

**“When you sow maize, throw four seeds at a time: one for the wild animals, another for people with a taste for what’s not theirs, another for festival days and another for the family. Maize is not a business but food for survival, our sustenance and our happiness. When we plant it we bless it to ask for a good harvest for all. But we have recently found out that native maize varieties have been contaminated with transgenic seeds. This means that what our indigenous peoples took thousands of years to develop can be destroyed in no time at all by companies that trade in life.” Aldo González Rojas, Zapoteco, Oaxaca.**

# The day the sun dies

## Contamination and resistance in Mexico

SILVIA RIBEIRO

<sup>1</sup> GRAIN, “Poisoning the Well: the genetic pollution of maize”, *Seedling*, January 2003, p 4: [www.grain.org/seedling/?id=219](http://www.grain.org/seedling/?id=219); GRAIN, “Confronting Contamination: Five reasons to reject co-existence”, *Seedling*, April 2004, p1; [www.grain.org/seedling/?id=280](http://www.grain.org/seedling/?id=280)

<sup>2</sup> RK Downey and H Beckie, “Isolation Effectiveness in Canola Pedigree Seed Production.” Internal Research Report, Agriculture and Agri-Food Canada, Saskatoon Research Centre, Saskatoon, Canada, 2002.

<sup>3</sup> Margaret Mellon and Jane Rissler, *Gone to Seed: Transgenic contaminants in the traditional seed supply*, Union of Concerned Scientists, Washington DC, 2004. [www.ucsusa.org/food\\_and\\_environment/biotechnology/page.cfm?pageID=1315](http://www.ucsusa.org/food_and_environment/biotechnology/page.cfm?pageID=1315)

Mexican peasant maize, the origin of life and culture, the essence of the flesh of peoples who create and cultivate it, has been contaminated by genetically modified (GM) maize. As described earlier in *Seedling*<sup>1</sup>, this was an intentional crime. The ‘scientists’ who created transgenic maize were aware that maize plants cross openly with other maize plants, and that insects and the wind carry its pollen over long distances. Contamination is inherent to the presence of GM crops and is inevitable once they reach the field.

Maize is not the only crop to have been contaminated. In 2002, Agri-food Canada announced that Canada’s canola foundation seeds had been contaminated.<sup>2</sup> Earlier this year, the Union of Concerned Scientists released a report

on the transgenic contamination of conventional seed varieties in the United States,<sup>3</sup> which showed that at least 50% of maize seeds, 50% of cotton seeds and 80% of canola seeds contain transgenic DNA. The report warns of the risk of the future disappearance of GM-free seeds and of the threat of contamination of the food chain with plants modified to produce pharmaceuticals and industrial chemicals.

Industry’s strategy is clearer than ever: deliberately contaminate our fields and our food, and then hope that when the damage becomes obvious, it will be too widespread and people too impotent to overcome contamination. To make things even worse, the same companies, now with support from governments, have launched a new stage in



their attack in the legal field. In Canada, where transgenic canola – which cross pollinates even more readily than maize – has contaminated most canola crops, farmers are being warned not to use their own seeds or to save any for the next planting season, because companies may sue them for ‘abuse’ of their patented genes.

In Mexico, the centre of origin for maize and many other crops, the situation is even worse and more complex. The potential impact of contamination is multiplied by the huge number of local maize varieties, as well as wild and semi-domesticated relatives, plus many other species of fauna and flora in ecosystems and agro-ecosystems. But most serious is the profound cultural significance – in the broadest sense – of maize that is at stake.

### The maize people

Maize is the most important agronomic achievement in the history of humanity. From a mere grass (*teocintle*), indigenous peasant peoples in Meso-America created a very nutritious and tremendously adaptable plant which could be grown in many different ecosystems and for multiple uses. It does not grow wild, and it is always linked to its creators, whom – according to foundational myths throughout Meso-America – it also created, in a process of mutual care.

Among the hundreds of traditional maize varieties used every day by peasants and indigenous people in Mexico, there is a large diversity of colors (white, red, yellow, blue, black, spotted), with ears ranging from a few centimetres up to 30 centimetres, with different shaped ears and varying numbers of kernels. A few of these varieties, for example, are known as: *bolita* (little ball), *reventador* (popper), *palomero toluqueño* (Toluca popcorn), *palomero de Chihuahua* (Chihuahua popcorn), *celaya dulce* (sweet), *serrano de Jalisco*, *olotillo*, *tuxpeño*, *chapalote*, *tabloncillo* (plank), *zapalote chico*, *zapalote grande*, *conejo* (rabbit), *nal tel*, *cacahuancintle*, *chalqueño*, *arrocillo* (little rice), *tepecintle*, *comiteco*, *pepitilla*, *ancho* (broad), *tablilla de ocho*, *otaveño*, *apachito*, *dulcillo del noroeste* (northeast sweet), *ratón* (mouse), *vandeño*, *olotón*, *tehua*, *jala*, *zamorano*.

Maize in Mexico is much more than a crop. It is a central element in rural and urban culinary habits and lies at the heart of the history and the daily lives of the peoples of Mexico, their economy, their religions and their worldview. The cycles and the uses of maize give rise to festivals and to aesthetics, they create furniture and specific utensils, they influence architecture. For indigenous and peasant

peoples, it is the basis for their identity and for their autonomy. So the transgenic contamination of the peasants’ maize is no small event. As Alvaro Salgado, from the Centre for Indigenous Missions (CENAMI) put it, “*This is an act of aggression against the deepest identity of Mexico and of its original peoples. Our communities and organisations have therefore decided to take this problem into our own hands.*”<sup>4</sup>

### Civil society responses

GM contamination in Mexico gave rise to a collective discussion on the issue, involving indigenous and peasant communities and organisations as well as civil society organisations, which has brought out the complexities of the problem as well as the complexities of the resistance against contamination. In clear contrast to the resignation and “*surrender*”<sup>5</sup> the industry hoped for, Mexico’s people have risen to the challenge.

Once the contamination had been demonstrated, many civil society organisations protested in Mexico and internationally. Amongst the demands raised were stopping the causes of contamination, for governments and international agencies to step in to monitor contamination, for impact studies to be done and contingency plans prepared, and for liability suits to be drawn up against the multinationals. Some also raised the need for national and international biosafety regulations. We demanded transparent proof from the Food and Agriculture Organisation and the Consultative Group on International Agricultural Research (see p13) that they had not been contaminated as well, nor could be in the future, and called for

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<sup>4</sup> “Contaminación transgénica del maíz en México: mucho más grave” Collective press release by indigenous and peasant communities with civil-society organisations. Oct. 9, 2003, Mexico. [www.etcgroup.org/article.asp?newsid=407](http://www.etcgroup.org/article.asp?newsid=407)

<sup>5</sup> Don Westfall, a consultant to biotechnology companies, said in 2001: “The hope of the industry is that over time the market is so flooded [with genetically modified organisms] that there’s nothing you can do about it. You just sort of surrender.” *Toronto Star*, Canada, Jan. 9, 2001.



One fifth of Mexico’s population lives on small farms where the main crop is maize



Lorenzo Armendariz



*Thanks to the NAFTA agreement, US maize is now sold to Mexico at 25% less than cost price, which has made growing maize uneconomic for Mexican farmers.*

a moratorium on planting GM crops. Mexico's indigenous and peasant communities, meanwhile, have gone much further and deeper. Their experience is invaluable to understanding the issue of contamination and to go on building resistance in other parts of the world.

#### Causes of contamination

The primary cause of contamination of maize in Mexico is the importing of unsegregated maize from the US. From being self-sufficient in maize till the late 1980s, the birthplace of maize has become an importer, because of national farm policies that discourage small-scale production. These policies were intensified with the signing of the North American Free Trade Agreement (NAFTA) in 1992. Today Mexico imports about a third of the maize it consumes from the US, and has placed no restrictions in relation to GM imports. Since over 40% of US maize output is genetically engineered and authorities refuse to segregate GM and non-GM maize, at least that percentage is flowing into Mexico. The percentage is likely to be even higher, since other major importers (like the EU and Japan) have refused US maize, creating a glut.

Meanwhile, Mexico disassembled its public system for supplying and marketing nationally-produced maize. It used to buy the maize from farmers and then sell it country-wide through a system of 23,000 rural stores known as DICONSA. Spread through the most remote corners of the Mexican countryside, these stores are often the only point of sale for cereals and other supplies. After dismantling the national supply system, the market was taken over by a handful of companies dominated by a few multinationals like Cargill, ADM and Maseca, which prefer to import their maize from the US

(where prices are kept artificially low) and sell it through the DICONSA system, in competition with Mexican maize growers. Although the great majority of Mexican peasants do not plant store-bought maize seeds, distortions in the economy mean that it is cheaper to buy maize than grow it, thus reducing and depleting their own seed supply. Moreover, out of normal peasant curiosity – which has been critical for the development of the world's agrobiodiversity – they plant some of what they buy, just to see what happens. They also buy at the DICONSA stores when they lack seed for other reasons, such as floods or droughts that leave them with no harvest. Even when that maize grows out poorly, as is often the case because it is not adapted to the peasants' fields, they grow enough to produce pollen to contaminate their and their neighbours' fields.

Another cause of contamination has come from farmers replanting some of the grain provided as food aid from the World Food Program and foreign NGOs. In addition, field trials were undertaken in Mexico with GM maize without adequate supervision to ensure that contamination could not take place prior to the establishment of a moratorium in 1999. And finally, while there has never been any authorisation in Mexico for the commercial planting of GM maize crops, given that even much of the seed considered non-GM in the US is actually contaminated, large-scale Mexican maize growers may also have become unwitting vectors of contamination, just like their peasant compatriots. There are many ways in which GM maize has infiltrated the country, but the main cause is that a few huge transnational companies saw no problem in genetically modifying an open-pollinated crop of great economic and cultural importance and had no concern for the many and diverse impacts this would have.

#### The official response

When the contamination of Mexican maize came to light, Mexican government officials with few exceptions<sup>6</sup> first denied the facts, then played them down and threw a blanket of silence over the subject. The government maintained imports and even suspended the moratorium on growing or importing GM maize. NAFTA stripped the country of any rights it might have had to refuse GM imports under the Cartagena Protocol on Biosafety (see p13.). Under one NAFTA accord signed in November 2003, Mexico agreed to allow shipments from Canada and the US to dispense with identifying contamination by GM grain when its presence is "adventitious" or does not comprise more than 5% of the grain. This is an arbitrary and

<sup>6</sup> With the minority exception of the Institute of Ecology and the National Biodiversity Commission, which took samples that confirmed the contamination, released the results and held dialogue with peasants and with civil-society organisations.



absurdly high threshold, whose supervision is the responsibility of the companies themselves.

Meanwhile, representatives of the Mexican Academy of Science drew up a bill of law on 'biosafety', which ignores the precautionary principle and offers a clear framework to promote GM crops and to legalise contamination in Mexico. Based on the argument that the bill is "science-based," it was approved by all parties in the Senate and is now under discussion in the Chamber of Deputies. Indigenous and peasant communities describe it as "shameful and offensive to peasants and indigenous people and to all citizens of Mexico in general." They say that "We are not asking for a 'better' law. We believe that Mexico, centre of origin of maize, does not need to take on the social, economic and environmental risks posed by transgenic crops. It should simply forbid them."<sup>7</sup>

### Attacks on the maize people

In sharp contrast with the official position, the news of contamination of Mexico's maize shocked the country as a whole, and raised tremendous concerns for millions of peasants and indigenous people. Just months after the discovery of the contamination of maize made by Ignacio Chapela and David Quist<sup>8</sup>, in January 2002, more than 300 indigenous, peasant, civil society, academic and religious representatives met in Mexico City at the First Forum in Defence of Maize. The meeting's conclusions included a declaration, policy demands and proposals, strategies for action and an analysis of the context for understanding the contamination.

*"Maize is the heritage of mankind, the fruit of domestication done by Meso-American indigenous and peasant peoples for over 10,000 years, not by transnational corporations. The transgenic contamination of native maize varieties is a loss of genetic memory of traditional Mexican agriculture, and it may be irreparable. Agricultural and trade policies undermine national maize production, which is the core of the peasant economy and organisation, as well as food sovereignty. Maize represents more than 10,000 years of culture and is the legacy of Mexico's Indian and peasant peoples. Maize growing is the heart of community resistance."*<sup>9</sup>

From the outset, it was clear that this was more than an isolated event of contaminated maize, an environmental or a health problem, or even just a 'genetic engineering' issue. It was part of a broader phenomenon, which became known as "the attack on maize people" in the Second Forum in Defence of Maize. One key realisation at the First Forum

was that we did not need a campaign as such, but a process. This process would neither be linear nor short-term, but would be defined through a broad, diverse, collective and horizontal effort. Its objectives, methodologies and norms would change continuously, as a result of the self-managed and culturally diverse nature of the process.

### Without maize we are nothing

As Ramón Vera Herrera expressed in an excellent reflection on the various aspects of the process unleashed by the contamination of maize,<sup>10</sup>

*"The first steps involved information and analyses, marches and protest letters, lobbying activities and many regional workshops. There was and still is a real concern at the very idea of contaminating the most sacred element of their lives and the foremost source of their food, what makes them be and provides the identity that has been forged for millennia. When the Wixaritari (or Huichole) community members found out, one of them immediately and incisively observed that 'Without maize, we are nothing; we would not just be dead, we would cease to exist'."*

<sup>7</sup> Collective document by indigenous communities from Oaxaca, Puebla, Chihuahua and Veracruz, CECCAM, CENAMI, ETC Group, CASIFOP, UNOSJO y AJAGI, October 2003, Mexico. [www.etcgroup.org/article.asp?newsid=408](http://www.etcgroup.org/article.asp?newsid=408)

<sup>8</sup> See the interview with David Quist in the April 2003 issue of *Seedling*, [www.grain.org/seedling/?id=232](http://www.grain.org/seedling/?id=232)

<sup>9</sup> Conclusions from the First Forum In Defense of Maize (*En Defensa del Maíz*): [www.ceccam.org.mx/ConclusionesDefensa.htm](http://www.ceccam.org.mx/ConclusionesDefensa.htm)

<sup>10</sup> Ramón Vera Herrera, "En defensa del maíz (y el futuro) - una autogestión invisible". May 2004, IRC, [www.americaspolicy.org/](http://www.americaspolicy.org/)

<sup>11</sup> Ojarasca, in *La Jornada* 58, February 2002.

## A Tzotzil view of contamination

"We are from the Chiapas Highlands, we are people made of maize and clay. We are Tzotziles, but our true name has been transformed on the tip of the tongue of the invaders. We have been indigenous people ever since our Mother Earth gave birth to us and we will continue to be, until the same Mother Earth swallows us up.

"Our struggle is for what we have been, what we are today and what we will be tomorrow. We struggle to know our history, to recover our culture, because we know very well that if a people knows its history it will never be condemned to repeat it and will never be defeated.

"We have learned that agrochemical companies patented our maize. They are putting in genes from other living beings and many chemicals to completely put an end to our natural maize, so we'll have to buy nothing but transgenic maize. We know about the serious impacts caused by this kind of maize they are creating, which affects our culture because for indigenous people maize is sacred. If these agrochemical companies try to do away with our maize, it will be like putting an end to part of the culture that our Mayan ancestors bequeathed to us. We know that maize is our main staple food. We know that our first fathers and mothers brought us up on maize and for that reason we are called women and men of maize. Our indigenous peasant grandparents gave their labour and their hearts; they cried as they asked protection from our Creator for their work to bear fruit.

"We are worried that our maize may disappear, so in our schools we want to create a seed bank to conserve our maize, so that later we can promote the creation of seed banks in every community. To defend our natural maize, we are carrying out a project in our school called "Mother seed in resistance in our Chiapaneca lands." We are against transgenic maize, and together and with all the people of Mexico we hope to save part of our life that they want to take away."<sup>11</sup>



All around the country, people found a voice. This contribution from Aldo González, from UNOSJO, summarises the concerns of many:

*"Native seeds are a very important part of our culture. The pyramids may have been destroyed, but a handful of maize seed is the legacy we can leave to our children and grandchildren. Today they are denying us this possibility. The process of globalisation that our country is going through and the undermining of governmental authority are keeping indigenous communities from being able to pass on this age-old legacy, which represents more than 10,000 years of culture. For 10,000 years our seeds have proven they don't harm anyone. Today they're telling us that transgenic seeds are harmless. What proof do they have of this? Five or six years of planting transgenic maize seeds in the world gives no indication that the seeds or this grain are harmless to humanity. We have every reason to doubt their seeds."<sup>12</sup>*

The Tzotzil people of Chiapas made a strong statement about the contamination of their seeds (see box on p. 7).

With indigenous meetings held around the entire country, a strong, invisible movement began to emerge to defend maize and to understand the implications of its contamination. For example, at the National Indigenous Congress (CNI) Assembly for the Central Pacific Region held in Jalisco in July 2002, contamination became such an issue that the delegates from the Wixárika, Purépecha, Nāhñú, Huachichil, Chichimeca, Nahuatl and Amuzgo peoples from various states of Mexico, stressed among their final resolutions that:

<sup>12</sup> Ojarasca, in *La Jornada* 58, February 2002.



This Wixárika farmer travelled more than a thousand miles to Oaxaca - where contamination was first discovered - for a meeting on how to protect native maize.

*"We demand that the Federal Government cease the introduction into our country of maize that is transgenic or of doubtful origin. We call on all indigenous and peasant peoples, and on maize consumers throughout the country, to defend our seeds and to unite behind our demand."*

Interestingly, the CNI made the direct link between the defence of maize and the importance of maintaining biodiversity and their traditional knowledge, and of preventing biopiracy. They further extrapolated this issue to the protection of traditional medicine. Two months later, the communities and organisations that make up the CNI held a National Forum to Defend Traditional Medicine, which drew together countless traditional medicine practitioners, authorities and delegates from indigenous communities and organisations from 20 different states. Those present represented the following peoples: the Tohono O'odham, Mayo, Rarámuri, Cora, Wixaritari, Nahuatl, Huachichil, Tenek, Chichimeca, Purhépecha, Mazahua, Tlahuica, Matlatzinca, Hñahñu, Tepehua, Amuzgo, Tlapaneco, Mixteco, Huave, Zapoteco, Mixe, Mazateco, Maya Peninsular, Tzeltal, Tzotzil, C'hol, Tojolabal, Mame, Zoque, Chuj and Mochó peoples, along with civil society organisations.

After demanding respect for indigenous territories, natural resources, biodiversity, and both the ancient and modern knowledge of indigenous peoples; after refusing to submit to the validation of traditional medical practices by public health authorities; after demanding autonomy and self-government; after declaring a moratorium on bioprospecting in the territories of the peoples signing the document, those present at the conference also made a striking call on the issue of transgenic contamination:

*"As part of our defence of Mother Earth and of everything to which she gives birth, we repudiate the introduction into our country of transgenic maize, because Mother Maize is the first foundation of our peoples. To this end, we demand that the federal government declare an open-ended moratorium on the introduction of transgenic maize, regardless of the use which it may be given."*

### Turning the tables

Through the complex and multifaceted process that has taken shape, it has become clear that the defence of maize and even its decontamination cannot be understood in isolation from the web of life in which it is enmeshed. The Wixárika people, for example, put it this way:



- OK: let's defend maize.
- Defending it means replenishing the soil.
- Which means returning to planting without chemicals ...
- ... and making sure there are no mudslides.
- That means we have to rebalance the water.
- Which means taking care of the forest...
- Holding back erosion, bringing rain...
- ... and refreshing the air.
- To do that we have to defend our territory
- ... and our rights to land and as a people.
- That means our representatives must really obey the community's mandate...
- ... and we must strengthen the community assemblies.
- So we have to have maize, so that people in office don't have to take other jobs, and can keep their roots in the land, like other villagers.



*"Maize growing is the heart of community resistance."*

For the Wixárika people, the world is a kind of magic circle in which nothing can operate alone. The Wixárika are working for the holistic replenishment of its communities, stressing community organisation and maize as the heart of their resistance. Ultimately they are working towards full autonomy in their territories in all respects, from geography to the sacred, embracing the wealth of relations between humanity and everything else, since everything is alive.<sup>13</sup>

### Sampling, banks and learning

In addition to the many meetings and workshops, a diagnostic process was also carried out to detect the presence of transgenic maize in different communities. With support from Mexican and overseas civil-society organisations and from biologists at the National Autonomous University of Mexico, and with the direct participation of the communities, samples of peasant maize were collected for analysis from 138 indigenous and peasant communities in nine states of Mexico. The startling results were that there was transgenic contamination in all nine States and in 24% of the participating communities.<sup>14</sup>

These results were discussed at Second Forum in Defence of Maize in December 2003. Among the communities' first reactions were calls for more sampling and analysis. But they soon realised that even if they could afford to sample more communities – and they would never be able to sample all the thousands of communities in Mexico – the process would have to be repeated with each new planting season, since contamination would be ongoing. Even if that were possible, it would lead to a technical and economic dependency that would alienate them ever further from their own

ways of life. Worse still, the entry of technicians into their communities might mean more threats to their way of life, and to their crops and seeds.

The communities recognised that what made them vulnerable to contamination were a series of national and international economic and political factors (free-trade agreements, massive migration, cultural and food erosion, urban and rural poverty, etc.). They came to the conclusion that they could only defend maize by defending the wholeness of peasant and indigenous life along with their rights and resources. As they started to perceive the issue from a different angle, their goals began to shift.

Among the new measures proposed were to:

- Declare and implement a unilateral moratorium on transgenic plants, refusing to use seeds whose origin and history are unknown and refusing to eat food made from unknown maize.
- Emphasise or return to the planting of native seeds, promoting local and community exchange systems. The appropriateness of seed banks was questioned, since they require the creation of new, centralised structures that demand specialised labour, administration, centralised surveillance, etc. This recourse was not discarded for all situations, but the priority is now for the traditional habit of storing seeds in which each family and community sows and stores their own varieties as they had always done in the past, taking even greater care now to use only well-identified seeds.
- Strengthen and reaffirm cultural processes involving maize, recovering local cooking habits, traditions, myths and ceremonies, as well as community processes involving planting, harvesting, consumption, exchange, etc.

<sup>13</sup> Quoted from Ramón Vera Herrera, "En defensa del maíz (y el futuro) –una autogestión invisible". May 2004, IRC, [www.americaspolicy.org/](http://www.americaspolicy.org/)

<sup>14</sup> Collective press release by indigenous and peasant communities from Oaxaca, Puebla, Chihuahua, Veracruz, CECCAM, CENAMI, ETC Group, CASIFOP, UNOSJO, AJAGI, Oct. 9, 2003, [www.etcgroup.org/article.asp?newsid=407](http://www.etcgroup.org/article.asp?newsid=407)



- Launch a process of consultation and investigation amongst communities and peoples to find new ways to identify the contaminated maize, for example by observing abnormalities or other traits, including different perceptions that peasants may pick up on in their day-to-day contact with the seeds and the land. On this basis, attempt to establish and share decontamination processes, for example through partial exchanges of seeds in cases when this is deemed necessary, etc., but always within traditional circuits.
- Continue discussing the threats to maize peoples and how to resist them, including more dissemination and learning within rural and urban local communities, as well as denouncing governmental measures that increase or legalise contamination.
- Strengthen and expand links with urban and neighbourhood groups to promote the consumption of native maize and the patronage of local markets, wherever possible and appropriate.

The contamination of maize – or any other crop – is a huge and immoral new burden that

transnationals and their loyal governments have placed on the shoulders of peasant men and women of the world. It is an ironic form of ‘payment’ for the rich legacy of crops these peoples have provided for centuries, to the benefit of mankind. Peasant farmers are also the only ones who can decontaminate it, because even if the political will existed, there is no centralised or top-down approach that could possibly do this. Only those who have profound and intimate knowledge of the crops and their setting are up to taking on this enormous task.

This is no short-term process we are undertaking. As Aldo González said in his conclusions on the Second Forum, *“We are heirs to a great treasure that is not measured in money and that they want to take away from us. This is no time to beg for alms from the aggressor. Every Indian and every peasant knows about the transgenic contamination of our maize and we proudly declare: I plant and will continue to plant the seeds that our grandparents bequeathed to us, and I will assure that my children, their children and the children of their children continue to grow them. I will not allow them to kill the maize, because our maize will only die the day the sun dies.”* 2



**Silvia Ribeiro** is a Mexico-based researcher and programme manager for ETC group ([www.etcgroup.org](http://www.etcgroup.org)), and a member of GRAIN’s board. She has a background as a publisher, journalist and environmental campaigner in Uruguay, Brazil and Sweden.

Silvia has extensive experience in social and environmental advocacy. As a civil society representative, she has attended and followed the negotiations of several of United Nations environmental treaties. She has been invited to speak at many events around the world on biopiracy, transgenics, intellectual property, corporate control, and indigenous/farmers’ rights.

Silvia has produced a number of articles related to biodiversity, genetic resources, intellectual property and biopiracy, among other issues. From 1994-1999, she was the editor of *Seedling’s* Latin American sister publication *Biodiversidad, sustento y culturas* ([www.grain.org/biodiversidad/](http://www.grain.org/biodiversidad/)). Silvia can be contacted at [silvia@etcgroup.org](mailto:silvia@etcgroup.org).