farmers.

1.3. Food dependence, migration and environmental contamination

When the North American Free Trade Agreement (NAFTA) entered into effect in 1994, it further aggravated the crisis in Mexican agriculture and the exclusion of peasant families. The case of basic grains, and particularly corn, illustrates the impacts from the globalization process in the peasant sector, on the environment

[2] A traditional mixed field of corn, beans and squash.

and on what many Mexicans eat. The country's food dependency increased from 18% in 1977-82, to 43% in 1995-96, for basic grains and oilseeds, and now in 2008, it has increased to 50% for all food. The country was nearly self-sufficient in its corn supply before NAFTA (with less than a half million metric tons imported in 1993), however in 2006 ten million metric tons were imported, representing more than a third of national consumption.

Migration, for its part, has radically changed population dynamics in the country's communities, which are being emptied of their young people. More than a thousand people are expelled from Mexico's rural areas every day. Malnutrition and poverty rates are increasing, and living conditions in rural and urban areas are increasingly deteriorating. The Green Revolution was proclaimed as the way to end hunger in the world, through its technological package (high-yield hybrid seeds; chemical fertilizers, herbicides, insecticides and pesticides; mechanization; etc.), however the impacts it brought in the second half of the 20th century were deforestation and soil erosion, contamination of soil and water bodies, loss of biodiversity, and vulnerability to natural disasters.

The Mexican State has abandoned food sovereignty policies, while neoliberal administrations have taken the country to an unprecedented state of food dependency, and have dismantled peasant agriculture. Private corporations have their eyes on the country's indigenous and peasant territories, and the legislative branch implements laws that facilitate these tendencies. The Mexican government's agriculture programs continue to be—in the best of cases—insufficient, partial and fragmented.[3]

The Mexican government promotes transgenic crops, without considering the possible environmental repercussions from these genetically modified seeds, when mixed with native plants, in the case of corn. Nor does the government consider the potential impacts on the health of Mexicans, or the risks of peasants' increased dependency on the transnational corporations that manufacture these seeds and the agrochemicals that go with them.

1.4. Defense of sustainability and food sovereignty

We agree with the definition of food sovereignty proposed by Vía Campesina at the World Food Summit (Rome, 1996), and insisted upon at various forums in the following years. This definition focuses on food sovereignty as a right of peoples, of their countries or Unions or States, to define their agricultural and food policies, without dumping by other countries, and with priority placed on local agricultural production for feeding the population; with access for peasants and those without land to water, seeds, land and credit; as the right of peasants to produce food and the right of consumers to decide what they want to consume, how it is produced and by whom; the participation of peoples in the definition of agricultural policy; and a recognition of the rights of peasants to play an essential role in agricultural production and food; among other fundamental aspects.

[3] After government aid focused on production was abandoned, efforts shifted to promoting programs for fighting poverty. However, resources are assigned on an individual basis, and can thus be used to generate divisions and cause ruptures in the social fabric of communities. Procampo, a government program that has served as the spearhead for agricultural policies, is used simply to issue payments in exchange for planning crops with hybrid seeds and agrochemicals, falling short of a real subsidy for production.

At GEA, we have understood sustainability as achieving ongoing, long-term reproduction of natural and social systems, through a set of multidimensional, socially identified and agreed upon processes aimed at maintaining the dynamic balance of the biosphere, and based on self-determination, social justice, economic viability, cultural and biological diversity, ecological durability, with environmentally respectful technologies—to assure life with dignity for present and future generations.

1.5. The Sustainable Food Systems Program

With these antecedents, and in response to the country's agro-food issues, GEA gradually consolidated its Sustainable Food Systems (SAS) Program beginning in 2001. In this program we established the goal of contributing toward promoting sustainable agro-food systems at different levels, from local to regional, national and international levels, promoting public policies and practices for advancing toward food security and sovereignty in Mexico.

We defend the right of peoples to satisfy their basic need of having access to enough healthy food, and to live in an environment free from contamination. The solutions for reaching these goals are clearly numerous, complex and collective in nature, but they must be built from the grassroots level, involving all social sectors participating in production-processing-commercialization and in the consumption of food, at all levels of authorities and laws, based on socioeconomic, environmental and ethical considerations.

In October 2001, GEA's SAS Program began its activities, with the general objective of:

1) Groups of producers and consumers advancing toward the construction of sustainable food systems, from the local level to the most broad-based levels, using ecological practices throughout the agro-food chain. Also:

2) We agree with others on proposals for public policies oriented toward strengthening the country's food sovereignty, biosecurity and protection of biodiversity, and for incorporating agro-food instruments in rural development policy, directly particularly toward peasant and indigenous agriculture.

This general objective encompasses various inter-related spheres of rural and urban society, and implies taking action through different strategic lines, both locally and regionally as well as nationally and internationally; and through participative research-action; production of printed, video and radio materials; the formulation of proposals for impacting public policies, and the implementation of an SAS pilot project at the local-regional level.

2. SAS regional pilot project

2.1. Principles for working in the region

The Reforestation and Natural Resources department (*Área de Reforestación y Recursos Naturales*—ARRN) of the Sanzekan Tinemi (ST) Social Solidarity Association (*Sociedad de Solidaridad Social Sanzekan Tinemi*) and GEA established a cooperative agreement in 1993. Through their Program for Peasant Management of Natural Resources, they initiated projects in basic research, peasant management of territory and experiments conducted by peasants, primarily in relation to the use of common goods: palm, maguey, soil and water.

The peasants from local communities who work with ST have contributed their knowledge regarding natural resource management, and GEA has contributed scientific and participative methodologies for working from a perspective of *basins*, at the community and regional levels. In 2000 the Assistance for Agricultural Producers department (*Área de Apoyo a Productores Agropecuarios*—AAPA) of ST requested GEA's collaboration in promoting sustainable agriculture. Together, we began to create a comprehensive agro-food proposal and to conduct experiments with interested peasant men and women.
The work has been inspired by GEA's accumulated experience in facilitating projects since 1977, involving research-action efforts, local-regional participative diagnostic assessments and participative planning.

A fundamental starting point for working in the region—that is implicit in the concept of peasant management—is recognition of the diversified strategies of reproduction developed by peasant families and communities. One of the results of these strategies is a decrease in risks. A set of subsystems is simultaneously managed, including: an agricultural plot, family garden, domestic animals, harvesting and hunting, hand-made crafts, the sale of products in local and regional markets, and the sale of labor locally and outside the region. Resources are not specialized, but rather administered in such a way as to carry out all of these activities in a coordinated manner, and thus assure the survival of these families and communities. Another principle is the recognition of the right of indigenous peoples and peasant communities to exercise control over their territories and natural resources, implying respect for their systems of self-regulation through their own norms and institutions.
Our goal is that by strengthening the capacities of local actors, primarily regional organizations, community institutions and peasant families, it will be possible for these actors to better control and manage their territories and natural resources. This is the overall goal that has been the motivation for our work.

2.2. Central Mountain Region of Guerrero

In Mexico a high percentage of forests, woodlands, scrublands and arid areas are found in territories where *ejidal* and communal systems of property ownership as well as peasant management systems are in place. This means that peasants and indigenous in particular are those responsible for managing and making use of the common goods in these ecosystems, and this has led to a series of practices that have contributed to conserving these ecosystems.
The region encompassing the municipalities of Chilapa, Zitlala, Ahuacuotzingo and Mártir de Cuilapan is one of these traditional areas where indigenous peoples have taken refuge, and is currently considered one of Mexico's 300 most marginalized regions. It is located in the Balsas River basin, in the center of the state of Guerrero, with altitudes between 700 and 2,500 meters above sea level, and vegetation consisting of oak and tropical deciduous forests. The population is of Nahuatl origin, lives in highly precarious conditions, with 35% of inhabitants without land, and 32.5% without remunerated employment. More than half of the inhabitants emigrate temporarily to other areas to work part of the year in order to complement their income. Of those who do have land, most have less than one hectare.

The region confronts serious social and environmental difficulties: decreasing size of labor force due to emigration; loss of traditional knowledge and technologies as older inhabitants die and young people are absent; and increasing loss of plant cover, soil and water as a result of intense pressure on resources (erosion, deforestation, steep slopes, extensive livestock production); plus poverty, public policies, community and inter-community conflicts, among other problems.

2.3. Objectives of the SAS pilot project

The general objective of the SAS pilot project is for peasant families involved in the experience to strengthen their agro-food system and their organizational efforts, taking ownership of sustainable practices, from production to consumption.
The specific objectives have been gradually enhanced throughout the first six years of the project, as progress has been made toward developing a more comprehensive vision among the various projects conducted in the region by GEA and ST:
1. Incorporate agro-ecological practices in producing the food consumed by the families involved in the pilot project.
2. Rescue and conserve 'on site' the region's native seeds, as a common good, together with the persons involved in the pilot project.
3. Strengthen the organizational capacities of the persons involved in the pilot project, for producing, processing, commercializing and consuming basic foods (corn, beans, tomatoes, chilies, squash), using sustainable practices and a gender perspective.
4. Advance in the development of a comprehensive focus for sustainable management of the micro-basins where peasant families and communities carry out their activities in agriculture and natural resource management.

2.4. SAS actors

The SAS regional pilot project consists of a group of peasants that has increased in size from 30 (23 men and 7 women) in 2001, to 80 (65 men and 15 women) in 2007. Within the group of peasants involved in conducting experiments, 19 peasant men and women have also made the effort to share their experiences and motivate others in their communities.[4] A group of promoters, including both men and women, has gradually taken shape and become consolidated. Demonstrating the results in their experimental plots, they motivate others to replicate their experiments or to develop their own.
The men and women who participate in SAS activities are ST members. All of them are peasants and many of them have gained experience through the organization's struggles with municipal, state and federal governments, in their fight for the right to live with dignity. They can often be heard relating experiences from their struggle for land, for natural resources, housing and food to eat.

Those who participate have done so voluntarily, convinced that it is possible to rebuild regional peasant agriculture, without depending on agricultural inputs, and

[4] Ahuihuiyuco, La Providencia, Miraflor, El Jagüey and Tepehuixco, in the Chilapa municipality; Topiltepec in the Zitlala municipality; Mazapa, Oxtoyohaulco, Tecoanapa, Tlalcomulco, Totolzintla, Trapiche Viejo and Xocoyolzintla, in the Ahuacuotzingo municipality.

thereby reduce their vulnerability to the climatic and economic conditions in which they live, in addition to chemical contamination.
ST and GEA work to facilitate, promote and assist in this process, with their teams working together in a coordinated manner, combining their skills in agronomy, agro-ecology, anthropology, political sciences, participative methodologies and communication.

3. Forging a path along the way …

3.1. Actions based on analysis of reality

In order to find solutions to the problems experienced by farmers in their agricultural plots—where food is mainly produced—it is necessary for both farmers and the technical team facilitating the process of developing a sustainable food system to arrive at a shared acknowledgement of the socioeconomic and environmental conditions experienced. This is the starting point for working together to develop the strategies to be implemented.
An initial participative diagnostic workshop was held, and the problems identified by farmers were acknowledged and discussed among all the participants. Discussion also focused on the causes of these problems, or in other words, on the farmers' cosmovision of the context in which they live and work, and the issues they face. This made it possible to identify the reality characterizing the region, without focusing on details. The discussion pointed to the way to begin the process, and diagnostic assessment was established as an ongoing process, and has been enhanced through workshops, trips through rural areas and other activities—in ongoing efforts to document the process. The following charts summarize the major focuses of this participative process of regional agro-food diagnostic assessment.

Agriculture

Needs and problems	Memory (how it was previously done) and Experience (what is known about the problem)	Utopia (where we want to go)
Access to land • Most agricultural plots depend on the rainy season. There is very little irrigation. • Not everyone has land for planting. • Most farming plots are located on slopes. • The plots are located far away from villages. • Most have no more than two hectares for planting crops.	• In the past, families planted larger plots of land, and sold the corn they did not need for their families (prices were better).	• Make the best use of the few land plots available, through agro-ecological management and improved task planning (Ecological Planning for Land Plots).
Climate • Rain does not follow a regular pattern, as it did in the past. • Winds blow crops over, and harvests are lost.	• In the past it rained more. The *barreal* soil in the Chilapa-Zitlala micro-basin used to become saturated with large amounts of	• Keep rainwater in the land plots, through conservation methods. • Select corn seed most

	rain, and so inhabitants went to work in Las Joyas as unskilled laborers, since there was more land there for growing crops. • Landrace corn does not withstand the wind as well, and bends over.	resistant to wind.
Soil fertility • Land plots have been seriously deteriorated through physical and biological soil erosion. • Land produces only if chemical fertilizers are applied. • New technologies are ruining the land. • Stubble is burned, and weeds grow. • Land is not plowed correctly, and soil washes away when it rains. • When tractors are used, they compact the soil. • The necessary materials for making organic fertilizers are not available.	• Some more elderly farmers make their own compost material for fertilizing their land. • The use of chemical fertilizers became widespread beginning in the 1970s. • Use of level furrows is a common soil conservation practice.	• Recuperate the soil's fertility by learning to make organic fertilizers. • Use organic material from forested areas and collect animal manure.
Pests • There are times when pests and diseases ruin many crops: fall armyworms, Phyllophaga grubs, white flies.	• It is known that pests are less of a problem when crops are rotated.	• Implement biological control of pests.
Native landrace seeds and agro-biodiversity • Corn from landrace seeds grows tall and the stalks easily fall over. • Many farmers plant hybrids because they are more resistant to wind, and produce higher yields (and the grain weighs more). But seeds must be purchased for every planting, and hybrids bring high yields only if chemical fertilizers are used. • Seeds and grain are conserved with chemical "tablets." • Herbicides are used.	• Agricultural traditions are based on landrace corn of different colors, with various uses in regional stews and in tortillas (red, black yellow and white corn, and corn for making *pozole*). • Cows eat forage from hybrid varieties less. • The presence of *teocintle*, a wild relative of corn, has been detected in the Chilapa region.	• Rescue the tradition of planting landrace seeds. • Select landrace seeds in the land plot, in order to gradually improve local varieties. • Experiment with conserving seeds in a collective bank of native seeds, and in communities, using plants from the region. • Create a regional network of *semilleros* (those who collect seeds). • Conserve and exchange seeds for growing beans, squash, chilies and other vegetables.
Capacities and resources • There is a need for technical assistance and training in resolving farmers' problems. • Economic resources for raising crops are lacking. • There is insufficient family labor for the heavy work on land plots	• Government programs change over time, but they always offer only one technological package: the current strategy consists of no longer subsidizing the purchase of chemical fertilizers, and rather switching to biofertilizers.	• Receive technical consultation, training and follow-up. • Continue researching how to adapt agro-ecological alternatives to available resources.

(conservation work, compost production, etc.) • Government programs are not specifically designed to protect land.		

Family backyard production

Needs and problems	Memory (how it was previously done) and Experience (what is known about the problem)	Utopia (where we want to go)
Producing vegetables • It is not easy to find vegetable seeds. • There are no fenced areas for growing vegetables. • There is insufficient water for drip irrigation. • There is insufficient organic material and fertilizer for seed beds. • Pests damage vegetable crops.	• Vegetable production has been attempted in some communities through productive projects. However, when technical assistance and aid runs out, efforts are abandoned. • The market for vegetables is good.	• Diversify food, process food and sell surplus. • Consolidate women's groups that share vegetable plots.
Raising small livestock • There are no methods for preventing diseases in small livestock; many animals die in epidemics. • Difficulties in organizing open-air space (coexistence of vegetable-growing and animals, plus living areas) lead to sanitation problems and destruction of vegetable plots.	• There are home remedies for curing diseases.	• Organize open-air space, separating vegetable-growing from animal-raising. • Acquire training in raising poultry and preventing diseases.

Livestock

Needs and problems	Memory (how it was previously done) and Experience (what is known about the problem)	Utopia (where we want to go)
Livestock traditions • Livestock represents family savings, and also serves as a work force. • There is little training or "livestock tradition" in terms of management of animal feeding and animal health, or management of pastureland. • The "rancher," who is anyone with more than three cows, can be stigmatized in the community. Confrontation between livestock and commonly owned resources is a sensitive matter in relation to community territory control.	• Even though livestock fulfills the role of maintaining the family's savings, little money is invested in maintaining or improving livestock.	• Resolve current and latent conflicts. • Demystify the notion of the "rancher." • Integrate livestock activity with problems and challenges at the micro-basin level.

Livestock production • Meat production is minimal (beef and goat). • Milk production is marginal. • There are few sources of livestock feed: very limited pasture, forage only available during certain seasons, minimal experience in conservation of forage. • There are animal health problems, due to inadequate feeding and the lack of disease prevention efforts. • Grazing has a serious impact on natural resources (pastureland, water, forests, soil). No one tends to cows as they graze or determines the routes they take. • Livestock is the main source of organic material for fertilizing soil, however collecting manure is difficult when grazing is uncontrolled.	• Previously there were many dairy cattle in Las Joyas that produced milk used to make cheese and cream. • It is believed that corn stubble can adequately feed livestock during the dry season. • Cattle are left to graze freely, while goats are accompanied. • Work animals are better cared for during plowing time.	• Guarantee the savings represented by livestock, by taking better care of animals, providing a more balanced basic diet and preventing disease. • Experimenting with conservation of forage (hay, silos). • Maintain work animals in excellent health. • Increase productivity and profitability of livestock activity conducted by families attempting to raise larger herds. • Diversify food for family consumption (milk, cheese, cream, meat). • Achieve the coexistence of livestock activity with other activities in peasant territory, through community agreements on grazing plans and on access to natural resources (water, pastureland, forests)

Processing, commercialization and consumption of food

Needs and problems	Memory (how it was previously done) and Experience (what is known about the problem)	Utopia (where we want to go)
Processing and conserving food • Fresh food is not available year round. • Families in communities closest to Chilapa purchase vegetables at the local market. In more remote communities, vegetables are sold from pick-up trucks that circulate through the area.	• Some food is conserved through processing; for example, a sweet squash preserve is made, and meat is dried.	• Process food to conserve it, and consequently maintain a variety of food available during the entire year (dried vegetables, fruit and meats; canned vegetables).
Commercialization • Few products are sold, because harvests are minimal and prices have not been established for products.	• Chilapa has been a regional commercial center since pre-Hispanic times.	• Commercialize agro-ecological products harvested and/or processed. • Identify agro-ecological products with a collective label, and actively market them in local and even urban markets.

Food and consumption • In some families the corn, beans and squash grown are not adequate for their nutritional needs for the entire year. • A great deal of junk food and soft drinks is consumed, and diabetes has become a common illness in the region. • Genetically modified products have already been introduced into the peasant diet, primarily through consumption of junk food.	• Most of what is grown is for family consumption.	• Rescue recipes of local traditional dishes. • Eat healthy and consume a variety of food. • Open up opportunities in schools for reflecting on the types of food eaten and genetically modified food.

3.2. Advancing toward utopia: tools and methodology

3.2.1. Ecological Planning for Land Plots

The use of participative diagnostic assessment made it possible to visualize regional and community problems, local resources and peasant knowledge. It was necessary, however, to base this diagnostic assessment on the particular problems, interests and aspirations of participants with regard to their own land plots and lives. This led to a proposal for a methodology that facilitates an understanding of the reality experienced by individual producers and the way they imagine their future from their own perceptions. This methodology is referred to as Ecological Planning for Land Plots (*Planeación Parcelaria Ecológica*—PPE), and it consists of the following steps:

- Identification of the land plot, by the producer, sketched out on paper.
- Presentation, by the facilitating team, of different technological alternatives for resolving the problems detected (for example, harvesting rainwater, practices in conserving water and soil, using organic fertilizers and natural insecticides, etc.);
- A sketch of the land plot, as we would like to see it in the future, in this case in five years, considering the work we will have to do year by year.

PPE follow-up consists of an annual evaluation of work carried out, in order to verify whether it was possible to carry out the plans made, what the results were and how the results were noted (participative indicators).

In this way it was agreed with participants to promote experimental processes to be carried out by peasants, in order to test out various agro-ecological techniques and technologies. The peasants participating in experiments designate land plots for this purpose, with the basic principle of comparing their own results. The idea of experimental land plots developed in this way, with the intention of turning these into demonstration plots, or places that will serve to demonstrate the convenience of using these alternatives to others.

3.2.2. Aspects of work

Progress made toward a sustainable food system gradually generated opportunities for training, reflection, practice, and exchanging knowledge:

Experimental plots: These are the places where peasants have decided to test out different techniques in agro-ecological management. Activities are recorded and agronomic data on crops is also recorded, in two annual visits to experimental plots by technical team.

Experimental seed bank: Located in ST facilities, where experimental tests are conducted in conserving corn seeds and grains by using vegetable and mineral powders from the region.
Regional workshops: Representing the primary opportunity for training and experimenting with practices on a collective basis, with participation by the majority of those conducting and promoting experiments and the facilitating team.
Community workshops: These workshops are offered in the community of an experimenter, or in a new community being approached, when there are many individuals interested in the SAS project. One goal is to strengthen the presence of the community worker, by involving him/her in conducting the workshop.
Peasant-to-peasant exchanges: Exchanges of experiences among peasants take place at the experimental land plots. Promoters also visit other projects in other parts of the country.
Events (fairs, food-tasting events, etc.): All the work teams from ST and GEA that participate in regional projects become involved in the work of organizing these events. The goal is to exchange experiences and products, and for members of these organizations and invited guests to visit together.
Annual evaluation and planning workshops: Participating in the evaluations are members of the facilitation team, department coordinators and promoters. Based on the results from these evaluations, the work is planned for the following year.

3.2.3. Agro-ecological proposals

Proposals should fulfill these general characteristics**:**

- Assist in resolving more than a single need.
- Require a minimal number of work hours.
- Favor autonomy in inputs used and in knowledge with limited access.
- Respect traditional knowledge, and strengthen peasant and indigenous identities.
- Strengthen local institutions and organizational efforts.
- Promote women's participation.
- Do not deteriorate the environment or natural resources.
- Do not negatively affect the health or dignity of persons.

On the basis of these principles, proposals have been gradually developed for resolving the problems detected. Consequently, the agro-ecological proposal is not limited to strictly technical solutions proven in similar situations in other parts of the world, but also includes processes for preserving traditional knowledge.

Problem area	Agro-ecological peasant proposals
Access to land	Produce better crops on available land, seeking to optimize the use of the plot • Traditional *milpa* • Crop rotation • Contour farming • Organic fertilizers
Climate	• Level planting • Plant barriers • Organic material added to soil • Selection and improvement of landrace seeds, with emphasis on resistance to lodging and agro-environmental conditions • Recuperate local knowledge regarding climate, planting times, religious

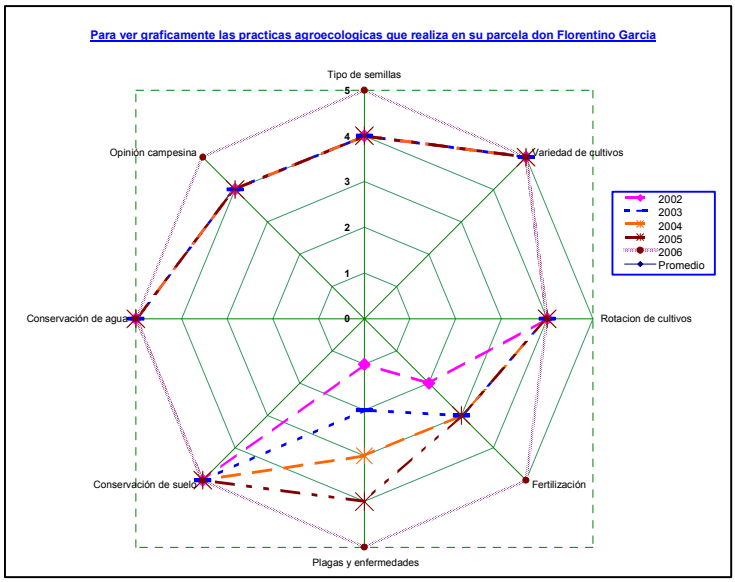
	ceremonies, etc.
Soil fertility	Practices in soil and water management and conservation: • Level furrows • Stone wall terraces • Crop rotation • Traditional *milpa* • Organic material added to soil: moss, raw manure, compost, bocashi, maguey fiber • Liquid organic fertilizers: urine, agroplus, manure and soil precipitates, liquid worm humus
Pests and disease	• Traditional knowledge • Selection of landrace seeds • Biological diversity: Traditional *milpa* • Crop rotation • Repellent (live) plants • Emulsions of chilies, onion and garlic • Emulsions of regional plants with properties that ward off pests
Native landrace seeds and agrobiodiversity	• Production of landrace seeds, primarily for growing corn, beans and squash • Selection of seeds, aimed at reducing the height of corn stalks • Experimental landrace seed bank • Experimentation in conserving grains and seeds • Recuperating the biodiversity of the traditional *milpa* • Reassessing potential of backyard production • Recuperating landrace animals
Vegetable production	• Recuperating practices for local vegetable production in traditional *milpas*, backyards and forests • Training for peasants working with experiments
Raising small livestock	• Training for managing landrace poultry and swine • Recuperating traditional knowledge for sanitary management of farmyard animals
Livestock traditions	• Community agreements • Community planning for grazing
Livestock production	• Nutritional blocs • Forage conservation: as silage, powders from the region's leaves and pods
Processing and conserving food	• Drying and canning food (fruit, vegetables, meat) • Recuperating traditional forms of conserving fruits and vegetables
Commercialization	• Agro-food study, to seek commercialization alternatives • Promotion work
Capacities and resources	• Training of regional peasant promoters • Training of peasants conducting experiments in agro-ecological technologies • Preparing and disseminating audio-visual and printed materials • Technical assistance in planting processes, provided by SAS teams • Strengthening local capacities

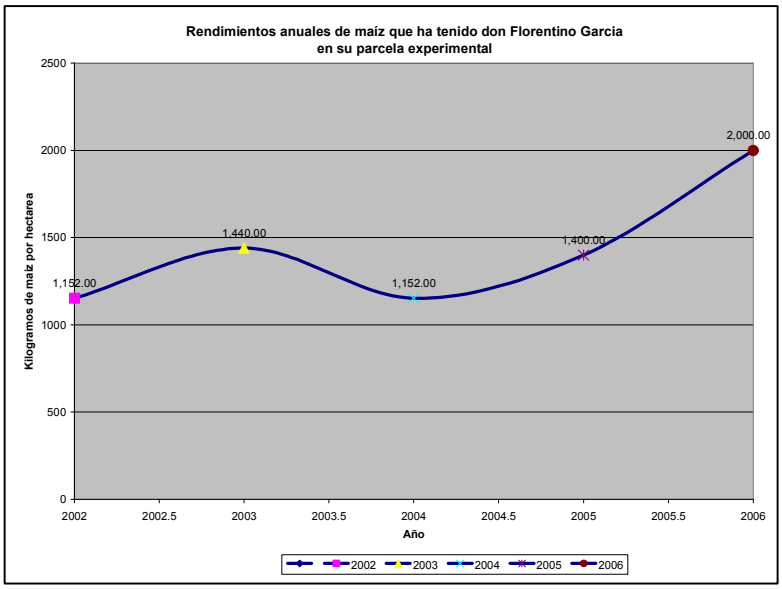
4. Some results and lessons learned

4.1. A process of transition to agro-ecological production

This process has been consolidated in 13 communities in three municipalities. A group of 80 peasant men and women working in experimentation have been trained in restoring soil fertility, harvesting water, managing pests and disease, rescuing and conserving native corn varieties, and other vital sustainable practices. They have also made progress in consolidating their own family food systems. The positive impacts can be measured in each land plot, through improvement in the soil's fertile layer and through crop yields obtained. It is also noteworthy,

however, that in various communities, peasant families are adopting agro-ecological practices promoted by the SAS project and its promoters—even though they are not directly part of the project. We symbolically refer to them as the "other SAS."
We will now look at the case of Florentino García's land plot in Topiltepec. The main activities are focused on recuperating soil fertility (first combining chemical and organic fertilizers, and then in 2006 switching to exclusively organic fertilizers) and on selecting landrace seeds. The same has happened with pest and disease management. The experimenter's assessment indicates his enthusiasm for continuing the process.
Yields vary from year to year, depending on seasonal conditions, but an upward tendency in production can be noted.





Translation of 1st graph:

A graphic illustration of the agro-ecological practices used by Florentino García in his land plot.

Tipo de semillas = Seed types
Variedad de cultivos = Crop variety
Rotación de cultivos = Crop rotation
Fertilización = Fertilization
Plagas y enfermedades = Pests and disease
Conservación de suelo = Soil conservation
Conservación de agua = Water conservation
Opinión campesina = Peasant's assessment

Promedio = Average

Translation of 2nd graph:

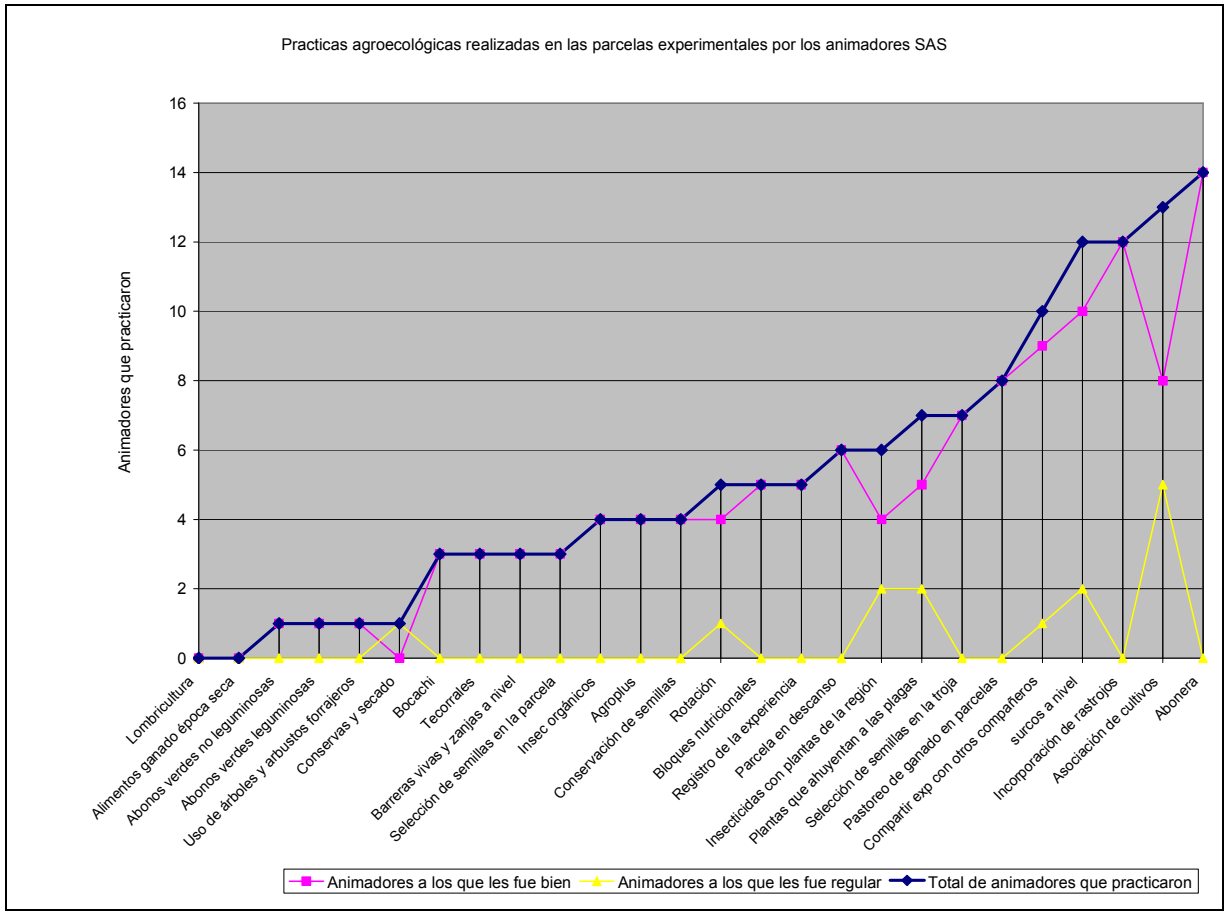
Annual corn yields in Florentino García's experimental plot

Kilograms of corn per hectares

4.2. Preliminary reflection on adoption and adaptation of practices

Agro-ecological alternatives are being created and adapted according to the strategies used by peasant families, their experiences and their available means of production. Many of the practices promoted are dependent on having the necessary family labor available. Others depend on having the necessary material, tools and land, including: how much manure or maguey pulp can be collected for composting; if there are rocks for building stone walls for soil retention; if a mill is available for grinding stubble; how much total land is possessed in order to be able to rotate crops or let a portion of the land lay fallow some years, etc.

The diversity of strategies, family production systems, and community contexts calls for a process of research, experimentation and promotion of diverse, adaptable alternatives.
The following graph illustrates the practices promoted and their adoption by peasant families in the 2006 growing season.



Translation of graph:

Practicas… = Agro-ecological practices carried out in experimental plots by SAS promoters
Animadores que practicaron = Promoters who used practices

Lombricultura = Worm culture
Alimentos ganado época seca = Livestock feed, dry season
Abonos verdes no leguminosas = Non-leguminous green fertilizers
Abonos verdes leguminosas = Leguminous green fertilizers
Uso de árboles y arbustos forrajeros = Use of trees and forage shrubs
Conservas y secado = Canning and drying
Bocachi = Bocashi
Tecorrales = Stone wall terraces
Barreras vivas y zanjas a nivel = Plant barriers and level ditches
Selección de semillas en la parcela = Selection of seeds in field
Insec orgánicos = Organic insecticides
Agroplus = Agroplus
Conservación de semillas = Conservation of seeds
Rotación = Rotation
Bloques nutricionales = Nutritional blocks
Registro de la experiencia = Record of experience
Parcela en descanso = Land plot laying fallow
Insecticidas con plantas de la región = Insecticides made from region's plants
Plantas que ahuyentan a las plagas = Plants that ward off pests
Selección de semillas en la troja = Selection of seeds in granary
Pastoreo de ganado en parcelas = Livestock grazing in land plots
Compartir exp con otros compañeros = Share experiences with others
Surcos a nivel = Level furrows
Incorporación de rastrojos= Incorporation of stubble
Asociación de cultivos = Crop association
Abonera = Compost

Animadores a los que les fue bien = Promoters with good results
Animadores a los que les fue regular = Promoters with average results
Total de animadores que practicaron = All promoters using practices

4.3. Rescuing and conserving local landrace seeds

As progress is made toward sustainable food systems at family and regional levels, with production that is agro-ecological and increasingly autonomous, a key resource are the seeds for corn and other crops—which are safeguarded by each family. In Mexico and around the world, seeds are resources that are highly valued by multinational corporations that produce agricultural inputs. Peasant families, for their part, know that when they use their own seeds, their independence is guaranteed, as well as their freedom to choose what they will produce and consume. Seeds are proclaimed as common goods in every region of the country, and also as belonging to individual families, passed on from generation to generation. Farmers in the region comment that "the seeds are ours."

The SAS pilot project has supported efforts by peasants to preserve local native and landrace seeds, to recuperate those being lost—those which very few continue to plant.

4.3.1. Inventories of native corn varieties

In successive inventories of corn varieties found in Guerrero's Central Mountain Region, the following have been found: *Amarillo Criollo, Arroceño* or *Pepitillo, Blanco Breve* or *Cuarenteño, Cuaresmeño, Blanco Criollo, Colorado* or *Rojo, Criollo* or *Xocoyoltzin, Cristo, Malacate, Morado, Negro Breve, Negro Fojo, Montañero* or *Tepeyaucle, Pozolero Criollo, Xilozintle, Pinto* and *híbridos acriollados*.

The regional agro-biodiversity also encompasses a wide range of plants (beans, squash, miniature tomatoes and *quelites*, a variety of edible weeds) that grow alongside corn in the *milpa*, and others that grow in the family garden or backyard.

BASED ON THE KNOWLEDGE OF PEASANTS FROM GUERRERO'S CENTRAL MOUNTAIN REGION, REGARDING CROPS IN TRADITIONAL *MILPA*

CORN				
Local name for variety	**Color**	**Type of soil it prefers**	**Primary characteristics**	**Uses**
Pozolero nativo criollo	White	*Barreal* *Tezoquite* *Texal* *Tlaltizate*	Grown only in the Central Mountain Region, and in the rainy season. This is the most expensive variety sold in markets in Guerrero.	*Pozole* *Elopozole* Tamales Tortillas *Tlaxcales*
Híbrido acriollado	White	*Texal* *Tezoquite* *Tlaltizate* *Limo*	Grown only in Las Joyas and in the rainy season. Heavier kernels.	Tortillas *Pozole* Tamales
Criollo	Yellow	*Barreal* *Texal* *Tlaltizate*	Delicious eaten on the cob and good for livestock feed. Grown only in the rainy season.	Feed for livestock and poultry, cracked and well ground.
Tepeyantle criollo	Purple	*Texal* *Limo* Clay (*Barro*) *Tezoquite.*	Corn is sweet. An infusion of corn silk is good for the kidneys.	Tortillas Tamales *Pozole* with beans
Criollo	Red	All	Grows tall. Very good for forage. Grown only in rainy season.	"Sweet" *pozole* *Tlaxcales* Tortillas
Breve criollo	Black	All	Corn cooks more quickly than any other variety.	Tortillas Corn-on-the-cob *Pozole* Tamales *Tlaxcales*
Cuarenteño	White	*Barreal* *Texal* *Tezoquite.*	Grows quickly, in 40 days.	Tortillas
Arroceño	White	All types, but little is planted, primarily in Las	Long cobs, high yields, narrow kernels.	Tortillas

		Joyas.		
Pinto	Various colors com-bined	*Barreal* *Texal* *Tezoquite* Little is planted, primarily in Las Joyas.		Tortillas
BEANS				
Local name for variety	**Color**	**Type of soil it prefers**	**Primary characteristics**	**Uses**
Frijol de mata	Black	Black, loose soil *Texal* Clay *(Barro)* *Limo*	Grown in rainy season; has adapted to slopes, hillsides and flat areas; temperate climates.	Tamales *Pozole* Combines with many stews.
Frijol de mata	Black	Black, loose soil *Texal* Clay *(Barro)* *Limo*	Grown in rainy season; has adapted to slopes, hillsides and flan areas; temperate climate.	Tamales *Pozole* Combines with many stews.
Frijol de guía	Black	*Tierra de cerro* *Texal* Clay *(Barro)* *Limo* *Tezoquite*	Grown in rainy season, in both low and high areas.	Tamales *Pozole* Combines with many stews.
Frijol de guía	Red	All	Grown in rainy season, associated with *milpa*.	Tamales *Moles* Soups
Epatlaxtle	Black	All	Resistant to drought, shrub-like.	Tamales *Moles*
Frijol de mata	Tan	All except *Tlaltizate.*	Grown and consumed minimally.	*Moles*
Frijol ejotero	Cinna-mon	Clay *(Barro)* *Tezoquite* *Texal*	Only in areas with irrigation.	Soups Various stews
SQUASH				
Local name for variety	**Color**	**Type of soil it prefers**	**Primary characteristics**	**Uses**
Guisalato	Cinna-mon	All except in cold areas.	Quickly flowers and produces.	With *panela* cheese. With milk. As seeds. Toasted and added to various stews. Sells very well.
Tamalayota	Black	*Tlaltizate* *Texal* Clay *(Barro)*	Vine grows to be large, pulls down other plants in the *milpa*.	Sweetened. As seeds. Used especially on Day of the Dead.
Pipiana	Green	*Texal* *Tezoquite* *Limo*	Produced more in warm areas.	Green *mole*. Sells very well.
Pachayota	Black	Clay *(Barro)* *Texal*	Produced in high, cold areas.	Sweet desert. Canned in vinegar.

		Black, loose soil.		For selling.
Bula	Gray	*Texal* Clay *(Barro)* *Limo*	Planted on ant hills, in temperate climate.	As cups for drinking.

4.3.2. Collective native seed bank

In 2002, during a workshop on selecting and improving seeds in the field, the peasants who conduct experiments in Las Joyas shared their fear of a bad harvest resulting from the drought devastating their micro-basin—that would mean the loss of their seeds. Inspired by testimony from their counterparts from Grupo Vicente Guerrero de Tlaxcala who have organized to collectively conserve their seeds, the peasants from Guerrero decided to build a *Cuexcomate* for everyone, a collective seed bank.

The first norms and rules for functioning were agreed upon among the entire group, and they appointed those who would be responsible for receiving the seeds, taking care of them and providing follow-up. They decided that the seed bank would be located in the ST facilities. More workshops followed, and at each one of them, brochures were prepared with the agreements reached to guarantee transparency to all those participating in experiments.

An interesting aspect was that during the first year, no one went to the collective seed bank to ask for seeds, not even those who had said they would need to. In the end, they had resolved their needs by going to the traditional circuits for exchanging local seeds—through family members, neighbors or friends in their own communities or neighboring communities. In reality the collective seed bank is a technological and cultural innovation with respect to the ancient custom of each family safeguarding its seeds in their home. There is actually no tradition in which groups of people collectively save seeds—and even less so, at a site far from the homes of the members of the group. It became clear that the long process of discussions to establish rules for the collective bank and to assure it would function correctly had been fundamental to the producers' willingness to turn over their seeds—but they had undertaken this new project with the idea of testing it out, but not replacing their long-held customs.

And so, the seed bank was consolidated as a collective space for experimenting and observing the way seeds from each variety responded to the agricultural practices applied, and observing the way they were conserved in different containers and when using different plant and mineral-based insecticides from the region.

Creating and maintaining the collective seed bank has generated a great deal of debate within the group of experimenters. The experience led them to value the region's agro-biodiversity, to recognize collectively the importance of rescuing local varieties, and to acknowledge the threats to Mexico's agriculture arising from national and global contexts. The experience has been vital to gradually building an understanding among the region's peasants as to the risks presented by the North American Free Trade Agreement (NAFTA), by climatic change, and above all, by the invasion of genetically modified corn that is threatening the diversity of corn in Mexico—which is the center of corn's origin and genetic diversification.

4.3.3. Discovering t*eocintle*, a wild relative of corn, in the region

In October 2006 the presence of *teocintle* (*Zea parviglumis*) was detected in the community of Ahuihuiyuco (in the Chilapa municipality). It is known locally as *acintle*, and is perceived as a bad weed that grows along the edges of some *milpas*. Peasants pull out these "weeds" and mix them with other types of forage. This discovery opened up an opportunity to together reflect on corn's origin. "So, it's the mother of corn," a participant commented in one workshop. We looked at the importance of conserving corn's wild relatives—its ancestors—in order to continue to enrich the native varieties grown.

4.3.4. Some results from the experiment in conserving seeds

The loss of grain and seeds provoked by weevils and moths is a problem experienced by producers in the region. Currently, the remedy most used to protect corn is the "tablet," as various chemical insecticides are commonly known: Graneril 21 (Malation 5%), Troje 2000, Quick Phos (aluminium phosphide)… In order to defend landrace seeds, the experimenters determined that it was necessary to protect these seeds from weevils and moths through the use of natural methods.

In early 2005 the first tests were conducted with powders made from plants, ash and lime—materials that the experimenters know have insecticide properties. The memory of peasants in the region establishes that before the "tablets" were used, their grandfathers mixed corn with ash or lime before storing it in their granaries. With these antecedents, in March 2006 another step was taken in this participative experimentation, by incorporating dosages, repetitions and controls. The tests were set up in a workshop with 24 experimenters, each with their seeds to be used in the test. The eleven different powders tested were selected after researching the region's plants and minerals that are useful as insecticides. The experimenters decided which powders to test in their seeds, depending on their own criteria, such as the availability of the remedy in their environment. The methodology proposed by Lagunes et al. (1986) was adapted to the possibilities and interests in the experiment, for use in evaluating plant and mineral powders in rustic conditions. Five grams of the powder for each 100 grams of corn were placed in each jar, and for each treatment, there were three repetitions and a control jar.

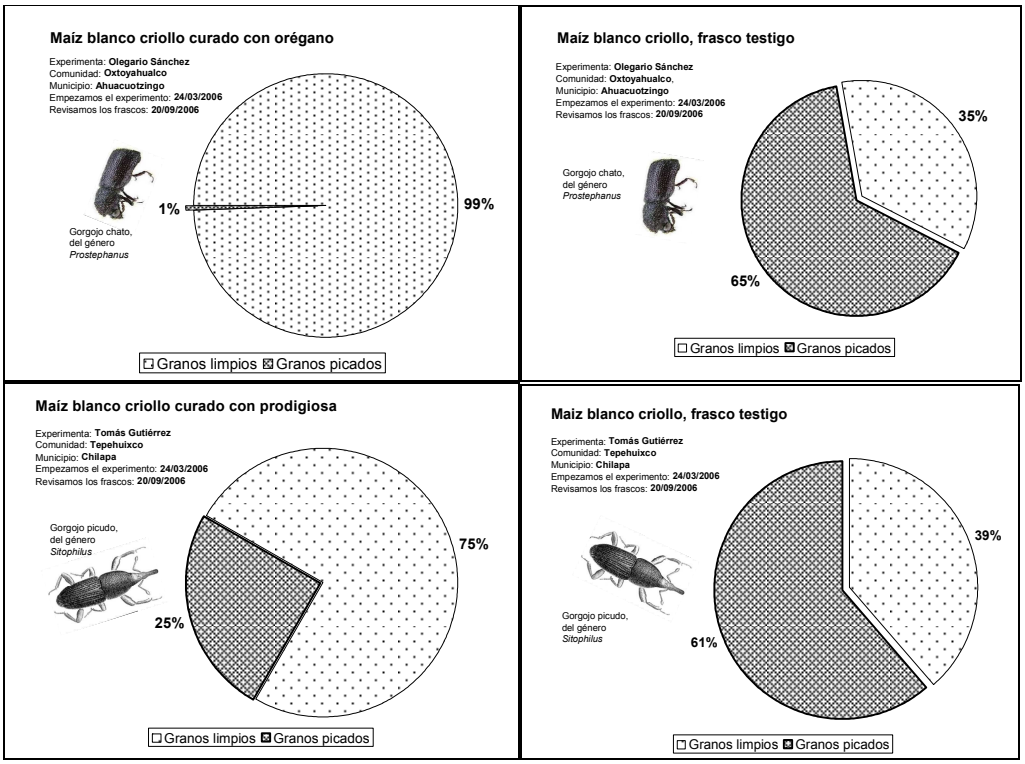
We can see in the following table the combinations of the corn varieties with the eleven powders, for a total of 47 treatments, since the corn samples from the same variety came from different farmers, *milpas* and communities.

TREATMENTS IN THE EXPERIMENT ON CONSERVING CORN SEEDS WITH INSECTICIDE POWDERS FROM THE CENTRAL MOUNTAIN REGION IN GUERRERO

Insecticide powder	Variety of landrace corn						
	Yellow	White	Purple	Red	Black	*Pozolero*	Total
Wormwood	0	1	0	0	1	1	**3**
Lime	0	3	1	2	0	0	**6**
Ash	0	1	0	1	0	0	**2**
Cimonillo	0	3	0	0	0	0	**3**
Epazote	0	2	1	1	1	0	**5**
Garañona	0	0	1	0	2	0	**3**
Manrubio	0	3	0	2	1	0	**6**

Oregano	1	3	1	1	1	1	**8**
Prodigiosa	1	4	2	0	0	0	**7**
Rue	0	1	1	0	1	0	**3**
Epazote + Cempasúchil	0	1	0	0	0	0	**1**
Total	**2**	**22**	**7**	**7**	**7**	**2**	**47**

Six months alter the seeds were placed in the jars with their respective powders, the jars were opened. The clean seeds and those with holes were separated and counted, and the insects found with the seeds were identified.
Following are the results from the combination of two white corn varieties with two plant powders and the respective controls.



Translation:

Maíz blanco criollo curado con orégano = White landrace corn treated with oregano
Maíz blanco criollo curado con prodigiosa = White landrace corn treated with *prodigiosa*
Maíz blanco criollo, frasco testigo = White landrace corn, control jar
Experimenta = Experimenter
Comunidad = Community
Municipio = Municipality
Empezamos el… = Experiment began on
Revisamos los… = Contents of jars were reviewed

“Pointed” weevil from Sitophilus genus
“Snub-nosed” weevil from Prostephanus genus

Granos limpios = Clean corn
Granos picados = Corn with holes

The three main insects that damage seeds—the pointed and snub-nosed weevils and grain moths, belonging to the Sitophilus, Prostephanus and Sitotroga genuses, respectively—were identified.
The life cycles of these pests were schematically reconstructed, and it was concluded that the life stages most appropriate for attacking these insects are the egg and larva stages. Emphasis was placed on preventative practices related to the grain’s moisture and sources of contamination. The traditional practices previously used are very noteworthy, even though they were abandoned when “tablets” were used instead. The technical explanation of the practices used by previous generations sparked interest in reviving them:

- Harvesting at full moon: grains are harder, corn cobs are drier, and insects are without water.
- Drying corn cobs in the sun, complete with *totomoxtle*: the insects’ eggs will die when exposed to the sun’s rays and warmth, corn cobs will dry, and again, insects are without water.
- Applying ash to corn kernels: the grain is dried and the grubs die upon contact with the ash, with their breathing made more difficult.
- Applying powders from insecticide plants: the powders kill the eggs and grubs found among the seeds.

In this process we have found ourselves confronting the complexity of agronomic-peasant experimentation. The data we have obtained do not, of course, have statistical validity, but they do suggest that some of the powders act as insecticides. Nevertheless, there are many variables involved in the resistance of seeds.

4.3.5. Biomonitoring in the region

In October 2001, at the same time that the SAS pilot project was initiated in Guerrero’s Central Mountain Region, it was publicly and officially reported that native corn varieties in the communities in the Sierra Juárez of Oaxaca and Puebla had been contaminated with genetically modified corn. Following the news, we conducted an initial biomonitoring process in the *milpas* of the experimenters in our region who were willing to participate, to detect any presence of transgenic corn. The 25 samples of landrace corn varieties from the 2002 harvest, collected by 16 peasant men and women from six communities, were found to be free from transgenes corresponding to commercialized varieties.
In a second biomonitoring process conducted with the 2006 harvest, no transgenes were found in the eleven landrace varieties and one hybrid variety sampled. In our third biomonitoring process, 64 corn samples were collected: 49 from the 2007 harvest, nine from hybrid seeds sold in the region, four from grain commercialized in bulk at the Chilapa market, and two from grain distributed by DICONSA. Once again, no sign of contamination from commercial transgenic corn was found in any of the samples.

These biomonitoring experiences, together with studies by other organizations that have confirmed contamination in various Mexican states, demonstrate how difficult it is to detect transgenic contamination in national territory, due specifically to the high costs of conducting analyses, the technical complications and the uncertainty of results. It is clear that it is basically impossible for producers to determine if transgenes have been introduced into their *milpas*. The biomonitoring activities we have conducted have led to community discussions and meetings on genetically modified corn, to consider questions such as: what it is, why it threatens local corn varieties and local residents, how it might affect the health and food sovereignty of residents, what prevention measures are within our possibilities, and why and how to defend native corn.

So far, we have focused on sharing some of our results and reflections on our regional experience in working toward sustainable food systems, especially those related to the work of rescuing and conserving native corn seeds. This process is part of a comprehensive regional program of peasant management of natural resources and agro-food systems, based on diagnostic methodologies and participative planning.

Behind our regional experience, the need to rescue landrace corn seeds and restore food sovereignty is a challenge for all of Mexico, and many organizations and networks in civil society have become involved in these efforts.

5. Building networks to defend corn and food sovereignty

Organized civil society is making great efforts to defend corn and demand the country's food sovereignty, at local as well as national and international levels.

5.1. Exchanging experiences

We have presented the results of our regional work in Guerrero, involving the communities there, and in other regions of the country, demonstrating with this and other examples that it is possible to produce food in a sustainable manner, and that there are already successful experiences in many places.

Making this information known contributes toward weaving connections with many other peasant and indigenous organizations and communities working in agro-ecology and in rescuing native seeds in other regions, and this serves to strengthen the defense of native corn varieties and food sovereignty.

Throughout all these years working on the issues of biosecurity, genetically modified crops, agro-biodiversity and food sovereignty, a fundamental aspect of this work has been to demonstrate concrete results achieved at local and regional levels, and in this way influence public opinion through communication media, in lobbying efforts and at diverse forums for public discussion.

5.2. Production and dissemination of information on transgenics

Through videos, brochures, magazine articles, radio coverage, press conferences, presentations at conferences and workshops held in schools in Guerrero, we have contributed toward raising awareness regarding the risks presented by the introduction of transgenic products in agriculture and food, for broad sectors of society. These efforts to make information known have clearly contributed toward enhancing the influence we can exert on public policies, although there is still a great deal of work ahead…

5.3. Influencing public policies

In order to have an impact on public policies dealing with biosecurity, GMOs, conservation of agro-biodiversity (with emphasis on corn), sustainability, food sovereignty and adopting an environmental perspective in agricultural policies, it has been very important to consolidate strategic alliances among civil society organizations (of peasants, indigenous, environmentalists, consumers and independent scientists). The goal is to open up a public debate on these issues, in the National Congress as well as in various spheres of the federal executive branch. As a result of broad, diverse coordinated actions, we have obtained some successes, as described below:

5.3.1. With regard to transgenic corn and biosecurity

1. Popular Denouncement before the Federal Attorney General for Environmental Protection *(La Denuncia Popular ante la Procuraduría Federal de Protección al Ambiente)* due to transgenic contamination of Mexican corn varieties (2001).
2. Ratification of the Cartagena Protocol on Biosafety (2002), an international treaty that recognizes the Precautionary Principle.
3. Recommendation from the North American Commission for Environmental Cooperation (CEC) to establish a moratorium on the planting of transgenic corn in Mexico and to cease all imports of transgenic corn in grain form (maintaining only ground corn imports), and to conduct environmental and health impact studies, in relation to Mexico's special conditions as the center of the origin and genetic diversity of corn, and due to the importance of this crop as the Mexican population's basis for life.
4. Opening of forums for public discussion on the Law on Biosafety and GMOs (LBOGM) in the National Congress during a three year period (2003-2005). Although what is known as the "Monsanto Law" was eventually imposed, we were able to include some restrictions which, to date, have contributed, together with other actions, to hindering the release of transgenic corn in the country's agricultural fields.
5. A rejection of LBOGM and RPEM Regulations, declared illegal and counterproductive to the nation's interests in safeguarding native germplasm (2006).
6. The suspension and cancellation on three occasions of permits to the Monsanto corporation, which Mexican authorities attempted to illegally authorize, and would allow the transnational corporation to grown transgenic corn in INIFAP experimental fields (in other words, in public plots) located in the country's three northern states (Sonora, Sinaloa and Tamaulipas), as a step toward commercial planting (2005-2006).

5.3.2. With regard to the issues of agriculture, trade and food sovereignty

From the end of 2002 and throughout 2003, a strategic alliance with the peasant movement "Rural Mexico can't take any more," favored the inclusion of agro-environmental proposals in the National Dialogue on Rural Areas, as well as widespread rejection of transgenic corn. Although this national movement did not continue after the signing of the National Rural Agreement—which instead provoked ruptures between the peasant organizations involved—the antecedent of well-substantiated demands and of alliances among peasant and environmental organizations is reflected in the current struggles that come together in diverse

circles of allies, among which GEA intends to play a "bridging" role. We are involved in various joint initiatives:
1. Network in Defense of Native Corn (*La Red en Defensa del Maíz Nativo*),[5] created in early 2002, brings together indigenous communities and organizations, and civil society organizations (CSOs) in actions of resistance to transgenic contamination and policies designed to put an end to peasant and indigenous agriculture.
2. The "Voices of Food Sovereignty" Group for Influencing Public Policy, promoted by the Program for Exchange, Dialogue and Consultation on Sustainable Agriculture and Food Sovereignty (PIDAASSA-Mexico) since August 2006, coordinates efforts among an important network of peasant and indigenous organizations dedicated to sustainable agriculture and the defense of food sovereignty, and numerous CSOs sharing this goal.
3. National Campaign in Defense of Food Sovereignty and the Reactivation of Mexico's Agriculture ("Without Corn, We Have No Country"),[6] has been convoked by a coalition of peasant and environmental organizations and individuals, in the context of a complete re-opening of NAFTA.

5.4. International actions against transgenics

We would like to emphasize the importance of two particular initiatives, although they are not the only examples of successful coordinated efforts in recent years:
1. The international network created among EED counterparts in the Joint Advocacy Project (JAP) has not only facilitated communication between European, African, Latin American and Asian countries with regard to the contamination of the center of the origin and genetic diversity of corn (as one of NAFTA's impacts on Mexico's agriculture), but it has also contributed elements to the discussion on traditional knowledge, biodiversity, food sovereignty, TRIPS and the WTO.
2. The Joint International GMO Day (JIGMO) commemorated in 2006 and 2007 has also contributed to disseminating information regarding actions of constructive resistance around the world, thereby strengthening local actions. In 2006, this international day in opposition to genetically modified organisms was commemorated in 300 cities in 40 countries. In Mexico, we used this occasion to enhance coordination and alliances among producers and consumers, with the First Fair for Transgenic-Free Food (in eight cities in Mexico). At the fair we launched a seal specifying "no GMOs – Transgenic-Free" to be used in labeling by producers and companies committed to avoiding the use of GMOs in their food products.
Another significant international example has been the rejection of Terminator technology through a widespread world campaign (March 2006).

6. Challenges and prospects for food sovereignty

These are only some examples of the transition to agro-ecological production, through the systematization, production and dissemination of useful information for peasant and indigenous communities and for urban residents (producers and consumers), and of the pressure exerted on federal government branches to move toward public policies that defend collective interests and the common good, and

[5] Promoted by UNOSJO, ORAB, CENAMI, CECCAM, Grupo ETC, CONTEC, CASIFOP and AJAGI.
[6] See http://www.sinmaiznohaypais.org/

not merely the oligarchic interests of a handful of national and transnational corporations. We know that numerous others are making many other efforts toward similar goals, and this shared path will facilitate organizing ourselves as civil society with the capacity to demand policies based on sustainability, participative democracy, justice and fairness.

Our challenge is to continue to demand the following: a moratorium on the planting of transgenic corn in all of Mexico and the suspension of transgenic corn imports, in accordance with the recommendation issued by CEC; respect for the fundamental rights to food, information, free choice, citizen participation and self-determination of peoples; recognition of the public nature of biological resources and opposition to patents on life; a policy of scientific research and technological development that responds to a national agenda agreed upon by all social sectors, with goals and ethical criteria that reflect a pluricultural society and megadiverse country, and that are adapted to the socio-environmental conditions in each region; sustainable agriculture based on environmentally sound and socially pertinent practices, through financial assistance directed toward small producers and with a sufficient budget for promoting initiatives in local and regional development that have been defined by peoples; and on-site conservation of corn varieties and other crops that are culturally and biologically significant for peasant communities and the entire country.

What we need to do, as civil society organizations and social movements determined to advance toward food sovereignty and sustainability, is to continue to organize ourselves with the objective of proclaiming the entire country as territory free from transgenics—field by field, community by community, municipality by municipality, basin by basin, region by region, state by state. This involves disseminating information regarding the risks involved in transgenics—for the lives of peasants, for the environment and for food. We need to promote public debate, at the local up to the national level, focused on the impacts from biotechnological applications in agriculture and food. We need to file popular complaints and use other legal recourses to demand a response from the authorities involved in introducing transgenic corn into the environment. We need to achieve full respect for the precautionary principle and prevent transgenic contamination of the center of the origin and genetic diversity of corn. As peoples and peasant families, we need to defend and improve our productive capacities in order to increase the supply of corn and other grains and basic food products; to orient production toward sustainability through a combination of traditional peasant knowledge and contemporary agro-ecological techniques; to recuperate productive capacity in the entire country through a process of recuperating eroded agricultural soil and water sources; and to safeguard all native varieties of corn and other edible, aromatic, medicinal and ornamental plants, by cultivating and using them, and acknowledging their origins. We need to recuperate and protect traditional food culture; to promote the consumption of food that is beneficial to health and to discourage consumption of junk food and industrialized soft drinks; to promote consumption based on solidarity and responsibility, by establishing direct alliances between producers and consumers, from the local to national level. Only through these actions will we be able to recuperate the country's food sovereignty and sustainability—for the benefit of all Mexican women and men.

Bibliography

Aguilar, Jasmine. 1987. *Búsqueda de alternativas tecnológicas para la conservación del maíz y el chile en la sierra de Villa Alta, Oaxaca*. Mexico: GEA.

Aguilar, Jasmine. 1991. *Consejos para almacenar el maíz en casa*. Mexico: Libros del Rincón, SEP and GEA.

Aguilar, Margot and Leonardo Meza. 1992. *Desde Río hacia las sociedades sustentables y de responsabilidad global*. Colección de Cuadernos para una Sociedad Sustentable. Mexico: Friedrich Ebert Foundation and GEA.

Díaz León, Marco and Artemio Cruz León (compilers). 1998. *Nueve mil años de agricultura en México. Homenaje a Efraím Hernández Xolocotzi*. Mexico: GEA and Universidad Autónoma Chapingo.

González, Alfonso and Aarón Zazueta (coordinators). 1993. *El proceso de Evaluación Rural Participativa. Una propuesta metodológica*. Mexico: GEA and World Resources Institute.

Lagunes T., C. Arenas L. and C. Rodríguez H. 1986. *Proyecto: Búsqueda de tecnología apropiada para el combate de plagas del maíz almacenado en condiciones rústicas. Informe técnico de avance, periodo noviembre 1985-abril 1986*. Manuscript.

Lehman, Karen. 1995. *Por un sistema alimentario sustentable y global*. In: Jorge González Loera, et al., *Agroecología y Desarrollo Sustentable. 2do Seminario Internacional de Agroecología.* Mexico: UACh and RIAD.

Marielle, Catherine (coordinator). 1998. *¿Hacia la sustentabilidad? Memoria del seminario.* Mexico: GEA.

Marielle, Catherine (coordinator), (2002-2006), “Sistemas Alimentarios Sustentables,” Cuadernos Nos. 1 to 11, GEA, Mexico.

Marielle, Catherine (coordinator). 2007. *La contaminación transgénica del maíz en México. Luchas civiles en defensa del maíz y de la soberanía alimentaria. Estudio de caso*. Mexico: GEA.

Marielle, Catherine (coordinator). 2007. *¿Maíz transgénico? Riesgos para el ambiente, la salud y la soberanía alimentaria de México*. Mexico: GEA.

Marielle, Catherine (coord.). En prensa. *¡SAS! Una experiencia campesina hacia sistemas alimentarios sustentables*. México: GEA.

Meza, Miguel. 2000. *‘Seguimos estando juntos’. La organización campesina en Chilapa*. In: Armando Bartra (compiler). *Crónicas del sur. Utopías campesinas en Guerrero*. Mexico: Era.

Organizing Committee. 1996. *Memoria básica. El hambre no espera*. Foro Nacional por la Soberanía Alimentaria, August 23 and 26 1996, Mexico City, pp. 21-46.

Programa de Intercambio, Diálogo y Asesoría en Agricultura Sostenible y Seguridad Alimentaria (PIDAASSA). 2006. *Construyendo procesos “de campesino*

a campesino". Lima: Pan para el Mundo and Espigas-Asociación de la Promoción para el Desarrollo.

Proyecto de Desarrollo Rural Integral Vicente Guerrero, AC. 2000. *Conservación de suelos y agua. Manejo de semillas*. Tlaxcala: Centro de Capacitación Campesina.

Restrepo, Jairo. 2002. *Biofertilizantes preparados y fermentados a base de mierda de vaca*. Santiago de Cali: Fundación Juquira Candiru.