



Forum for  
Food Sovereignty

# Sustaining Agricultural Biodiversity

and the integrity and  
free flow of Genetic  
Resources for Food for  
Agriculture

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# Sustaining Agricultural Biodiversity

and the integrity and free flow of Genetic  
Resources for Food for Agriculture

# Soutien à la biodiversité agricole

et la intégrité et libre-circulation des ressources génétiques  
pour l'alimentation et l'agriculture

# Para mantener la biodiversidad agrícola

y la integridad y el libre acceso a los recursos genéticos para la  
agricultura y la alimentación





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# Summary

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Food sovereignty and security, livelihoods, landscapes and environmental integrity are underpinned by agricultural biodiversity and its component genetic resources for food and agriculture. These have been developed by indigenous peoples and women and men farmers, forest dwellers, livestock keepers and fisherfolk over the past 12,000 years through the free exchange of genetic resources across the world. Since the advent of industrial agriculture and the increasing globalisation of markets, tastes and cultures, much of this wealth of agricultural biodiversity is being lost both on-farm and in genebanks and increasingly the integrity of these resources is being compromised by genetically modified organisms. The World Food Summit - five years' later and the World Summit on Sustainable Development could play an important role in reversing these trends by deciding on actions to support three important international agreements.

- The free flow of seeds could be enhanced by the **FAO International Seed Treaty** on Plant Genetic Resources for Food and Agriculture (ITPGRFA), so long as it unambiguously implements the clause that prohibits claims of intellectual property rights on, and outlaws biopiracy of, these resources – including their genes – and ensures rights and rewards to farmers.
- The **Leipzig Global Plan of Action** on plant genetic resources for food and agriculture, could facilitate implementation of existing FAO and CBD agreements and decisions, including the Agricultural Biodiversity Decisions of the Convention on Biological Diversity, of relevant FAO Conference decisions and Commitment 3 of the World Food Summit Plan of Action on sustainable agriculture. These will enable improved conservation and sustainable use of plant genetic resources for food and agriculture and would contribute to reversing the decline in agricultural biodiversity.
- The integrity of these genetic resources could be given some protection by mandatory decisions of the **Convention on Biological Diversity**. This includes implementation of the **Biosafety Protocol** with strict liability clauses, that would oblige owners of the intellectual property rights of genetically modified organisms to provide full compensation for any untoward outcomes resulting from GMOs in food, seed, grains or the environment.

Civil Society and Farmers' Organisations, agreed at the 1996 World Food Summit NGO Forum to support a wide range of policy measures and research and development activities that would enhance diversity, rights and local food and livelihood security. Some examples of their successful achievements in work with local communities over the past five years are highlighted in this paper: maintaining crop diversity; conserving domestic animal diversity; restoring marine diversity; developing agro-ecotourism; facilitating farmers' voices in the genetic engineering debate; challenging perverse patents; protecting Farmers' Rights; and monitoring Intellectual Property Rights (IPR) encroachment.

Governments, however, have implemented few of the activities in Commitment 3 on Sustainable Agriculture in the 1996 World Food Summit Plan of Action. Rather, they have been promoting or facilitating, or at best tolerating corporate sector involvement in, a wide range of actions that are undermining diversity, threatening access to genetic resources, undermining rights, spreading genetic pollution and compromising food sovereignty for example by:

- Allowing spread of GMOs and genetic pollution even in Centres of Origin and Diversity, despite agreeing the Biosafety Protocol
- Allowing ongoing research into, patents on and licensing of Genetic Use Restriction Technologies (GURTs), especially Terminator technologies
- Promoting globalisation of markets through WTO rules that reduce local options for socially and environmentally sustainable production that sustains local diversity
- Failing to implement a substantive review of WTO/TRIPs Article 27.3(b) that would outlaw patents on genetic resources
- Tolerating widespread patent abuse and biopiracy
- Allowing unparalleled increase in corporate power in the Life Sciences industry
- and failing to implement fully those decisions, plans and programmes that are purposeful in terms of conservation and sustainable use.

The importance of these issues was underscored by Civil Society's World Forum on Food Sovereignty, a preparatory meeting for the World Food Summit: five years later, held in Havana in August 2001:



*"Genetic resources are the result of millennia of evolution and belong to all of humanity. Therefore, there should be a prohibition on biopiracy and patents on living organisms, including the development of sterile varieties through genetic engineering processes. Seeds are the patrimony of all of humanity. The monopolisation by a number of transnational corporations of the technologies to create genetically modified organisms (GMOs) represents a grave threat to the peoples' food sovereignty. At the same time, in light of the fact that the effects of GMOs on health and the*

*environment are unknown, we demand a ban on open experimentation, production and marketing until there is conclusive knowledge of their nature and impact, strictly applying the principle of precaution."*

This paper concludes with a list of priorities from CSOs and Farmers' Organisations for changes in a range of activities, policies and instruments at local, national and international levels. These changes would effectively protect the genetic integrity of, and open access to, the agricultural biodiversity needed to sustain livelihoods, landscapes and life on earth.

### Box 1:

#### International threats and opportunities

The international agenda on genetic resources for food and agriculture has been dominated since 1996 by the negotiation of the International Treaty on Plant Genetic Resources for Food and Agriculture - the "International Seed Treaty".

The negotiations took place in the negative context of:

- an increase in patenting of genetic resources and concomitant biopiracy
- a rapidly expanding area sown to genetically modified crops,
- the development of 'Terminator Technologies' and GURTs (Genetic Use Restriction Technologies),
- the stalled negotiations on the revision of Article

27.3(b) of the WTO Agreement on Trade Related aspects of Intellectual Property Rights (TRIPs) that concerns patents on genetic resources,

- an increasing number of countries signing up to the UPOV convention on plant breeders' rights.

More positively, however,

- the Africa Union's draft model legislation on Community Rights was adopted by African Heads of State in 1999,
- the Biosafety Protocol on international trade in GMOs / LMOs was adopted in Jan 2000 and
- FAO and CBD agreed a series of Decisions on agricultural biodiversity (CBD/COP Decisions III/11, IV/6, V/5, VI/11 and VI/12; FAO Council Decisions) which include further commitments to the implementation of the 1996 Leipzig Global Plan of Action on Plant Genetic Resources for Food and Agriculture and other actions.



## Box 2:

### International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) 'International Seed Treaty'

The International Seed Treaty aims to conserve and sustainably use the genetic resources of the world's food crops and to ensure that benefits from their commercial use are returned to farmers in developing countries, the original source of most of these resources. It will implement a "**Multilateral System**" (as opposed to the existing CBD "Bilateral System") of access to a list of some of the most important food and fodder crops essential for food security and interdependence for those countries that ratify the treaty. It will implement **Farmers' Rights** to access genetic resources, to use, save and sell seeds and participate in decision making, although these Rights will be subordinate to national laws. A governing body and a financial mechanism will ensure its operation.

The Treaty has the potential to be a prime example of responsible global governance, ensuring that those genetic resources that underpin social needs are maintained in the public domain. These resources are our 'life insurance' against future adversity be it from a new disease or insect challenge, a biotechnological disaster or from climate change, war, industrial developments, ecosystem collapse or other calamity. It will help to 'future-proof' the genetic resources of the world's crops.

The FAO Commission on Genetic Resources for Food and Agriculture completed the negotiations in 2001 and the 184 nation FAO Conference adopted the Treaty on 3 November 2001 with only two countries abstaining - USA and Japan. The Treaty is now open for signatures. Early ratification is encouraged as the first 40 countries to ratify the Treaty will form its Governing Body. At its first meeting, the Governing Body will have to deal with outstanding issues that were incompletely dealt with in the negotiations.

■ **Intellectual Property Rights:** Will the Treaty allow new crop varieties or genes from food crops, if extracted, transformed or modified and included in new varieties, to be patented and have other intellectual property rights claims? If permitted this would facilitate removal of these vital genetic resources from the public domain.

The spread of patented genes in the environment would undermine Farmers' Rights. For example the disputed case of Percy Schmeiser v Monsanto, which is claiming a \$26,000 'technology fee' because their genes have polluted his Canola crop in Canada, shows how quickly Farmers' Rights can be eroded by perverse Patent Law;

■ **Relationship with the WTO:** Will the Treaty be recognised as the competent authority to deal with plant genetic resources for food and agriculture and take precedence over the World Trade Organisation and especially its Agreement on Trade Related aspects of Intellectual Property Rights (TRIPs)?

■ **Benefits and financing:** Will the Treaty provide benefits and funding commensurate with the contribution that farmers have made over past centuries to the development of the diversity of crops. Will the "Material Transfer Agreement" (MTA) that has to be developed be equitable and protect crop genetic resources from privatisation?

■ **Farmers' Rights:** Will the Treaty's Governing Body insist on full recognition of Farmers' Rights?

The International Seed Treaty has been welcomed by the Convention on Biological Diversity which recognises the Treaty as the agreement that will deal with all issues concerning plant genetic resources for food and agriculture. It is now up to governments to ratify the Treaty, form the Governing Body and ensure that in its implementation the Treaty is

■ **just** – ensures a level playing field on access rules without any threat of privatisation and biopiracy, and full international recognition of Farmers' Rights.

■ **equitable** – provides reasonable benefits to poor farming communities in developing countries, and

■ **comprehensive** – contributes to keeping the germplasm of all crops and their 'wild' relatives in the public domain. (*See [www.ukabc.org/iu2.htm](http://www.ukabc.org/iu2.htm)*)



## Agricultural Biodiversity, including genetic resources for food and agriculture, will command attention at the WORLD FOOD SUMMIT: five years later and WSSD<sup>1</sup>

*"Agricultural Biodiversity encompasses the variety and variability of animals, plants and micro-organisms which are necessary to sustain key functions of the agroecosystem, its structure and processes for, and in support of, food production and food security"* (FAO, 1999).

Since the dawn of agriculture 12,000 years ago, humans have nurtured plants and animals to provide food. Careful selection of the traits, tastes and textures that make good food resulted in a myriad diversity of genetic resources, varieties, breeds and sub-species of the relatively few plants and animals humans use for food and agriculture - agricultural biodiversity<sup>2</sup>. Agricultural biodiversity also includes the diversity of species that support production - soil biota, pollinators, predators and so on - and those species in the wider environment that support diverse agroecosystems - agricultural, pastoral, forest and aquatic ecosystems. These diverse varieties, breeds and systems underpin food security and provide insurance against future threats, adversity and ecological changes. Agricultural biodiversity is the first link in the food chain, developed and safeguarded by indigenous peoples, and women and men farmers, forest dwellers, livestock keepers and fisherfolk throughout the world. It has developed as result of the free-flow of genetic resources between food producers.

This agricultural biodiversity is under threat. Animal breeds, plant varieties and the genetic resources they contain are being eroded at an alarming rate. More than 90% of crop varieties have been lost from farmers' fields in the past century and livestock breeds are disappearing at the rate of 5% per year and aquatic life is similarly threatened. Soil biodiversity including microbial diversity and the diversity of pollinators and predators are also under

serious threat. Urgent actions are needed to reverse these trends *in situ* and on-farm. Also there is a need to implement actions to protect the genetic resources stored in *ex situ* public genebanks, which are often poorly maintained. Threats to these resources, both *in situ* and *ex situ*, also include pollution by genetically modified material and the increasing use of intellectual property rights (IPRs) to claim sole ownership over varieties, breeds and genes, which thereby restricts access for farmers and other food producers. This loss of diversity is accelerating the slide down the slippery slope of food insecurity that today sends more than 1.2 billion people to bed, hungry.

The discourse on Access to Genetic Resources is thus wider than concerns at a genetic level. It should be widened to include all of agricultural biodiversity, for it is the whole interdependent complex, developed through human activity in natural resource management for food and agricultural, livestock and fisheries production, that is under threat.

The way forward is to work with and for all users of natural resources - farmers, livestock keepers, forest dwellers who are the principal managers of terrestrial ecosystems and artisanal fisherfolk who safeguard aquatic resources, in developing sustainable agroecological production systems that enhance diversity. In 1996 the CSO Forum at the World Food Summit agreed that Farmers' Rights should be the *"fundamental pre-requisite to the conservation and sustainable utilisation of agricultural biodiversity"*. Ways must be found for society to recognise the contribution of these producers and their communities to food security and ecosystem management, as well as to recognise their inalienable rights of access to and use of the resources. They have a right, too, to share in the benefits arising from the commercial use of these resources by others - after all, the US\$2 trillion food industry derives all its income from the use of these genetic resources.

International actions related to genetic resources by governments and corporations over the past 5 years (see Box 1) have rendered more or less ineffective the implementation of any of the

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<sup>1</sup> The World Food Summit: five years' later (WFS:fy) is the principal UN preparatory conference on food and agriculture issues for the World Summit on Sustainable Development (WSSD). Resolutions and agreements at the WFS: fy will be forwarded to the WSSD.

<sup>2</sup> Agricultural Biodiversity comprises the diversity of genetic resources, varieties, breeds, sub-species and species of crops, livestock, forestry, fisheries and micro-organisms used for food, fodder, fibre, fuel and pharmaceuticals. Agricultural biodiversity results from the interaction between the environment, genetic resources and the land and water resources management systems and practices used by culturally diverse peoples, for food production.





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proposals concerning access to and the sustainable use of genetic resources agreed by the same governments at the 1996 World Food Summit. (Commitment 3 of the Plan of Action on Sustainable Agriculture). Of especial concern is the failure of governments to take a strong stand against genetic pollution by GMOs, especially in Centres of Origin and Diversity and their failure to ban Terminator Technologies.

In contrast, Civil Society Organisations, as they agreed in their parallel NGO Forum in 1996, have been active both in successfully supporting local farming communities in sustaining their agricultural biodiversity and in challenging the expansion of corporate power over genetic resources and the research agenda dominated by Genetic Engineering technologies.

Many CSOs also actively participated in the negotiations on the International Seed Treaty (see Box 2), which culminated in November 2001. This

Treaty could ensure the free-flow of genetic resources for food and agriculture, subject to positive interpretation of ambiguous clauses by the Treaty's Governing Body and its equitable implementation by all governments with a resultant strengthening of its benefits and coverage. There is an imperative for signing the Treaty and then ratification of the Treaty by 40 governments so that the Governing Body can be formed and the Treaty come into force in order that these contentious issues can be resolved.

**Given this context, the *World Food Summit - five years later* and the *World Summit on Sustainable Development* could be dominated by discussion on the use and abuse of genetic resources, IPRs, the *International Seed Treaty* and wider issues affecting the sustainable use of agricultural biodiversity by and for farmers and other users.**



# Some NGO/CSO activities since 1996

Despite hesitant progress by governments and intergovernmental bodies on some aspects of conservation and sustainable use of genetic resources the overwhelming trends have been negative as broadly unregulated corporate agribusinesses increase their stranglehold on these resources, eliminating diversity. It has been left to Civil Society - farmers and other users, their organisations and NGOs/CSOs - to keep this diversity alive. Over the past 5 years there have been many activities in all continents led by local communities and supported by CSOs. Of particular note is the "Growing Diversity" project and the Community Biodiversity Development and Conservation Programme (CBDC). A few more are highlighted below.

## Maintaining crop diversity

### Celebrating Seed Diversity:

#### Seed Fairs in Zimbabwe and Kenya <sup>3</sup>

Seed fairs are increasingly popular events for promoting diversity. African interest in these was rekindled by exchange visits in the 1990s between Zimbabwe and Peru, where Seed Fairs are a traditional, spiritual and cultural mechanism for keeping seed diversity alive. Zimbabwean Seed Fairs are now annual events in many villages and the word spread to many countries throughout the continent. This has been achieved by informal information exchange, publications and through some formal NGO networks, such as PELUM. In Tharaka, Kenya, for example, they are called Seed Shows and have been held annually since 1996, when they were initiated in an NGO project development area. In 1998, 29 women and 47 men as well as some community groups mounted displays. A panel of judges evaluates the displays and the most diverse are awarded prizes. The total number of crop varieties displayed increased in 1998 to 149 from 134 in 1997. In 2001, 46 farmers displayed 206 varieties. Participants like the seed show for many reasons: farmers can obtain rare crop varieties; they identify seed sources; it is a good forum for exchange of ideas on farming and exchange of seeds; farmers are exposed to national agricultural research work; the spirit of competition boosts farmer's morale and motivates farmers to diversify their crops indirectly

enhancing food security; and it is a platform for interaction between farmers, students, researchers, extension staff and other development agents. *ITDG*

#### Emergency Seeds for Agricultural Recovery in Tanzania <sup>4</sup>

The Lake Zone and Arusha Region are among the areas that were hard affected by the 1999 – 2000 drought. From mid-2000, CRS Tanzania started receiving requests for food assistance from the above-mentioned dioceses. However, it was already evident that free relief distribution is no longer the best option to help people recover from disasters. Therefore, CRS agreed with the affected households in communities to help them recover by providing them with seeds as a more sustainable way to produce not only their own food but also their own seeds for the coming seasons. The most vulnerable households were provided with vouchers to buy seeds at special seed fairs that were organised within their respective villages. On the one hand, local farmers and seed vendors were encouraged to bring whatever good seed they had for sale at the fair sites. On the other hand, beneficiaries of the vouchers were left free to buy seed of their choice, suitable for their farms and for the nutritional or economic needs of their families. Although the project areas had had severe droughts and crops failures, it was surprising to discover that certain community members had quantities of good seeds to sell at the fairs. The main lesson learnt is that the traditional seed system is very resilient and able to withstand even four years of drought.

The seed fairs showed that even though the seed coping mechanisms had collapsed for the more vulnerable in the community, there were still seeds available in the community to meet their needs.

*CRS Tanzania*

#### Community Seed Banks. in Paraíba, Brazil <sup>5</sup>

The north-eastern region of Brazil is known for its dramatic periods of drought. At the state of Paraíba, the lack of water available to small farms represents a major constraint on the food security of the local community. In these systems<sup>6</sup>, diversity is synonymous with food security.

<sup>3</sup> See [www.ukabc.org/abc.htm](http://www.ukabc.org/abc.htm)

<sup>4</sup> *Interim Report on Emergency Seeds for Recovery Projects, CRS Tanzania, Edward W Charles (Programme Representative) and Juvenal Kabligi (Senior Project Manager) CRS Tanzania. Edward@crstanzania.org; Juvenal @ crstanzania.org*

<sup>5</sup> From AS-PTA Brazil [aspta@alternex.com.br](mailto:aspta@alternex.com.br)

<sup>6</sup> *Family farms units are composed of home gardens, crop areas (corn, bean and cassava, mainly), pastures and orchards (esp. banana and citrus)*



Farmer access to seeds has been very difficult. The region's precipitation regime allows only one crop cycle per season and the reduced areas of the farms (most are under 5ha) do not provide enough seed production for feeding the family and keeping seeds for the next crop. Because of this, some local varieties have been lost.

Two other factors contribute negatively to genetic erosion:

- farmers need to adopt crop varieties to meet market demands;
- government seed programmes where only a few commercial varieties are distributed.

This collective seed supply and husbandry through Community Seed Banks (CSBs) is being built through participatory approaches and has furthered farmers' autonomy by timely provision of seeds and conservation of agricultural biodiversity. AS-PTA and other local organisations have trained farmers who by 2000 had organised 220 CSBs, benefiting 6,920 families, storing over 80 tons seeds of the main crop varieties, including 67 varieties of three different bean species. *AS-PTA*

## Conserving domestic animal diversity

### Reintroduction of Polish Red Cattle <sup>7</sup>

Polish Red cattle is an old local race that is very useful in some specific conditions especially in hilly and mountainous regions where controlled grazing protects slopes against erosion. They are being replaced by supposedly higher potential animals, which are often not suitable for the local conditions. To protect this local breed, Heifer International's office in Poland worked with the community of Zegocina to revitalise and increase the population of Polish Red Cattle in the region. 79 head were reintroduced to local farms. Farmers appreciate these cattle, because of their high productivity and resistance to disease. As a result Zegocina has also retained its beautiful landscape that attracts many visitors, supporting agro-tourism development. Moreover, the cattle constitute a very valuable genetic resource. In the year 2000 National

Livestock Show, a Polish Red cow from Zegocina was awarded the National Vice-Championship.

*Heifer International Poland*

### Participatory breed improvement of the Chiapas sheep <sup>8</sup>

Over the last four centuries, Tzotzil women in Mexico have developed the Chiapas sheep – a very hardy breed producing about 1.2 kg of wool per year. As this is low compared to typical wool breeds, extension services tried several times to improve wool production through crossbreeding with exotic breeds. However, all attempts failed because the introduced animals died or produced little in the harsh mountainous environment.

During the last 10 years, the Institute of Indigenous Studies at the University of Chiapas has been implementing a programme to improve the wool production of the Chiapas sheep. Selection of breeding animals is based on the criteria of Tzotzil women who regularly participate in evaluating fleece quality. The selected sheep are taken to the university farm where they produce offspring. Of these, the rams undergo a two-year evaluation programme before they are assigned to communities. The selection programme has resulted in significant increases in quality and quantity of wool. At the university farm, selected rams produce twice as much wool as village rams of similar age and under similar management. The acceptance of the 'improved Chiapas sheep' by the Tzotzil women has been high because the animals commonly adapt to local conditions within three days and Tzotzil women are involved throughout all project phases.

*Institute of Indigenous Studies, University of Chiapas, Mexico*

### Simple interventions with great impact: Conserving Aseel poultry <sup>9</sup>

The Aseel is a chicken breed in India. For centuries, Adivasi communities living in the East Godavari District have reared and selectively shaped this breed especially for its meat. Today, infectious diseases, high production losses and government policies promoting non-local breeds threaten its existence. In 1996, a group of organisations studied

<sup>7</sup> Contact Katarzyna Malec HI Poland [malec@delta.sggw.waw.pl](mailto:malec@delta.sggw.waw.pl)

<sup>8</sup> Gomez, T, Castro, H and R Perezgrovas. 2001. *The real sheep of the Tzotzil shepherdesses*. *Compas*.

<sup>9</sup> Ramdas, Sagari. 2001. *Conserving the Aseel poultry*. *Ecology and Farming* 27: 12-14



the local production system in 24 villages. A number of improvements were initiated: promotion of local fodder crops to improve feeding; training of village animal health workers and introduction of basic healthcare practices such as vaccinations and regular deworming; and education of women – who are responsible for the poultry – in improved animal husbandry. A follow-up survey conducted a year later revealed that overall mortality had fallen from 70% to 17%. The following year (1998-99) the mortality was down to 6% and the number of Aseel poultry had trebled. A further mechanism to enlarge the population was the revival of 'vaata', a traditional system of sharing and asset building. Initially, 196 women in 20 villages received 200 hens and 67 cocks. Within one year, the birds had produced more than 1414 chicks and the initial investment of 60,000 Rs. could be recovered. The main problems faced by the project were the difficulty in obtaining vaccines in small quantities, difficult access to markets and policies that favour crossbreeding.

*Anthra, Yakshi, Girijana Deepika, and Womens  
Gottis of East Godavari Adivasi Areas, Andhra  
Pradesh.*

## Restoring marine diversity

### Constructing Artificial Reefs<sup>10</sup>

In Kerala, SW India, local CSOs have worked with artisanal fishing communities to restore aquatic biodiversity in their fishing grounds. The solution was the construction of simple artificial reefs by village fishermen in response to loss of fishing grounds through destructive effects of trawling. India is the world's 7th largest producer of fish products and one quarter of India's catch is from the artisanal fishermen of Kerala who use very simple craft and gear. In the 1960's Norwegian fishery advisors advocated the introduction of trawlers. The village fishermen survive at subsistence levels and did not have the capital to invest in this technology. They saw the market price of their catch collapse, fall in catches through overfishing and destruction of natural reefs. Militant actions were taken to keep trawlers away and as a result Kerala fishing policy was changed, introducing a closed season for trawlers.

The fisherfolk also took long-term actions

themselves. Artificial reefs were constructed using any available materials: rocks, coconut palm stumps, tyres, concrete well rings and later triangular ferro- concrete units cast on the beach. These have restored aquatic ecology and fish breeding sites, provided inshore fishing sites (especially valuable for training youngsters and providing continuing occupation for elderly fishermen), made the fishery more reliable (with attendant financial benefits for subsistence economy) and created a sense of ownership and stewardship for the resource. The unmarked reefs also protect the artisanal fishing grounds by erecting on the sea floor a significant disincentive to trawlers whose nets snag on the underwater obstructions.

*International Collective in Support of Fishworkers  
(ICSF)*

## Challenging the introduction of GM fish

### Transgenic Salmon in Chilean Waters<sup>11</sup>

The North American company *Antifreeze Protein (A/F Protein)* based in Waltham, Massachusetts, has produced between 10,000 and 20,000 genetically engineered "super Atlantic salmon", and could in the near future begin commercial production of eggs for the salmon farming industries in Chile, Canada, New Zealand and the USA.

The "super-salmon", created by A/F Protein and christened "Frankenfish" by *Time* magazine, are adapted to live in marine environments with extremely low temperatures, thanks to an anti-coagulating protein produced by a gene taken from polar region fish. In addition to this they can grow twice as fast as traditional salmon, and are highly competitive and disease resistant.

Scientists, fishworkers and environmentalists have sounded the alarm about the potential impacts that could be caused by introducing these transgenic salmon. They are considered to be "a biological time-bomb", capable of destroying the wild populations of salmon in the Northern hemisphere, and upsetting the balance in populations of native aquatic species and the structure of communities where they are introduced.

In Chile there are also as yet unevaluated

<sup>10</sup> Contact ICSF [mdsaad06@giasmd01.vsnl.net.in](mailto:mdsaad06@giasmd01.vsnl.net.in)

<sup>11</sup> URL: [www.geocities.com/ecoceanos/Valparaiso](http://www.geocities.com/ecoceanos/Valparaiso), Chile



environmental, health and social impacts caused by the numbers of farmed salmon that escape annually into the wild. They prey on local marine fauna, where many species comprise the basis of important commercial fisheries, essentially artisanal in nature.

As far as transgenic salmon are concerned, no one knows what impacts would be caused by their escape into the wild. At present agreements exist that prevent the use of these types of products. However, given the combination of the current crisis in producing fishmeal for salmon feed, and the estimated 10% increase in the world demand for salmon over the next 5 years, the use of these transgenic fish in the highly competitive salmon industry may not be so far off.

*CENTRO ECOCEANOS, Chile*

## Developing agro-ecotourism

### **Promoting on-farm conservation of Andean tubers through agro-ecotourism, Peru** <sup>12</sup>

Cusco is important for tourism in Peru because it is the centre of pre-Hispanic Inca culture; however, the rural population benefits only marginally. One source of income is through the sale of their produce, mostly derived from the unique biological resources of the region. In recent years there has been a loss of traditional conservation practices and other customs (food, dress, etc.). This has been mainly because of the expansion of the use of high-yielding species and varieties in commercial agriculture, climatic factors, pests and diseases, inappropriate agrarian policies and development activities and poverty, which increase the migration of indigenous youth (with their knowledge, experience and customs of traditional Andean agriculture).

In the communities included in the present initiative, it is the local farmers who have conserved the wide range of local varieties of Andean root crops on farm. Rather than maximisation of yield or income they recognise the need to spread risks by planting mixtures of species on their small parcels of land to guarantee a harvest every year. The incentive provided by the development of agro-ecotourism could facilitate new mechanisms for promoting traditional conservation and sustainable use practices.

During guided tours to the communities, tourists will see the remarkable morphological and agronomic variety of Andean plants and tubers in demonstration plots, a potato museum and restaurants with menus based on traditional Andean produce. This proposed initiative intends to support a school education programme about Andean crops and culture and the participation of the young people in agro-ecotourism in order to reduce migration.

*ANDES/IPBN*

## Facilitating farmers' voices in the biotech debate

### **Citizens' Juries on GMOs** <sup>13</sup>

ActionAid recently began a series of Citizens' Juries that are bringing the perspectives of the developing world's farmers to national and global debates on GM crops. Instead of experts from the developed world telling the people of the developing world what is good for them, a jury composed of Indian farmers who could be affected by GM crops judged whether such crops could make their livelihoods better, or whether they would increase their poverty and insecurity. The jury demonstrated that the poorest farmers can have a sophisticated knowledge of the way new types of crop can impact on their lives. They saw interlinkages between different elements of new agricultural technologies that scientists and other specialists often miss.

Based on their mixed experience of the Green Revolution, the farmers were sceptical of GM crops, with a majority of two to one saying they did not want to grow them. They also called for a 5–10 year moratorium on the commercial release of GM seeds and for a system of insurance to protect their livelihood from the increased risks they would face. They had some useful suggestions for how the potential of future crop technologies could be improved, especially by becoming more farmer-led. ActionAid is repeating this process in other parts of the world so that the views of those with a real, practical knowledge of 'feeding the world' are put in their proper place at the forefront of the biotechnology debate.

*ActionAid*

<sup>12</sup> Summary available at <http://www.fao.org/WAICENT/FAOINFO/SUSTDEV/EPdirect/EPre0066.htm>

<sup>13</sup> Full report on <http://www.actionaid.org/pdf/jury.pdf>



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## Challenging perverse patents

### Patent challenge on Basmati rice <sup>14</sup>

In September 1997 a Texas-based company, RiceTec Inc., won a controversial US patent (No. 5,663,484) on basmati rice lines and grain. Basmati rice has been grown for centuries in what was the Greater Punjab region, now divided between India and Pakistan. Farmers in this region have selected and maintained Basmati rice varieties that are recognised worldwide for their fragrant aroma, long and slender grain and distinctive taste. RiceTec's basmati patent has become widely known as a classic case of 'biopiracy.' Not only does the patent usurp the basmati name, it also capitalises on the genius of South Asian farmers. The patent applies to breeding crosses involving 22 farmer-bred basmati varieties from Pakistan and India. The sweeping scope of the patent extends to such varieties grown anywhere in the Western Hemisphere (although the patent is valid only in the US).

There are numerous legal and technical concerns with respect to RiceTec's patent and its use of the name basmati. Ultimately, RAFI, the Berne Declaration and the Gene Campaign conclude that the core issue is morality. Farmers have selected and bred aromatic rice over generations. It is indecent and unacceptable for the genius of millennia to be usurped by a US-based company (controlled by European royalty). RiceTec's patent is predatory on the rights and resources of South Asian farmers, and it should be abandoned.

*ETC Group (formerly RAFI)*

## Protecting farmers' rights

### Contamination of crops with GM genes becomes farmer's crime <sup>15</sup>

Percy Schmeiser, a Canadian farmer, is the victim of Monsanto's contamination of his fields and crops by Roundup-Ready canola (oil seed rape) plants. This canola has spread involuntarily into his fields but Monsanto claim that they own his crops because their intellectual property (Round-up Ready genes) is contained in them. As a consequence, they claim his crop and all profits from it. He is appealing a decision by the Canadian courts that he is guilty of patent infringement. If Monsanto wins, it could claim any crop that becomes contaminated.

Of even greater concern than the harm done to Percy and Louise Schmeiser, is how this decision will affect all western Canadian farmers - regardless of whether they even grow canola, let alone GM canola. Land can be contaminated with proprietary seed in other ways. Intentionally planted RR canola (or any other herbicide tolerant (HT) canola), will lead to soil contaminated with shattered RR seed which might germinate not only the next year but in subsequent years. Emergence of 'volunteer' canola in subsequent crops is nothing new in western Canada - but what is new is that the volunteer plants bear proprietary genes and are tolerant to one or more common herbicides. Cross contamination of seed crops with GM seed is now so pervasive that seed companies will no longer guarantee "100% GM-free" even in the seed they sell to farmers, for any field crop that has been subject to genetic modification.

*IATP and others*

## Contamination of centres of diversity by GMOs

### Civil Society alerts CIMMYT to danger of pollution of Mexican maize <sup>16</sup>

Mexico is the birthplace of maize. To preserve this gene reservoir, the government banned planting of GM crops in 1998. However, contamination by GM maize imported from the USA has been found in a wide area of Oaxaca and Puebla states. At first, Mexico rejected the claims of contamination, but have latterly confirmed that there is contamination on a large scale. The worst contamination, 10% - 15 %, has been found near main roads. In remote areas, contamination is less at between 1% and 2%. The revealing factor is the presence of the cauliflower mosaic virus, which is used widely in GM crops as a promoter to "switch on" insecticidal properties of genes which have been inserted into them. Monsanto, Syngenta and Aventis all use the same technology.

Although three rounds of investigation at the International Maize and Wheat Improvement Center in Mexico (CIMMYT - one of the 16 CGIAR international agricultural research centres) had revealed no contamination of their maize genebank, the Director has confirmed that the presence of GM contamination in the environment means that it will be only a matter of time before contamination

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<sup>14</sup> See <http://64.4.69.14/web/docus/pdfs/basmatiupFD.pdf> accessible also through [www.etcgroup.org](http://www.etcgroup.org)

<sup>15</sup> See [www.percyschmeiser.com](http://www.percyschmeiser.com)

<sup>16</sup> See [www.ukabc.org/cop6.htm](http://www.ukabc.org/cop6.htm)



reaches the genebanks unless strict quarantine measures are taken.

Early in 2002, many leading Farmers' and other Civil Society Organizations joined together to write to Jacques Diouf, the Director-General of the UN Food and Agriculture Organization (FAO) and Ian Johnson, the World Bank Vice-President who chairs the Consultative Group on International Agricultural Research (CGIAR) to ask them to call for a moratorium on the shipment of GM seed or grain into their Centers of Genetic Diversity. Greenpeace subsequently stopped a shipment of contaminated maize destined for the port of Veracruz. Then, at a meeting of the Convention on Biological Diversity, CSOs, in support of the African Group, called on governments to implement an immediate moratorium on the importation of any seeds, feeds, grains of genetically modified crops in their Centres of Origin - Maize in Mexico, Potatoes in Peru, Wheat in the Fertile Crescent, Rice in Southeast Asia, Rape/Canola in northern Europe (see Annex).

No conclusive actions have yet been taken by governments nor the CGIAR, but CSOs are continuing to raise awareness of the dangers of this contamination to future food security.

*Food First, ETC Group / formerly RAFI, CSOs at  
CBD/COP 6*

## Monitoring IPR encroachment

### TRIPs-plus<sup>17</sup>

A limited, sample survey of bilateral agreements between developed and developing countries in five areas has been carried out to see how TRIPs-plus standards, with respect to biodiversity, are being imposed on developing countries. Five types of treaties were examined: trade, investment, aid, science and technology, and IPR. By far the most specific, in terms of TRIPs-plus measures are the bilateral trade and IPR agreements. The bilateral investment treaties, by contrast, are far less explicit but potentially even more damaging.

The criteria for what constitutes a TRIPs-plus treaty with respect to biodiversity are laid out in Table 1.

Using the TRIPs-plus criteria described above, and looking at only a portion of these agreements, 23 cases of bilateral or regional treaties between developed and developing countries that should be classed as TRIPs-plus as far as IPR on life forms is concerned, have been identified. These agreements affect more than 150 developing countries, suggesting that there is a deliberate process being pursued to appropriate developing countries' IPRs.

GRAIN

Table 1: Criteria for TRIPs-plus status of bilateral treaties

Subject matter	TRIPs-Plus provisions encountered	Why this is TRIPs-plus
Plants	Extension of standards of protection, such as: <ul style="list-style-type: none"> <li>• reference to UPOV</li> <li>• no possibility of making exclusions from patentability for life forms</li> <li>• reference to 'highest international standards'</li> </ul>	<ul style="list-style-type: none"> <li>• UPOV is not mentioned in the TRIPs agreement. There is no explicit measuring stick for 'effective sui generis system' and developing countries believe that they have options aside from UPOV.</li> <li>• TRIPs allows countries to exclude plants and animals from patent protection.</li> <li>• 'Highest international standard' is vague and there is no indication that it refers to TRIPs. While not automatically TRIPs-plus, it is highly suspect, particularly in the context of Most Favoured nation treatment of investments under the bilateral investment treaties.</li> </ul>
Animals	Same as plants	Same as plants
Microorganisms	Requirement to accede to the Budapest Treaty	There is no reference to Budapest Treaty in TRIPs. This treaty obliges parties to recognise the physical deposit of samples of micro-organisms, in lieu of full written disclosure of the invention, through an international depository authority.
Biotech	Requirement to protect 'biotechnological inventions'	There is no reference to 'biotechnology' in TRIPs. This introduces a new category for intellectual property protection. It also very strongly implies, where it is not stated, the availability of patent protection for plants and animals.

<sup>17</sup> See <http://www.grain.org/docs/trips-plus-en.pdf>



# Agenda for action

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Governments, while negotiating the International Seed Treaty, have themselves been promoting or facilitating, or at best tolerating corporate sector involvement in, a wide range of actions that are undermining diversity, threatening access to genetic resources, destroying rights and spreading genetic pollution.

Concerted actions by CSOs and Farmers' Organisations are therefore required across a range of activities, policies and international instruments.

## Genetically modified organisms

### Genetic pollution and the Biosafety Protocol

An ever-larger area is being sown to GM crops, increasingly in developing countries. More alarming is the spread of genetic pollution into conventionally bred crops and wild relatives. GM contamination of local varieties of Maize/Corn in Mexico, its centre of origin, brings into question the viability of guaranteeing the genetic integrity of on-farm and ex situ collections in Mexico, including those in CIMMYT. North American and European fields are permanently contaminated with GM rape/canola and, in Europe, this will spread to local wild populations in its centre of diversity. Rio Grande do Sul State in Brazil wants to keep GM free status, especially of Soya beans, but is being threatened by GM pollution and federal policy.

The strategy by the large companies producing GM seeds would appear to be one of deliberate pollution on-farm or in the seed processing plants so that in the end it will no longer be possible to claim any foods or crops are GM free. Industry and regulators are pushing for acceptance of GM pollution, even in 'organic' and 'GM free' foods.

Farmers and consumers are unwilling victims of this pollution. Local varieties of crops may well become contaminated through cross-pollination, mixed seed stock, illegal imports of GM seed or contaminated food aid grain being unwittingly used as seed. Contaminated GM fish stock are escaping into the wild. GM trees are long-term producers of GM pollution.

GM pollution is the latest threat to food sovereignty and should be addressed with utmost urgency by all competent intergovernmental, international and national bodies. The effects of GMOs on health and the environment are unknown. There is a lack of

reliable information about how agricultural GMOs function, what their impacts are within the genome, between varieties and species and on the environment and human health and a lack of conclusive confirmation that they will not cause harm in the long-term. Until more information is available there should be a ban on field experiments, production and marketing of agricultural GMOs. The precautionary principle should be strictly applied. There should also be rapid ratification and full implementation of the Biosafety Protocol on transboundary movements of GMOs, capacity building to enable communities and countries to make sound judgements about the technology and its possible social, technological, environmental and economic impacts, and agreement to implement clauses on liability and redress. The Biosafety Protocol should be especially vigilant on releases of GM seeds in Centres of Crop Diversity.

### Terminator Technologies and other GURTs

Genetic Use Restriction Technologies (GURTs) have been developed by the seed and biotechnology industry and one government for the principal purpose of restricting use of, and limiting access to, genetic resources. The purpose of GURTs is restricting such access and use to technology owners or licensed users who purchase seed each year or who buy proprietary chemicals that would change traits in these GM plants. Almost all of the major companies that control the agricultural biotechnology market have patents on GURTs. In August 2001, the USA licensed the first V-GURT (Terminator technology) application, in which it also has a financial interest. GURTs are a clear threat to food security, food sovereignty and agricultural biodiversity and, in the case of V-GURTs, deny Farmer's Rights by preventing farmers from saving seeds.

In concert with many countries, **CSOs demand that V-GURTs be banned outright, and patents denied, for moral and ethical (Ordre Public) reasons.** Also, as called for by CSOs and Indigenous Peoples in CBD/COP 6 in April 2002, and in accordance with the Precautionary Principle, **genetic trait control technologies (T-GURTs), should not be approved for field testing or commercial use until in-depth, independent environmental, socio-economic, and potential "military" impact assessments have been**





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carried out. The Africa Group, India, Philippines at CBD/COP 6 again called for a ban on V-GURTs without any further delay but this was unsuccessful. CBD/COP 6 called for further studies.

## Trade

### WTO

Some countries have proposed that a new WTO Agreement on Agriculture (AoA) should be negotiated. Others favour evaluating the existing Agreement's impacts on food production, livelihoods and the environment first, before any new set of rules is developed. The unqualified promotion of globalisation of markets through WTO rules that reduce local options for socially and environmentally sustainable production that sustains local food security and diversity, has impoverished many communities. **There should be no further liberalisation through the AoA, and consideration given to taking agriculture out of the WTO.**

### Food dumping

Cheap imports of food can provide relief during emergency food shortages or a way to lower food prices for consumers or local food processors without spending any public funds. Some developing country governments have therefore chosen to accept dumping for short-term reasons.

However, cheap imports of food sold at below the full costs of production in either the exporting or importing country, send the wrong message to the importing country's agricultural sector, resulting in long term damage to production. Developing countries have often ignored agricultural sectors and the natural resources on which they are based, or have even indirectly taxed them, in order to protect industrial development. The result has been a loss of productivity in agriculture, and thus depressed farm incomes, in these countries. This only exacerbates the need for future imports, which may or may not be available at "dumped" prices. For their part, spokespeople for the U.S. government have been explicit in their use of food aid and other dumped exports to create future markets that will eventually commit countries to buying their food from U.S. exporters

Dumping is clearly only one of several factors affecting food security, but the weight of evidence

suggests the long-term impact on food security, livelihoods and the environment is negative and difficult to reverse.

**WTO rules should allow, especially poor countries, to protect their own food producers, agricultural biodiversity and local trade.**

## Intellectual property rights and biopiracy

The diversity, development and sustainable use of the wide range of biological resources developed by farmers is severely threatened by industrial intellectual property systems that will reduce free access and availability of resources. These systems facilitate biopiracy as exemplified by headline cases of Basmati rice, Quinoa, Neem and Llacon. The Seed Treaty may also, if it does not reject IPRs on the genetic resources in the Multilateral System, increase biopiracy by increasing access to genetic resources that can subsequently be privatised. To confront these threats four actions must be taken:

- **TRIPs Art. 27.3(b)** that deals with patents on life **must be substantially reviewed** to permit countries to argue for all genetic resources for food and agriculture and plant varieties to be excluded from obligatory patentability. It must be made explicit that the International Union for the Protection of New Varieties of Plants (**UPOV**) Convention is not the only *sui generis* alternative to patents on plant varieties.
- The World Intellectual Property Organisation's (**WIPO**) "Intergovernmental committee on intellectual property and genetic resources, traditional knowledge and folklore" will consider rights to genetic resources for food and agriculture. **The committee must facilitate recognition of other systems, e.g. the African Union's Model Legislation on Community Rights as an alternative to TRIPs.**
- **The International Seed Treaty must not facilitate biopiracy. It must be unequivocal in its rejection of IPRs on material in the Multilateral System.**
- **The legal right to patent mere discoveries of genes and gene sequences, and varieties and breeds that are distinguished by traits found in existing farmers' and genebank material, must be revoked by Patent Offices.**



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## Concentration of power

### Corporate control of life sciences

The past five years has seen unparalleled increases in Corporate power in the Life Sciences industry. For example, only 10 companies control a third of the global seed industry. Tacit and informal interpretations of the WTO / TRIPs agreement Article 27.3(b) are encouraging countries to join the UPOV convention, which will further strengthen Plant Breeders' Rights that favour industry. The agricultural Research and Development agenda is dominated by a few private sector agribusinesses, with funding several orders of magnitude higher than public sector research, that are prioritising GE technologies, protected by gene patents. **There should be increased regulation and democratic controls over the ownership, investment in and activities of the Life Sciences industry to prevent their domination of agricultural research, genetic resources and agricultural practices.**

## Genetic resource conservation and development

### International Treaty on Plant Genetic Resources for Food and Agriculture – "International Seed Treaty"

Civil Society Organisations (CSOs) are urging governments to ratify the International Seed Treaty so that the Governing Body can be formed and can address the outstanding issues (see Box 3, below). The Governing Body will have to deal with interpretations of the text on IPRs, relationship with the WTO, benefits and financing. CSOs insist that the Treaty must not only ensure guaranteed access to the genetic resources for food and agriculture required by farmers and the implementation of Farmers' Rights, but also it must ensure that these resources and their "parts and components" cannot be privatised through IPR systems. **Genetic resources for food and agriculture should be kept in the public domain and biopiracy outlawed, otherwise why should farmers and their communities provide access to their resources, only to see them privatised?**

The Treaty must deliver benefits to farmers in developing countries, through mandatory payments and the financial mechanism, that are

commensurate with the benefits humankind derives from the use of plant genetic resources for food and agriculture. All the food we eat comes from these resources and farmers expect a reasonable share of the benefits that rich consumers derive.

It is imperative to ratify the Treaty and bring it into force as it will keep political space open for the intergovernmental discussion of these vital issues. As GRAIN notes *"The governing body that will manage the Treaty, and the multilateral system, should provide a political platform where issues related to crop genetic resources can be dealt with openly at the international level. Everybody, but especially farmers at the local level in need of continued access to agricultural biodiversity, stands to win from such a system."*

### Global Conservation Trust to protect genebanks

With its 11 genebanks and 600,000 seed samples, the CGIAR holds at least one-third of the world's unique and internationally accessible crop germplasm reservoir. The new International Seed Treaty re-enforces a 1994 FAO-CGIAR Accord that formally placed almost all CGIAR genebank material under the auspices of FAO and gave control for the collections to FAO. When 40 countries have ratified the new Treaty, the 1994 agreement will be renegotiated to strengthen the Treaty's governance over the CGIAR banks. CGIAR has been looking towards the concept of a Global Conservation Trust, a perpetual endowment to safeguard the most important national and international genebank, in perpetuity. As a 'trust' incorporated under US law, the endowment will have a board composed of some governments and private non-profit foundations, as well as a formal representative of FAO or the Treaty. It is likely that the UN foundation (a creation of Ted Turner of AOL - Time Warner/CNN) will host the Trust in New York. The US, which is not a party to the Treaty, may see the Trust as a way to gain control of the CGIAR genebanks by creating a public-private mechanism that will become the genebanks' main funder. It will be important to pay close attention to the organisational and political details of the Trust and the conditions it imposes on recipients of its funds so that all parties are comfortable with it and that it does not become an alternative governance mechanism to the International Seed Treaty.



### **Porto Alegre Treaty to share the global genetic commons**

At Porto Alegre in February 2002 CSOs from more than 50 nations announced their support for a treaty to protect the global commons. The Porto Alegre treaty already has the support of over 335 organisations. CSOs are working with political parties to introduce the Treaty in parliaments around the world over the next year. In August/September 2002, CSOs will demand that government delegates to the World Summit on Sustainable Development in Johannesburg endorse the Treaty and make it the centrepiece of future biodiversity conservation efforts. The proposed Treaty, as a strategy against patenting living matter and the creation of monopolies on genetic resources; aims to restore the situation which prevailed for millennia, when the sharing of genetic resources and associated information took place freely, leading to the development of a wide range of agricultural biodiversity. The Treaty has two fundamental principles:

- First, genetic resources are a patrimonial heritage of humanity: they are part of the global commons, a shared legacy and collective responsibility;
- Secondly, genetic resources and the information relating to them cannot be privatised or sold: free access should be sustained.

### **Genetic resources and agricultural biodiversity programmes**

Little progress has been made by governments in implementing the Leipzig Global Plan of Action on plant genetic resources for food and agriculture, the Global Strategy for the Management of Farm Animal Genetic Resources and the Agricultural Biodiversity decisions of the Convention on Biological Diversity (CBD) and FAO. Substantial reform of the CGIAR is seen by Civil Society and Farmers' organisations to be essential in order to protect publicly-funded, farmer-centred research and development and safeguard the 600,000 accessions in its genebanks provided by farmers over many decades. The International Seed Treaty may prove its salvation, if it can effectively provide an intergovernmental governance structure, especially for the genebanks.

Increased funding should be provided for this work, and increasingly directly to Civil Society and Farmers Organisations, through bilateral and multilateral sources, for example, by the Global Environment Facility (GEF), which has budget lines for the conservation and sustainable use of genetic

resources for food and agriculture. This should include providing further funds for international agricultural research - a preferable option to corporate sector funding through a proposed endowment fund (see above).

Governments must give greater priority to programmes for the conservation and sustainable use of genetic resources and agricultural biodiversity. In part this will be achieved through the Financial Mechanism of the International Seed Treaty, in part by GEF and in part by new funds from the public sector.

### **Farmers' rights and the right to food sovereignty**

Farmers' Rights are under threat from national legislation, IPRs, Trade Rules, GMOs, GURTs and yet are the "fundamental pre-requisite for the conservation and sustainable utilisation of agricultural biodiversity".

**CSOs call for the need for Farmers' Rights to be recognised internationally and legally protected under the auspices of UNHCHR.** The Rights to Food Sovereignty and Farmers' Rights are inseparable. Food is a basic Human Right and the Right to Food Sovereignty includes the right of access to productive resources, including genetic resources and agricultural biodiversity.

### **Livestock keepers' rights**

190 million pastoralists throughout the world are stewarding breeds with some of the most valuable genes for specific ecosystems. The value of their stewardship is recognised by the International Livestock Research Institute (ILRI) of the CGIAR to screen these breeds for genetic traits that can be used to increase the disease resistance of high performance breeds. One example is provided by the Red Maasai sheep whose genetic worm resistance is being sought to be transplanted into western sheep breeds that have become resistant to antihelminthics (dewormers). However the ownership of the genetic resources and purity of these indigenous breeds is coming under increasing pressure from the expansion of industrialised animal production into developing countries. **Provisions must be made to compensate pastoralists for the service they provide to humanity at large by husbanding breeds with traits that have disappeared from the genetic make-up of the high performance breeds. An international Treaty on Livestock-keepers Rights is necessary to safeguard their rights and prevent further acceleration of the loss of indigenous breeds.**



# Conclusion

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The August 2001 World Forum on Food Sovereignty, a preparatory CSO and Farmers' meeting for the World Food Summit: five years later, concluded:

*"Genetic resources are the result of millennia of evolution and belong to all of humanity. Therefore, there should be a prohibition on biopiracy and patents on living organisms, including the development of sterile varieties through genetic engineering processes. Seeds are the patrimony of all of humanity. The monopolisation by a number of transnational corporations of the technologies to create genetically modified organisms (GMOs) represents a grave threat to the peoples' food sovereignty. At the same time, in light of the fact that the effects of GMOs on health and the environment are unknown, we demand a ban on open experimentation, production and marketing until there is conclusive knowledge of their nature and impact, strictly applying the principle of precaution."*

The World Food Summit - five years later provides an opportunity to send clear messages about the importance of the International Seed Treaty, integrity of genetic resources and the global genetic commons to the World Summit on Sustainable Development (WSSD) in Johannesburg in September 2002.

The challenge for governments is quite simply this: is the world's agricultural biodiversity to be nurtured to provide profit for a few or food for all? The International Seed Treaty, while not perfect, could provide the start of an answer and the Summit, although potentially distracted by development targets, biotechnology and food aid, could be the medium to promote this global instrument.

**Continued access to genetic resources and conservation and development of agricultural biodiversity are essential components in the fight for food sovereignty. The governments participating in the World Food Summit - five years later and the World Summit on Sustainable Development must commit themselves to action. Farmers, their organisations and the CSOs that support them, will continue to do their part, but negative and perverse policies and programmes of the formal sector will constantly undermine their efforts.**

**The time to act is long overdue.**

**Actions are needed now to stem the haemorrhage of agricultural biodiversity and ensure the integrity of, and continued open access to, a wide diversity of genetic resources for food and agriculture in order to ensure food sovereignty and food security.**

*Paper compiled by ITDG (Patrick Mulvany<sup>18</sup> and Rachel Berger), with assistance, advice and contributions from ETC Group (Pat Mooney), GRAIN (Henk Hobbelink), Joyce Hambling, Ilse Koeller-Rollefson and Kristin Dawkins and many others who provided comments, contributions and case study material, not all of which could be included.*

May 2002

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<sup>18</sup> Contact [patrick\\_mulvany@compuserve.com](mailto:patrick_mulvany@compuserve.com)



### Box 3:

## CSO Statement on Agricultural Biodiversity and the International Seed Treaty (ITPGRFA)

*Presented at CBD/COP6, 10 April 2002*

We welcome the long-awaited conclusion of negotiations of the International Seed Treaty. The security of these crops and forages is now one step closer. They are important not only to produce the food we eat but also form part of the world's agricultural biodiversity and sustain agricultural landscapes. Plant Genetic Resources for Food and Agriculture sustain the lives and livelihoods and ecosystems of the majority of the world's population especially marginalised communities.

Thus the Treaty stands at the crossroads of Agriculture, Trade and Environment. We join with others in applauding the hard work the FAO Commission, especially the Secretariat and Chair Gerbasi, in achieving this historic agreement.

Our support is qualified, however.

Civil Society organisations, many of whom cannot be with us today, have worked for more than 20 years to get to this point, but it is only a first step in securing all genetic resources for food and agriculture - ensuring their sustainable use, conservation and continued open access by farmers, herders and fisherfolk, free of intellectual property rights restrictions.

As with the Biosafety Protocol we eagerly anticipate rapid ratification of the Treaty by 40 countries so that it can come into force. However, we urge the COP to put continued pressure on the Treaty's Governing Body to address the outstanding issues on intellectual property rights, relationship with the WTO especially TRIPs, material transfer agreements, financing, and strengthening the international implementation of Farmers' Rights.

The Treaty recognises Farmers' Rights to save, exchange and sell seeds but subordinates these to National Laws some of which are restrictive through recognition of patents and other IPRs on plant genetic resources. Other laws, such as the African Union Model Law on Community Rights does not subordinate Farmers' Rights but recognises them as inalienable.

Taking our inspiration from the preambular comment in your Convention:

"...that it is vital to anticipate, prevent and attack the causes of significant reduction or loss of biological diversity at source"

Agricultural biodiversity is in such a perilous state. Losses of more than 90% of crop varieties from farmers' fields in the past century are accelerating as the globalisation of trade, consumer cultures and patenting bites deeper.

Civil Society joins with others to call on the COP to underscore the importance of this Treaty, perhaps by making it the basis of a separately identifiable Decision.

Throughout these negotiations we have taken a consistent position in opposition to Intellectual Property Rights on genetic resources, and will continue to do so in defence of farmers and farming communities.

We would urge countries to make especial efforts to sign the Treaty before the World Food Summit: five years later in June this year and to ratify it by mid 2003. The issues this Treaty deals with are fundamental to food sovereignty, food security and the environment, but discussions need to continue in the political space created in the Governing Body to ensure that these resources are secured in the public domain in perpetuity.

*Statement supported by 200 organisations worldwide – see [www.ukabc.org/cop6.htm](http://www.ukabc.org/cop6.htm)*



## An Open Letter from Civil Society Organizations (CSOs) To Ambassador Philemon Yang of Cameroon, Chairman Third Meeting of the Intergovernmental Committee for the Cartagena Protocol on Biosafety (ICCP3) – 22-26 April 2002 – The Hague

Dear Ambassador Yang,

On the eve of the Third Meeting of the Intergovernmental Committee for the Cartagena Protocol on Biosafety (ICCP3), civil society organizations request urgently that the serious threat to biological diversity from genetic contamination in crop centers of origin and/or diversity be placed on the agenda of the ICCP3.

We note that the legally-binding Protocol on Biosafety, now gaining momentum towards its entry into force, aims to ensure the safe transfer, handling and use of living modified organisms resulting from modern biotechnology that may have adverse effects on biological diversity. The Protocol emphasizes the special role and importance of crop centers of origin and/or diversity, and also promotes a precautionary approach as the guiding principle for biosafety. These crucial elements of the Protocol reinforce the need for ICCP3 urgently to consider the issue of genetic contamination and its implications for farmers and food security as well as in-situ, on-farm, and ex-situ conservation of agricultural biodiversity.

In recent months, enormous controversy has erupted over evidence that the Mesoamerican Center of Crop Genetic Diversity has been contaminated with genetically modified (GM) maize material. These findings are alarming, not only because it is illegal to grow GM maize in Mexico, but especially because Mexico is the primary center of maize genetic diversity. Maize varieties developed over millennia by indigenous farmers, as well as maize ancestors, represent one of the world's most vital and indispensable reservoirs of genetic material for future plant breeding and the basis of food security.

In September 2001, Mexico's Ministry of Environment first reported that extensive GM maize contamination had been found in farmers' maize varieties in two states. Earlier this year, Mexico's Environment Ministry re-confirmed that GM contamination of farmers' varieties of maize had been found at contamination rates of up to 35% in remote villages of Oaxaca and Puebla. Recent articles in scientific journals have squabbled over the methodology used to characterize GM contamination in Mexico, but not over the fact that this contamination has occurred. Virtually all scientists agree that this Center of Crop Genetic Diversity has been contaminated with DNA from genetically modified plants.

We wish to emphasize that debate on this issue must not focus on the methodologies of detecting contamination, but on the more urgent matter of how to respond. Genetic contamination in crop centers of origin and/or diversity and its potential impact on farmers, food security and the biological diversity of all countries must be addressed as a matter of priority.

We call upon ICCP3 to:

- Acknowledge that GM contamination poses a potential serious threat to biological diversity in crop centers of origin and/or diversity;
- Propose an immediate moratorium, in accordance with the precautionary approach, on the release of living modified organisms for food, feed and processing (GM seeds and grain) or for research in those countries or regions that form part of the crop centers of origin and/or diversity for that species. Rigorous studies - excluding all trials in the open environment - on the risks and impacts of GM contamination must prove biosafety before this moratorium should be lifted;
- Initiate a process leading to rigorous studies on a crop-by-crop and region-by-region basis to determine what impact GM contamination may have in crop centers of origin and/or diversity supplying the world's food systems.

In addition, we call upon ICCP3 to initiate a process with the Secretariat of the Convention on Biological Diversity, the Food and Agriculture Organization of the United Nations (FAO) and the Consultative Group on International Agricultural Research (CGIAR) to:



- Undertake an investigation of how to ensure the integrity of germplasm held under the FAO-CGIAR Trust Agreement and that there are, and will be, no intellectual property claims pertaining to any of the Trust germplasm;
- Incorporate mechanisms in the FAO Code of Conduct on Biotechnology to control the diffusion of GM materials, whether through commercial trade or overseas development assistance, to ecologically and socio-economically vulnerable regions, and to guarantee that the burden of ecosystem restoration and compensating affected farmers and nations rests with the manufacturers and/or patentholders of these products;
- Examine the need to integrate rules and procedures to mitigate and prevent any further GM contamination in the legally-binding International Treaty on Plant Genetic Resources for Food and Agriculture.

*Signed by: ETC Group (formerly RAFI), Intermediate Technology Development Group (ITDG), Greenpeace, Institute for Agriculture and Trade Policy (IATP), FoodFirst, Econexus, Genetic Engineering Network (GEN), Netherlands Committee for IUCN, Diverse Women for Diversity (DWD) and the Federation of German Scientists... on behalf of the NGO Caucus at the 6th Conference of the Parties to the Convention on Biological Diversity.*

## Resumen: español

### **Para mantener la biodiversidad agrícola, y la integridad y el libre acceso a los recursos genéticos para la agricultura y la alimentación**

La soberanía y seguridad alimentaria, los medios de vida, los paisajes y la integridad ambiental, están apuntalados por la biodiversidad agrícola y sus componentes - los recursos genéticos para la alimentación y la agricultura. Estos han sido desarrollados, desde hace más de 12,000 años, por pueblos indígenas y hombres y mujeres agricultores, habitantes de los bosques, cuidadores de ganado y pescadores, utilizando el libre intercambio de los recursos genéticos en todo el mundo. Desde el advenimiento de la agricultura industrial y el aumento de la globalización de los mercados, los gustos y las culturas, mucha de esta riqueza de la biodiversidad agrícola se está perdiendo tanto en las fincas como en los bancos genéticos, y la integridad de estos recursos está puesta en mayor peligro por los organismos genéticamente modificados.

La Cumbre Mundial sobre la Alimentación: cinco años después y la Cumbre Mundial sobre el Desarrollo Sustentable, podrían jugar un papel importante para revertir estas tendencias decidiendo acciones para apoyar tres importantes acuerdos internacionales.

- El libre intercambio de semillas puede ser reforzado por el Tratado Internacional de la Semilla de la FAO (Tratado Internacional sobre los Recursos

Fitogenéticos para la Agricultura y la Alimentación), en tanto que inequívocamente prohíba las demandas de derechos de propiedad intelectual sobre estos recursos y asegure los derechos y recompensas a los agricultores.

- El Plan Global de Acción de Leipzig sobre los recursos fitogenéticos para la agricultura y la alimentación podría facilitar la ejecución de los acuerdos y decisiones existentes de la FAO y del Convenio sobre la Diversidad Biológica (CDB) y contribuiría a revertir la decadencia de la biodiversidad agrícola.
- Se podría dar cierta protección a la integridad de estos recursos genéticos con decisiones obligatorias del Convenio sobre la Diversidad Biológica, incluyendo la ejecución del Protocolo sobre Bioseguridad.

La Sociedad Civil y las Organizaciones de Agricultores acordaron, en el Foro de las ONGs de la Cumbre Mundial sobre la Alimentación en 1996, apoyar un amplio rango de medidas de política e investigación así como actividades de desarrollo que fortalecieran la diversidad, los derechos y la alimentación local, y la seguridad del sustento diario. Algunos ejemplos de sus realizaciones exitosas en el trabajo con comunidades locales en poco más de cinco años se destacan en este documento: al mantener la diversidad de cultivos; al conservar la diversidad de los animales domésticos; al recuperar la diversidad marina; el desarrollo del agro-ecoturismo; al permitir



que las voces de los agricultores se escuchen en el debate sobre la ingeniería genética; al desafiar las patentes perversas; al proteger los Derechos del Agricultor; y al controlar la invasión de los derechos de propiedad intelectual.

Los gobiernos, sin embargo, han ejecutado pocas de las actividades contenidas en el Compromiso 3 sobre la Agricultura Sustentable del Plan de Acción de la Cumbre de la Alimentación de 1996. Ellos han estado promoviendo o facilitando, o en el mejor de los casos, tolerando el involucramiento del sector corporativo en un amplio rango de acciones que están socavando la diversidad, amenazando el acceso a los recursos genéticos, minando los Derechos inalienables del Agricultor a guardar semillas, extendiendo la contaminación genética y comprometiendo la soberanía alimentaria.

Este documento concluye con una Agenda para la Acción de las organizaciones de la Sociedad Civil y las Organizaciones de Agricultores para que se den cambios en un ámbito de actividades, políticas e instrumentos en los niveles local, nacional e internacional. Estos cambios protegerían efectivamente la integridad genética de, y el acceso libre a la biodiversidad agrícola necesaria para sustentar los medios de vida, los paisajes y la vida en la tierra. La Agenda de Acción incluye llamados para:

- Una moratoria en la liberación de las semillas de cultivos genéticamente modificados en los Centros de Origen o Diversidad de estos cultivos.
- La prohibición de la tecnología del uso de restricción genética, incluyendo las tecnologías "terminator".
- Sacar el tema de la agricultura y especialmente el de los recursos genéticos para la agricultura y la alimentación dentro de la esfera de la Organización Mundial del Comercio (OMC)

## Résumé: français

### Soutien à la biodiversité agricole et la intégrité et libre-circulation des ressources génétiques pour l'alimentation et l'agriculture.

La souveraineté et la sécurité alimentaire, les moyens de subsistance, les paysages et l'intégrité de l'environnement sont renforcés par la biodiversité agricole et ses composants génétiques pour l'alimentation et l'agriculture. Ceux-ci ont été développés depuis 12,000 ans par des indigènes, hommes et femmes, fermiers, habitants des forêts,

- Terminar con el "dumping" o venta de alimentos subsidiados que castigan a los pobres.
- Prohibir la biopiratería y excluir a los recursos genéticos para la agricultura y la alimentación de la patentabilidad.
- Regular el poder corporativo sobre los recursos genéticos y el sistema de alimentación.
- Mejorar la conservación y desarrollo de los recursos genéticos incluyendo la ratificación del "Tratado Internacional de la Semilla", la protección de los bancos genéticos públicos en el dominio público y la ejecución de los planes de acción acordados.
- Hacer cumplir el Derecho a la Soberanía Alimentaria y los Derechos de los Agricultores, los Cuidadores de Ganado y los Pescadores Artesanales a los recursos que requieren para mantener la biodiversidad agrícola y los medios de vida.

La Cumbre Mundial sobre la Alimentación – cinco años después, da la oportunidad de enviar mensajes claros sobre la importancia del Tratado Internacional de la Semilla, la integridad de los recursos genéticos y los recursos genéticos globales comunes a la Cumbre Mundial sobre Desarrollo Sustentable a celebrarse en Johannesburgo en agosto y septiembre de 2002.

El desafío para los gobiernos es bastante simple: ¿La biodiversidad agrícola del mundo se nutre para otorgar ganancia a unos cuantos o alimento para todos? Se requieren de acciones ahora para parar la hemorragia de la biodiversidad agrícola y para asegurar la integridad de, y el acceso abierto y continuo a, una amplia diversidad de recursos genéticos para la agricultura y la alimentación con el fin de asegurar la soberanía y la seguridad alimentaria.

éleveurs de bétails et pêcheurs artisanaux, par le libre-échange de ressources génétiques a travers le monde. Depuis l'avènement de l'agriculture industrialisée et du développement de la globalisation des marchés, des goûts et des cultures, une grande part de la richesse de cette biodiversité agricole est en train de se perdre a la fois in situ et dans les banques des gènes. De plus en plus les organismes génétiquement modifiés compromettent l'intégrité de ces ressources.

**Le Sommet Mondial de l'Alimentation: cinq ans après** et le **Sommet Mondial sur le Développement Durable** pourraient jouer un rôle





important dans le revirement de ces tendances en décidant de soutenir trois accords importants internationaux:

- La libre-circulation des semences pourrait être améliorée par le **Traité International des Semences de la FAO** (Traité international sur les ressources phylogénétiques pour l'alimentation et l'agriculture) à condition d'interdire sans équivoque possible toute réclamation des droits de propriété intellectuelle de ces ressources et d'assurer les droits et rémunérations des agriculteurs.
- Le **Plan d'Action Global de Leipzig** sur les ressources phylogénétiques pour l'alimentation et l'agriculture pourrait faciliter la mise en application des accords et décisions pris par la FAO et la CDB et contribuerait à contrecarrer le déclin de la biodiversité agricole.
- L'intégrité de ces ressources génétiques pourrait être protégée par certaines décisions mandatées par la **Convention sur la Diversité Biologique** incluant la mise en application du **Protocole sur la prévention des risques biotechnologiques**

Les Organisations de Société Civile (OSC) et les Organisations des Agriculteurs se sont accordées, en 1996 lors du Forum ONG du Sommet Mondial de l'Alimentation, à soutenir une vaste gamme de mesures politiques et d'activités de recherche-développement visant à améliorer la diversité, les droits et la sécurité alimentaire et des moyens d'existence. Quelques exemples de leur réussite, ces cinq dernières années, en conjonction avec les communautés locales, sont soulignés dans ce document: maintien de la diversité des cultures, préservation de la diversité des animaux domestiques, restauration de la diversité marine, développement de l'agro-tourisme écologique, facilitation de la participation des agriculteurs aux débats relatifs à la biotechnologie, lutte contre les brevets pervers, protection des Droits des Agriculteurs, contrôle de l'empiètement des droits de propriété intellectuelle (DPI).

Toutefois les gouvernements n'ont appliqué que peu des activités de l'Engagement 3 (Agriculture Durable) du Plan d'Action du Sommet Mondial de l'Alimentation de 1996. Au contraire, ils ont eux-mêmes promu, facilité ou, au mieux, toléré la participation du secteur des grandes sociétés, à des vastes actions qui nuisent à la diversité, menacent l'accès aux ressources génétiques, détruisent les Droits inaliénables des Agriculteurs à préserver les semences, propagent la pollution génétique et compromettent la souveraineté alimentaire.

Cet document se termine par un Programme d'Action

créé par des OSCs et Organisations d'Agriculteurs, en faveur de changements dans un champ d'activités, de mesures politiques et de procédures légales au niveau local, national et international. Ces changements protégeraient avec efficacité, et l'intégrité génétique et le libre accès à la biodiversité agricole nécessaire au maintien des moyens d'existence, des paysages et de la vie sur terre. Ce Programme d'Action comprend les exigences suivantes:

- Un moratorium de l'émission de grains ou semences OGM dans les Centres d'Origine ou de Diversité de ces récoltes;
- La prohibition des technologies de restriction d'utilisation des ressources génétiques (GURTs) y compris les technologies "Terminator";
- Le retrait de l'agriculture et spécialement des ressources génétiques pour l'alimentation et l'agriculture de la responsabilité de l'OMC;
- La fin de l'écoulement à bas prix de stocks alimentaires pénalisant les pauvres; La prohibition de la biopiraterie et l'interdiction d'obtention de brevet pour les ressources génétiques pour l'alimentation et l'agriculture;
- La réglementation du pouvoir des sociétés sur les ressources génétiques et le système alimentaire;
- L'amélioration de la préservation et du développement des ressources génétiques comprenant la ratification du Traité International des Semences, assurant la protection des banques publiques de gènes dans le domaine public et la mise en application des Plans d'Action décidés;
- La mise en application du Droit à la Souveraineté Alimentaire et des Droits des Agriculteurs, des Éleveurs et des Pêcheurs Artisansaux à accéder aux ressources nécessaires pour le maintien de la biodiversité agricole et de leurs moyens d'existence.

**Le Sommet Mondial de l'Alimentation – cinq ans après** permet d'envoyer un message précis quant à l'importance du Traité International des Semences, de l'intégrité des ressources génétiques, et du patrimoine génétique commun, au **Sommet Mondial pour un Développement Durable (WSSD)** de Johannesburg en septembre 2002.

Le défi pour les gouvernements est très simple: la biodiversité agricole mondiale doit-elle être encouragée pour profiter à une poignée d'individus ou pour subvenir aux besoins alimentaires de tous? Des actions sont maintenant impératives pour enrayer l'hémorragie dont souffre la biodiversité agricole et assurer l'intégrité et l'accès à une large diversité de ressources génétiques pour l'alimentation et l'agriculture, afin d'assurer la souveraineté et la sécurité alimentaire.





Patrick Mukwany ITDG

Food sovereignty and security, livelihoods, landscapes and environmental integrity are underpinned by agricultural biodiversity and its component genetic resources for food and agriculture. These have been developed by indigenous peoples and women and men farmers, forest dwellers, livestock keepers and fisherfolk over the past 12,000 years through the free exchange of genetic resources across the world. Since the advent of industrial agriculture and the increasing globalisation of markets, tastes and cultures, much of this wealth of agricultural biodiversity is being lost both on-farm and in genebanks and increasingly the integrity of these resources is being compromised by genetically modified organisms. The World Food Summit: five years' later and the World Summit on Sustainable Development could play an important role in reversing these trends.

This paper provides examples of successful work by CSOs with local communities over the past five years are highlighted in this paper: maintaining crop diversity; conserving domestic animal diversity; restoring marine diversity; developing agro-ecotourism; facilitating farmers' voices in the genetic engineering debate; challenging perverse patents; protecting Farmers' Rights; monitoring Intellectual Property Rights (IPR) encroachment. It concludes with an Action Agenda from CSOs and Farmers' Organisations for changes in a range of activities, policies and instruments at local, national and international levels. These changes would effectively protect the genetic integrity of, and open access to, the agricultural biodiversity needed to sustain livelihoods, landscapes and life on earth.

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