SEED FREEDOM

A GLOBAL CITIZENS' REPORT

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Seed Freedom
A Global Citizens' Report

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The Seed Keeper

Burn our land
burn our dreams
pour acid onto our songs
cover with saw dust
the blood of our massacred people
muffle with your technology
the screams of all that is free,
wild and indigenous.
Destroy.

Destroy
our grass and soil
raze to the ground
every farm and every village
our ancestors had built
every tree, every home
every book, every law
and all the equity and harmony.

Flatten with your bombs
every valley; erase with your edicts
our past
our literature; our metaphor
Denude the forests
and the earth
till no insect,
no bird
no word
can find a place to hide.
Do that and more.
I do not fear your tyranny
I do not despair ever
for I guard one seed
a little live seed
That I shall safeguard
and plant again.

Anon.

Palestinian poem

Source: Wallpapersun.com

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Seed Freedom - What is at Stake

Dr. Vandana Shiva

Seed is not just the source of life. It is the very foundation of our being. For millions of years, seed has evolved freely, to give us the diversity and richness of life on the planet. For thousands of years farmers, especially women, have evolved and bred seed freely in partnership with each other and with nature to further increase the diversity of that which nature gave us and adopt it to the needs of different cultures. Biodiversity and cultural diversity have mutually shaped one another.

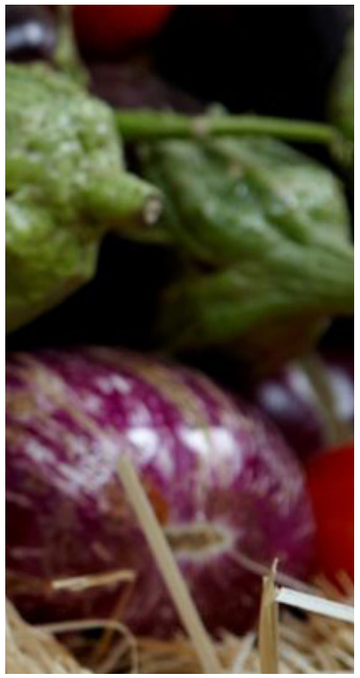
Today, the freedom of nature and culture to evolve is under violent and direct threat.

The threat to seed freedom impacts the very fabric of human life and the life of the planet. Seed keepers, farmers and citizens around the world have joined together as a Global Citizens Movement for Seed Freedom to respond to this Seed Emergency and to strengthen the movement for the freedom of humanity. The Global Movement for Seed Freedom is the start of a global campaign to alert citizens and governments around the world on how precarious our seed supply has become and, as a consequence, how precarious our food security has become.

Seeds are the first link in the food chain and the repository of life's future evolution. As such, it is our inherent duty and responsibility to protect them and to pass them on to future generations. The growing of seed and the free exchange of seed among farmers has been the basis to maintaining biodiversity and our food security. Navdanya was started 25 years ago to protect our seed diversity and farmer's rights to save, breed, and exchange seed freely, in the context of the emerging threats of the TRIPS Agreement (Trade Related Intellectual Property Rights Agreement) of the World Trade Organization (WTO) which opened the door to the introduction of GMOS, patents on seed and the collection of royalties.

A Monsanto representative later stated "In drafting these agreements we were the patient, diagnostician, physician all in one". Corporations defined a problem - and for them the problem was farmers saving seed. So they offered a solution, and the solution was the introduction of patents and intellectual property rights on seed, making it illegal for farmers to save their seed.

Photo by Marla Aufmuth



Seed as a common good became a commodity of private seed companies, traded on the open market. Today, the threat is even greater. Consider the following:

- The last twenty years have seen a very rapid erosion of seed diversity and seed sovereignty, and the rapid concentration of control over seed by a very small number of giant corporations.

- Acreage under GM corn, soya, canola, cotton has increased dramatically.

- Besides displacing and destroying diversity, patented GMO seeds are also undermining seed sovereignty, the rights of farmers to grow their own seeds and to save and exchange seed.

- In countries across the world, including in India, new seed laws are being introduced which enforce compulsory registration of seed, thus making it impossible for small farmers to grow their own diversity, and forcing them into dependency on giant seed corporations.

- Genetic contamination is spreading - India has lost its cotton seeds because of contamination from Bt. Cotton, and Mexico, the historical cradle of corn, has lost eighty percent of its corn varieties, and these are but two instances of loss of local and national seed heritage.

- After contamination, Biotech Seed Corporations sue farmers with patent infringement cases. More than 80 groups came together recently in the US and filed a case to prevent Monsanto from suing farmers whose seed had been contaminated.

- As farmer's seed supply is eroded, and farmers become dependent on patented GMO seed, the result is indebtedness. Debt created by Bt. Cotton in India has pushed farmers to suicide.

- India has signed a U.S. /India knowledge Initiative in Agriculture, with a representative of Monsanto on the Board, and states are being pressurized to sign agreements with Monsanto. An example is the Monsanto Rajasthan memorandum of understanding (MOU) under which Monsanto would obtain Intellectual Property Rights on all genetic resources as well as research on seed carried out under the MOU. After a campaign led by Navdanya and a "Monsanto Quit India" Beeja Yatra (Seed Pilgrimage) with relentless protests by farmers forced the government of Rajasthan to cancel the MOU. Monsanto influence on the US Government and the joint pressure of both on governments across the world is a major threat to the future of seed and the future of food.

- Wikileaks exposed the US government's intentions to proliferate the use of GMOs in Africa and Pakistan. Pressure to use GMOs imposed by US government representatives is a direct effort to support giant biotech business and to expand their markets.

- For the ballot initiative on GMO labeling in the US, corporations led by Monsanto are pouring millions of dollars to prevent citizens from exercising their right to know and right to choose.

These trends demonstrate a total control over the seed supply and a destruction of the very foundation of agriculture. The disappearance of our biodiversity and of our seed sovereignty is creating a major crisis for agriculture and food security around the world.
We are witnessing a SEED EMERGENCY at a global level.
Determined action is called for before it is too late.

The assault on Seed

A reductionist, mechanistic science and a legal framework for privatizing seed and knowledge of the seed reinforce each other to destroy diversity, deny farmers innovation and breeding, enclose the biological and intellectual commons, create seed monopolies.

Farmers varieties have been called land races, primitive cultivars. They have been reduced to a "genetic mine" to be stolen, extracted and patented. Not only is the negation of farmers' breeding unfair and unjust to farmers, it is unfair and unjust to society as a whole.

Industrial breeding has been based on strategies to sell more chemicals, produce more commodities and make more profits.

The High Yielding Varieties (HYV) of the Green Revolution were in reality High Response Varieties, bred to respond to chemicals. Hybrids are designed to force the farmer to the market every season, since they do not breed true "Yield". Focusing on the weight of a single commodity is an inappropriate measure. Commodities do not feed people - they go to producing bio-fuel and animal feed. Quantity empty of quality, and weight empty of nutrition does not provide nourishment. Beginning with the false assumption that farmers' varieties are "empty", industrial corporate breeding gives us seeds and crops that are not only nutritionally empty, but loaded with toxins.

The rendering invisible of the diversity that seeds farmers have bred began with the so called 'Green Revolution' The Green Revolution narrowed the genetic base of agriculture, encouraging monocultures of rice, wheat and corn. Varieties bred for response to chemicals were declared Miracle Seeds and High Yielding Varieties (HYVs).

Industrial breeding has used different technological tools to consolidate control over the seed - from so called HYVs, to hybrids, genetically engineered seeds, "terminator seeds", and now synthetic biology. The tools might change, but the quest to control life and society does not.

What I have called the "Monoculture of the Mind" cuts across all generations of technologies to control the seed.

1. While farmers breed for diversity, corporations breed for uniformity.

2. While farmers breed for resilience, corporations breed vulnerability.

3. While farmers breed for taste, quality and nutrition, industry breeds for industrial processing and long distance transport in a globalized food system.

Monoculture of industrial crops and monocultures of industrial junk food reinforce each other, wasting the land, wasting food, and wasting our health.
The privileging of uniformity over diversity, of the quantity over quality of nutrition, has degraded our diets and displaced the rich biodiversity of our food and crops. It is based on a false creation boundary which excludes both nature's and farmers' intelligence and creativity. It has created a legal boundary to disenfranchise farmers of their seed freedom and seed sovereignty, and impose unjust seed laws to establish corporate monopoly on seed. Whether it be breeders rights imposed through UPOV 91, or Patents on Seed, or Seed Laws that require compulsory registration and licensing, an arsenal of legal instruments are being invented and imposed undemocratically to criminalize farmers seed breeding, seed saving and seed sharing.

Every seed is an embodiment of millennia of nature's evolution and centuries of farmers' breeding. It is the distilled expression of the intelligence of the earth and intelligence of farming communities. Farmers have bred seeds for diversity, resilience, taste, nutrition, health, and adaption to local ago-ecosystems. Industrial breeding treats nature's contributions and farmers' contributions as nothing.

Just as the jurisprudence of Terre Nullius defined the land as empty, and allowed the take over of territories by the European colonies, the jurisprudence of intellectual property rights related to life forms is in fact a jurisprudence of Bio Nullius - life empty of intelligence. The Earth is defined as dead matter, so it cannot create. And farmers have empty heads so cannot breed.

The TRIPS Agreement and the ethical dimension

The deeper level at which the Seed Emergency is undermining the very fabric of life is the ethical dimension of this issue. We are all members of the earth family, a steward in the web of life. Yet corporations who claim legal personhood, are now claiming the role of creator. They have declared seed to be their "invention", hence their patented property. A patent is an exclusive right granted for an "invention", which allows the patent holder to exclude everyone else from, making, selling, distributing and using the patented product. With patents on seed, this implies that the farmers' right to save and share seed is now in effect defined as "theft", an "intellectual property crime".

The door to patents on seed and patents on life was opened by genetic engineering. By adding one new gene to the cell of a plant, corporations claimed they had invented and created the seed, the plant, and all future seeds which have now become their property. In other words GMO meant God Move Over.

In defining seed as their creation and invention, corporations like Monsanto shaped the Global Intellectual Property and Patent Laws so that they could prevent farmers from seed saving and sharing. This is how the Trade Related Intellectual Property Rights (TRIPs) Agreement of the World Trade Organization was born. Article 27.3(b) of the TRIPs Agreement states: "Parties may exclude from patentability plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and micro-biological processes. However, parties shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof." Again, this protection on plant varieties is precisely what prohibits the free exchange of seeds between farmers, threatening their subsistence and ability to save and exchange seeds amongst one another.

Photo by Marla Aufmuth

The TRIPS clause on patents on life was due for a mandatory review in 1999. India in its submission had stated "Clearly, there is a case for re-examining the need to grant patents on lifeforms anywhere in the world. Until such systems are in place, it may be advisable to:- (a) exclude patents on all lifeforms;"

The African group too stated "The African Group maintains its reservations about patenting any life forms as explained on previous occasions by the Group and several other delegations. In this regard, the Group proposes that Article 27.3(b) be revised to prohibit patents on plants, animals, micro-organisms, essentially biological processes for the production of plants or animals, and non-biological and microbiological processes for the production of plants or animals. For plant varieties to be protected under the TRIPS Agreement, the protection must clearly, and not just implicitly or by way of exception, strike a good balance with the interests of the community as a whole and protect farmers' rights and traditional knowledge, and ensure the preservation of biological diversity."

This mandatory review has been subverted by governments within the WTO: this long overdue review must be taken up to reverse Patents on life and Patents on Seed.

Life forms, plants and seeds are all evolving, self-organized, sovereign beings. They have intrinsic worth, value and standing. Owning life by claiming it to be a corporate invention is ethically and legally wrong. Patents on seeds are legally wrong because seeds are not an invention. Patents on seeds are ethically wrong because seeds are life forms, they are our kin members of our earth family.

The world view of Bio Nullius - empty life - unleashes violence and injustice to the earth, to farmers, and to all citizens. The violence of the Earth is rooted in both the denial of the creativity and the rights of the Earth as well as in the displacement of diversity.

Biopiracy

The violence to the farmers is three fold. First, their contribution to breeding is erased and what farmers have co-evolved with nature is patented as an innovation. We call this "biopiracy". Patents on life are a the hijacking of biodiversity and indigenous knowledge; they are instruments of monopoly control over life itself. Patents on living resources and indigenous knowledge are an enclosure of the biological and intellectual commons. Life forms have been redefined as "manufacture", and "machines", robbing life of its integrity and self-organization. Traditional knowledge is being pirated and patented unleashing this new epidemic of biopiracy. To end this new epidemic and to save the sovereignty and rights of our farmers it is required that our legal system recognizes the rights of communities, their collective and cumulative innovation in breeding diversity, and not merely the rights of corporations.

Secondly, patents lead to royalty collection which is simply extortion in the name of technology and improvement. If the first colonization based on Terre Nullius gave us land lords and "Zameendari" who pushed 2 million people to death during the Bengal Famine, the new bio imperialism based on Bio Nullius has given us life lords - the biotechnology/seed/chemical industry which have pushed 260,000 India farmers to suicide. In Brazil, farmers have been fighting against seed giant Monsanto, most recently filing a lawsuit hoping to sue the company for over 6 million euros on the grounds that the company has been unfairly collecting royalties from the farmers. The seeds Monsanto has been collecting royalties on, are from what are known as 'renewal' seed harvests, meaning that the seeds have been collected from the previous harvest, a practice used for centuries. But, because these seeds are from Monsanto's genetically modified plants, they are demanding that farmers pay. Not only are these royalties unfairly enforced, but they are pushing farmers deeper into debt that they cannot pay back, leaving them floundering in their fields of failed genetically-modified crops.

Thirdly, when the genetically engineered crops contaminate neighboring farmers' fields, the "polluter pay" principle is turned on its head and corporations use patents to establish the principle of "polluter gets paid". This is what happened in the case of Percy Schmeiser in Canada, and thousands of farmers in the U.S.

Owning and controlling life through patents and intellectual property rights was always the primary objective. Genetic engineering was the gateway to patents. Now, the corporations are taking patents on conventionally bred and farm-saved seeds.

During the first 'Green Revolution' (1950s/'60s), farmers breeding was neglected. During the second 'Green Revolution' (1990s) the biotech industries pushed for seed totalitarianism. Farmers' breeding is being criminalized. In 2004, an attempt was made to introduce a seed law in India which would require the compulsory registration of farmers' varieties. A Seed Satayagraha was started - the law has not yet passed... Satayagraha (Force of the Truth) was Gandhi's word for not cooperating with unjust laws. It means force of truth. Gandhi said "as long as the superstition exists that unjust law must be obeyed, so long will slavery exist."

Source: Flickr/Roberto Verzo «

Source: aulinjaamp.blogspot.com »

Photo by David Sanger©

We need to globalize noncooperation with unjust Seed Laws. This is at the core of the movement for Seed Freedom. The Stories of Seed Freedom are stories of courageous and creative individuals and organizations who are challenging unjust laws.

Patents on seed are unjust and unjustified. A patent or any intellectual property right is a monopoly granted by society in exchange for benefits. But, society has no benefit in toxic, non-renewable seeds. We are loosing biodiversity and cultural diversity, we are loosing nutrition, taste and quality in our food. Above all, we are loosing our fundamental freedom to decide what seeds we will sow, how we will grow our food and what we will eat. Seed as a common good has become a commodity of private seed companies, that unless protected and put back in the hands of our farmers', is at risk of being lost forever.

Resistance to unjust Seed Laws through the Seed satyagraha is one aspect of Seed Freedom. Saving and sharing Seeds is another aspect. That is why Navdanya has worked with local communities to reclaim seed diversity and seed as a commons by establishing more than 100 community seed banks. Across the world, communities are saving and exchanging seeds in diverse ways, appropriate to their context. They are creating and re-creating freedom-for the seed, for seed keepers, and for all life and all people.

When we save seed, we also reclaim and rejuvenate knowledge- the knowledge of breeding and conservation, the knowledge of food and farming. Uniformity as a pseudo scientific measure has been used to establish unjust IPR monopolies on Seed. And IPR monopolies reinforce monocultures. Once a company has patents on seeds, it pushes their patented crops on farmers in order to collect royalties.

Humanity has been eating thousands upon thousands of (8500) plant species. Today we are being condemned to eat GM corn and soya in various forms. Four primary crops - corn, soya, canola and cotton have all been grown at the cost of other crops because they generate a royalty for every acre planted. For example, India had 1,500 different kinds of cotton, now 95% of the cotton planted is GMO Bt Cotton for which Monsanto collects royalties.

Over 11 million hectares of land are used to cultivate cotton for which 9.5 million hectares of this land is used to grow Monsanto's genetically modified Bt variety. Corn is cultivated on over 7 million hectares of land, but of this area 2850,000 hectares are used for a 'High Yielding Variety' corn. Soya now covers an area of approximately 9.95 million hectares, and canola now comprises approximately 6.36 million hectares. This mass shift towards the cultivation of these crops not only threatens the diversity of other crops, but threatens the health and wellbeing of natural resources such as the soil, as this monoculture approach to farming drains the earth of its nutrients.

To break out of this viciousness of monocultures and monopolies, we need to create virtuous cycles of diversity and reclaim our biological and intellectual commons.

Participatory breeding of open source seeds, and participatory framing of open source rights are innovations that deepen seed freedom.

Seed Freedom has become an ecological, political, economical and cultural imperative.

If we do not act, or have a fragmented and weak response, species will irreversibly disappear. Agriculture and the food and cultural spectrum dependent on biodiversity will disappear. Small farmers will disappear, healthy food diversity will disappear, seed sovereignty will disappear, and food sovereignty will disappear.

By speaking and acting strongly in one voice in defense of seed freedom as the Global Movement, we can put the obscenity, violence, injustice and immorality of patents on seeds and life behind us. Similarly, in another period slavery was made a thing of the past. Just as today corporations find nothing wrong in owning life, slave owners found nothing wrong in owning other humans. Just as people back then questioned and challenged slavery, it is our ethical and ecological duty and our right to challenge patents on seeds. We have a duty to liberate the seed and our farmers. We have a duty to defend our freedom and protect open-source seeds as a commons.

This Global Citizen Report on Seed Freedom is a kernel/seed that we hope will multiply and reproduce until no seed, no farmer, no citizen is bonded, colonized or enslaved.

Source: annabananagoesgardening.blogspot.in

Source: fairfoodforall.wordpress.com

Living Seed – Breeding as Co-evolution

Dr. Salvatore Ceccarelli*

Three of the global issues most frequently debated today are biodiversity in general and agro biodiversity in particular, climate change and hunger: the three problems are interconnected and should be dealt with as such. As we will see later, seed production and seed sovereignty are central to the three problems.

It is now unequivocal that the climate is warming, as is evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level. It is also very likely that in several areas the frequency and the intensity of drought as well as the variability of the climate would continue to increase to alarming levels. Some of the most profound and direct impacts of climate change over the next few decades will be on agricultural and food systems (Brown and Funk, 2008).

In the context of climate change agro biodiversity is key to food security and today we witness a contradiction between the scientific literature emphasizing almost daily the importance of agro biodiversity on one side, and the continuous erosion of biodiversity on the other.

The industrialization of agriculture has caused an erosion of the diversity of crop varieties. Farms specialize in livestock or crops, reducing the number of species; fields are enlarged, reducing the extent of field margins and hedgerows; soil amendments enhance the uniformity of soils; and monocultures of genetically uniform individuals tend to dominate (Frison et al., 2011).

Plant breeding has contributed greatly to the decrease of agricultural biodiversity which can be quantified by the fact that barely more than 150 species are now cultivated; most of mankind now lives of no more than 12 plant species, with the four biggest staple crops (wheat, rice, maize and potato) taking the lion's share (Esquinas-Alcázar, 2010). Other examples from the World Conservation Monitoring Centre (1992) include:

- 74% of rice varieties in Indonesia descend from a common stock;
- 50% of the wheat crop in USA represented by 9 varieties;
- 75% of potato in USA represented by 4 varieties;
- 50% of soybeans in USA crops represented by 6 varieties;
- the number of rice varieties in Sri Lanka decreased from 2,000 in 1959 to less than 100 today of which 75% descend from a common stock;
- 62% and 74% of the rice varieties in Bangladesh and Indonesia, respectively, descend from a common stock.

Furthermore, the differences between collecting missions in Albania (1941 and 1993) and in south Italy (1950 and the late 1980s) showed high losses in genetic variability with levels of genetic erosion of 72.4 and 72.8%, respectively (Hammer et al, 1996). In India, rice varieties have declined from an estimated 400,000 before colonialism to 30,000 in the mid-19th century with several thousand more lost after the green revolution in the 1960s; also Greece is estimated to have lost 95% of its broad genetic stock of traditional wheat varieties after being encouraged to replace local seeds with modern varieties developed by CIMMYT (Lopez, 1994). (Lopez, quoted by Heal et al. (2004) also quotes a boast by Stalin to Churchill: "We have improved beyond measure the quality of our wheat. We used to sow all varieties, but now we only cultivate the Soviet prototype. Any other cultivation than that is prohibited nation-wide.")

The evolution of plant breeding helps explain the process of genetic erosion and how the changes in who is controlling seed production and seed supply occurred.

For millennia plant breeding was done (not necessarily in the way we define it today) by farmers. Selection started at the same time as domestication when the Neolithic man and women started intentional sowing, which applies strong, unconscious selection pressure (Zohary 2004). Alleles for non-shattering, lack of dormancy, reproductive determinacy and increased fertility of formerly sterile florets are all favored by the sowing-harvesting-sowing cycle (Harlan et al. 1973). After domestication, farmers have continued to modify crops for millennia and have been largely responsible for the spreading of crops across the planet (Gepts 2002). As they migrated across continents, they brought with them their seeds and their animals, which both needed to adapt to the new environments, the new soil types and possibly to new uses. This was possible because the seed they were taking along was far from being uniform and was therefore capable of adapting to new climates and soils.

In the plant breeding done by farmers there was an emphasis on specific adaptation not only to the environment (climate and soil) but also to the uses, so that it was obvious that the same farmer will select more than one variety of the same crop and that different farmers will select different varieties.

An important aspect of farmers' breeding was that the selection environment and the target environment was the same, a situation that avoids the negative consequences of Genotype x Location interaction on response to selection (Falconer 1981). Over thousands of years this process (farmers' breeding) led to the formation of landraces. As they were the result of a lot of hard work, farmers had a strong interest in saving seed and conserving the landraces.

Saving or conserving seed?

Farmers always conserved seed from harvesting to the next planting but saving implies doing something more, i.e., avoiding its loss. Conserving seed has also a "saving" component in the sense that if the farmer always plants and harvests the seed of the same landrace without falling into the temptation of buying "commercial seed of new varieties", he also conserves the landrace. Nevertheless, if he sows ALL the seed he has, then there is a danger that in the case of adversities all is lost, both the seed and the landrace. Therefore saving has a connotation of preserving from disappearance not only the seed but also all the knowledge associated with it.

Such landraces are still the backbone of a number of important food and feed crops in West Asia and North Africa, and particularly of those crops which have been domesticated in the Fertile Crescent such as wheat, barley, lentil and chickpea and many horticultural crops which are important in the traditional Arab cuisine.

Farmers in this area have developed special techniques to store the seed from harvesting to planting in conditions that usually favor insects and rodents: a Syrian farmer discovered that a powder, commercially available for the treatment of intestinal parasites in sheep, when sprayed over the jute bags containing the barley seed kept the seed free of insects and was repellent for the rodents.

The maintenance of the landraces requires special skills and farmers still remember that their fathers used to collect spikes (of wheat or barley) before harvesting, applying a sort of mass selection. The ability of some farmers to produce seed of good quality is well recognized, and when farmers in West Asia feel that their landrace needs to be "refreshed" - farmers say often that after few years the seed becomes "tired" - they always go to another farmer, always the same, to get the new seed (of the same landrace). There are stories, difficult to document such as the one of a drought in Tunisia, which left the farmers with no seed of a particular landrace. Eventually it was found that the wives had stored some seed in jars underground and even though in small quantity, it was sufficient to avoid the loss of the landraces.

Therefore, long before Mendel and long before plant breeding as we know it today, farmers planted, harvested, stored and exchanged seeds, and fed themselves and others, and in doing all this they built a considerable amount of knowledge about crops, their characteristics and possible uses, and their interactions with the surrounding environment.

With the re-discovery of Mendel's work, two major changes took place. Firstly, plant breeding was moved from farmers' fields to research stations and from farmers to scientists. What was done by very many farmers in very many different places started to be done by relatively few scientists in a relatively few places (the research stations) which with time became more and more similar to each other. Secondly, breeding for specific adaptation that was implicit in farmers' breeding, was gradually replaced by breeding for wide adaptation.

The best example of this change has been the development of the same high-yield varieties of common food crops in many countries, as a part of the green revolution. (Porceddu et al., 1988). The term Green Revolution was coined in March 1968 by William S. Gaud, the director of the U.S. Agency for International Development (USAID) to indicate the outcome of a development strategy based on a) new crop cultivars, b) irrigation, c) fertilizers, d) pesticides and e) mechanization. Within that strategy, the new varieties were obtained by selecting for wide adaptation. Not only was this exactly the opposite of what farmers had done for millennia, but the term wide adaptation was somewhat misleading because it indicates wide "geographical" adaptation rather than wide "environmental" adaptation (Ceccarelli, 1989).

In fact the agricultural environments in which these "widely adapted" varieties were successful were actually very similar (high rainfall, good soil fertility, and chemical control of pests and diseases) or were made similar by adding irrigation water and fertilizers when farmers could afford them. This caused four major problems. Firstly, the heavy use of chemicals soon began impacting the environment. Secondly, the poorest farmers and particularly those living in marginal environments were bypassed because they could not afford to purchase the chemicals needed to create the right environments for the new varieties – not all scientists agree on this, but most of the poor farmers do. The father of the Green Revolution, Norman Borlaug, pointed out a few years ago that "despite the successes of the Green Revolution, about two billion people still lack reliable access to safe, nutritious food, and 800 million of them are chronically malnourished" (Reynolds and Borlaug, 2006). Thirdly, there was a dramatic decline in agricultural biodiversity because on the one hand hundreds of genetically diverse local varieties selected by farmers over millennia for specific adaptation to their own environment and uses were displaced, and on the other hand the new varieties (despite having different names) were all very similar in their genetic constitution. Fourthly, seed production, which up to that point was in the hands of the farmers, became more and more centralized.

In these changes, there is no evidence that any use was made of, or any attention was paid to, the local knowledge accumulated by the farmers communities over thousands of years.

Eventually, and towards the end of the 19th century, plant breeding gradually went from being predominantly public to being predominantly private. The first consequence was that not all crops were treated equally, and some became 'orphan crops', neglected by science. These include some important food crops such as banana, cassava and yam. The second consequence was the need to protect the seed produced by private companies, and a seed legislation started to be developed that made illegal what the farmers had done for millennia: most of the laws which limit the exchange of seed do not have any biological justification. In fact, at least in most of North Africa and West Asia, farmers are still the major seed suppliers (Table XX) of major crops producing between 70% (in the case of cereals) and nearly 100 % (in the case of forage crops) of the seed required.

The figure of cereals is higher due mostly to wheat because in the case of barley, even though with variation from country to country they produce 90% of seed. In individual countries the farmer's seed covers from 95% or more as in the case of Yemen, to about 70% in the case of Tajikstan and Syria.

Source: wagtailurbanfarm.wordpress.com

Table XX Farmers as main seed suppliers of major crops in selected countries of North Africa and West Asia

	Cereals		Legumes		Oilseed		Forages		Industrial crops				
Country	PSD	ASS	PSD	ASS	PSD	ASS	PSD	ASS	PSD	ASS	PSD total	ASS total	% Formal
Algeria	102348	18076									323109	93135	29
Egypt	78655	27932	14071	1112	7432	93	22781	80	7244	11728	313759	81279	26
Ethiopia	291122	5985	214152	988	16450	55			98923		848753	22514	3
Iran	1148671	359060	0	0.0	9327.6	9312.4	2815	264	566957	23404	2876442	751100	26
Pakistan	88232	28145	64740	1126	66346	1886	60454	9943	404945	25776	1778553	314497	18
Tajikstan	13857	395	812				776		93912	23421	173385	52514	30
Syria	24402	4007	34021	802	1118		1429		112641	50176	532360	176068	33
Turkey*	393211	34525	96454	769	4751	9314	67971	2950	462405	70885	2663678	320593	12
Yemen	14353	51	1796		404		3155		50208	3142	87165	4220	5
Total	4296600	1017356	1144283	83797	1683247	317520	159380	13236	4421730	296872	19368988	3375600	17
% Formal		30		2.5		9		0.4		9		100	

PSD = Potential Seed Demand
ASS = Actual Seed Supply

SEEDversity - Salvatore Ceccarelli e il PPB (Source: vimeo.com/113436321)

While the actual figures may vary from year to year, from country to country and from crops to crops, what these figures mean is that first farmers are good at producing good quality seed because there is no documented cases of farmers' produced seed which has been the cause for the spreading of diseases, and second that, as mentioned earlier, limiting or considering illegal farmers' seed production can only be justified in terms of protecting a monopoly.

While saving seed and even exchanging seed with other farmers for biodiversity purposes has been a traditional practice, these practices have become illegal as the many plant varieties are patented or otherwise owned by some entity (often a corporation).[1] Under Article 28 of the Agreement on Trade-Related Aspects of Intellectual Property Rights (the TRIPS Agreement), "planting, harvesting, saving, re-planting, and exchanging seeds of patented plants, or of plants containing patented cells and genes, constitutes use" and is prohibited by the intellectual property laws of signatory states.

Following the privatization of breeding, another factor contributing to the loss of agro biodiversity was the consolidation of the seed grain industry globally, leading to a more limited choice of seed varieties (Heal et al., 2004): as of 2008 49% of the global seed market was controlled by four companies which also control 53% of the global pesticide market (Agrow News, 2008). A recent report (Fuglie et al, 2011) indicates that the consolidation of the grain industry is increasing.

Many international organizations, recognizing the value of agro biodiversity for the future of humankind, are promoting the conservation of local varieties and wild relatives of crops. The most frequent type of conservation is the ex situ conservation in gene banks currently there are about 1500 gene banks which hold more than seven million seed samples (Fowler and Hodgkin, 2004). Ten of the largest are hosted by the CGIAR Centers with very large collections (for example 108,925 rice samples from 124 countries; 150,000 unique samples of wheat and its wild relatives from more than 100 countries; 2,000 wild and 5,000 cultivated potato types, 6,000 sweet potato and more than 1,000 of other Andean root and tuber crops; 35,682 samples of beans, 6.499 of cassava and 23,140 of tropical forages).

While these gene banks are essential as a last resort in rescuing seed in case of natural disasters, they do not store everything and they freeze not only seeds but also their evolution at the time of collection. A proof of this is the comparison between wild relatives of wheat and barley collected in Israel over a period of 28 years (1980 and 2008) which shows that the samples collected in 2008 are all significantly earlier than those collected in 1980 and held in the gene bank (Nevo et al. 2012).

Another problem is that the material available in the gene banks is not easily accessible by farmers and therefore there has been a worldwide interest by farmers' communities to establish their own gene banks as a way to have direct control on the genetic resources they consider important to them. Farmers gene bank may be considered not to be the best place where to save seed because they often lack the equipment that guarantees the best storage conditions. Also the "official" can be in danger when these happen to be in war zones. Three of the most recent examples are Iraq's gene bank in the town of Abu Ghraib, which was ransacked by looters in 2003. Fortunately, there was a safety duplicate in the form of a black box at ICARDA, a CGIAR center in Syria. Mrs Sanaa Abdul Wahab Al-Sheikh, who worked at the Abu Ghraib gene bank, saved about a thousand accessions by hiding them underground and in her fridge. She now works at the new, rebuilt Iraqi national gene bank at Abu Ghraib and the accessions she saved from the old collection have been joined by hundreds of others that she's been collecting from farmers' fields since 2004. Typhoon Xangsane seriously damaged the gene bank of the Philippines national rice gene bank in 2006.

The ICARDA gene bank in Syria has an uncertain future given the current political situation, and although part of the germplasm has been safely duplicated,
the physical safety of the bank is far from being secured.

In North Africa and West Asia, the only known example of farmers' gene bank is in Iran. Farmers in Garmsar, Iran, started doing Participatory Plant Breeding (see later) in 2006. Their exchanges with professional breeders led to discussions about one of their main problems: drought. They remembered that their old landraces were more resilient to drought than modern varieties. When an international breeder asked them if they would be interested in reviving their landraces they said yes. This led to a small project where 160 landraces of wheat and 160 landraces of barley (all from Iran) were secured from the Gene Bank of an International Center (ICARDA) and planted in farmers' fields and evaluated by them. Older farmers identified several of the landraces and their characteristics were recorded. Having these landraces in their hands, and knowing how difficult it can be to access the seeds of national and international gene banks (especially without the help of collaborating breeders) led the farmers to decide to keep all of these landraces in their own hands for the future. They wanted to keep every single one just in case it might be useful in the future. This led to the establishment of the Garmsar Farmers' Seed Bank, the first of its kind in Iran in June 2011.

Projects similar to the one described in Iran were also conducted in Yemen and Jordan, two countries that have their own National gene bank and where farmers have a strong interest in conserving their landraces particularly in view of their possible role to cope with climate changes.

However, no matter who and how saves and conserves the seed, the seed in a jar, or in a plastic bottle, or in an aluminum foil, at low or ambient temperature, on the one hand it is absolutely necessary and on the other it is absolutely insufficient to cope with future challenges.

Therefore, in several countries of North Africa and West Asia, while reaffirming the importance for farmers to conserve (save) the seeds of their varieties, the concept of letting the seed evolve has been introduced because we do not know whether the genes they posses will be able to cope with the challenges of the future climate. The two concepts (conservation and evolution) are not in conflict.- and the concept of 'how to conserve evolution' will be discussed later.
In a recent document (Foresight. The Future of Food and Farming, 2011) three important points are made:

- Innovation in how to involve producers in improving yields sustainably is as important as innovation in research – there is still a need for far greater participation of producers in defining and monitoring success;
- With much technology development taking place at greater distances from the farmer's plot, stronger mechanisms are needed to ensure that representatives of poor farmers and groups experiencing chronic hunger are included in local and national fora;
- Smallholder farming has been long neglected. It is not a single solution, but an important component in both hunger and poverty reduction.

Source: waypointstheblog.wordpress.com

The document reassess in different words what is written in Article 6 of, the International Treaty on Plant Genetic Resources for Food and Agriculture (FAO, 2009) " The sustainable use of plant genetic resources for food and agriculture may include such measures as: promoting, as appropriate, plant breeding efforts which, with the participation of farmers, particularly in developing countries, strengthen the capacity to develop varieties particularly adapted to social, economic and ecological conditions, including in marginal areas". And one of the recommendations of the report of the United Nations (De Schutter, 2009) "donors and international institutions, including the Consultative Group on International Agricultural Research and FAO, should put farmers at the centre of research through participatory research schemes such as participatory plant breeding".

This widespread interest in participation has been recognized since the early 80's by scientists (social scientists first and later biological scientists) and in the case of plant breeding has been implemented as participatory plant breeding (PPB), a process by which farmers are routinely involved in a plant breeding program with opportunities to make decisions throughout (Halewood et al., 2007).

The model of participatory plant breeding we have implemented (Ceccarelli et al., 2000; Ceccarelli and Grando, 2007), initially in Syria and then gradually in Tunisia, Morocco, Jordan, Egypt, Eritrea, Algeria, Yemen, Iran and Ethiopia in crops such as wheat, barley, lentil, chickpea and faba bean, combines modern science with the "local knowledge", brings plant breeding back into farmers' hands – and not farmers back into breeding as a recent publication suggests (Almekinders and Hardon, 2006), and also encourages a return to diversity.

The main feature of PPB is that farmers (or in general, users) are involved in designing and developing technologies - not just in testing the final products of scientific research as done in conventional (non-participatory) research. Specifically, there are several differences between conventional and participatory plant breeding: in conventional plant breeding – and only with few exceptions - new varieties are selected on research stations by breeders and the final products are tested on farm. Adoption occurs at the end of the breeding process. In PPB new varieties are selected in farmers' fields jointly by breeders and farmers and adoption occurs during the breeding process. In order to be fully participatory the program needs to be inclusive with specific regard to women

because particularly in low-income countries they play a critical role in agriculture, and agriculture plays a critical role in their livelihoods. Purposively empowering women and focusing on their unique challenges will bring much wider gains in terms of poverty and productivity (Foresight. The Future of Food and Farming, 2011).

Scientifically, conventional plant breeding and PPB are the same process but PPB differs in three key organizational aspects:

- Trials are conducted in farmers' fields and managed by farmers;
- Farmers participate as equal partners in the selection process;
- The process can be duplicated independently in a large number of locations and countries, with different methodologies and germplasm depending on the crop and the country.

PPB can impact positively on biodiversity because, being a highly decentralized process, it produces varieties which are different from country to country, from village to village within a country, and even within the same village depending, among other factors, on the age, wealth and gender of the farmers. In addition to increasing biodiversity in space PPB increases biodiversity in time because the process is cyclic and there is a rapid turnover of varieties thus creating a system which makes it difficult for pathogens to spread. Another dimension of the biodiversity generated by PPB is that the varieties selected by farmers are often not homogenous, i.e. they are still genetically variable – like the landraces – in contrast to the majority of varieties produced by conventional breeding in which all the plants are genetically identical (pure lines, hybrids, clones).
Even though PPB has been practiced for only 20 years, there are already indications of impacts at various levels:

- Adoption: many new varieties have already been adopted by farmers even though the program is relatively new; in Syria more than 80 lines and/or populations have been named and adopted by farmers from the PPB trials since 2000, compared with seven varieties released by the conventional breeding program in nearly 25 years. In some areas of Syria the adoption of the PPB varieties has reached 80% of the barley area. In Jordan and Algeria, the first PPB varieties (one in each country) are under multiplication to be submitted to the variety release committee; in Eritrea three food barley, ten bread wheat and two durum wheat varieties have been selected by farmers, in Yemen two varieties of barley and two of lentil have been adopted, in Egypt three barley varieties have been selected by farmers in the project area (the North-West coast). In Iran, at the end of the first PPB cycle, farmers selected four varieties and are currently testing various types of mixtures between them. Two aspects of the participatory selection process are 1) the yield advantages, as high as 50-70% that are possible to achieve in low rainfall, drought stresses areas only by changing the variety – in these areas conventional plan breeding was never able to introduce any new variety; and 2) in most cases these yield advantages have been obtained using landraces for which farmers have consistently expressed a strong preference particularly in dry areas (Figure 15.4).

Source: gatherandgrow.org

Other types of impact include:

- Institutional: in several countries, policy makers and scientists are showing much more interest in PPB as it is expected to generate more relevant results more quickly and at a lower cost;

- Farmers' skills and empowerment: the interactive nature of the PPB programs has considerably improved farmers' knowledge, their ability to negotiate, and their dignity. It is because of their skills and their increased self-confidence that farmers in a number of countries started exploiting the additional advantages of evolutionary plant breeding as described in the next section;

- Biodiversity: different varieties have been selected in different areas in each country, in response to different environmental constraints and users' needs. Interest in landraces has increased as indicated by the request of farmers in Syria, Jordan, Algeria, and Iran to have access and to evaluate their landraces kept in the gene banks.

From the point of view of the global issues mentioned earlier, one of the advantages of PPB is that by matching one of the key recommendations of the interim report of the Special Rapporteur to the United Nations on the right to food ("Put farmers at the centre of research through participatory research schemes such as participatory plant breeding", pg 22) provides an increase of agricultural production directly in the farmers' fields making therefore those increases available and accessible.

Participatory plant breeding also has the ability of addressing the specific needs of family farms and to make them more productive thus alleviating poverty and meeting local and global food demand. This will shift the focus from large-scale industrial farming addressing the research themes for smallholdings, which are very different from those of large-scale farming because they involve, for example, concepts such as crop rotation, complements of animals and plants, and the use of animal waste as fertilizer (Godfray, 2010).

We mentioned earlier that gene banks are are essential as a last resort for rescuing seed in the case of natural disasters but they freeze not only seeds but also their evolution at the time of collection. This suggests that landraces and wild relatives should also be conserved in situ, i.e. in their own native environment. Based on the evidence that evolutionary

This idea was first proposed by Suneson (1956) as follows: "the core features (of the evolutionary breeding method) are a broadly diversified germplasm and a prolonged subjection of the mass of the progeny to competitive natural selection in the area of contemplated use".

We have implemented the first participatory- evolutionary breeding programs in 2008 by constituting a mixture of nearly 1600 barley F2 representing the entire ICARDA's barley crossing program of that year and hence including a wide range of germplasm from the wild progenitor, Hordeum spontaneum, to landraces from several countries and to modern breeding materials. The barley population was planted in 19 locations in Syria, Jordan, Algeria, Eritrea and Iran. This has been followed in 2009 by

adaptation has occurred in a number of species in response to climate change both in the long term and in the short term, and on the recent demonstration (using experimental evolution) that while out-crossing populations are able to adapt rapidly to environmental changes, also a small amount of natural crossing (such as in self-fertilizing crops) allows adaptation to stress environments to develop (Morran et al., 2009), we have attempted to make the process of in situ conservation more dynamic by combining participation and evolution in participatory-evolutionary breeding programs (Phillips and Wolfe, 2005; Murphy et al., 2005; Ceccarelli et al., 2010).

These programs could represent a dynamic and inexpensive strategy which will quickly enhance the adaptation of crops to climate change and that will combine better adapted varieties with the mitigation effects of eco-efficient management systems.

a population of durum wheat consisting of a mixture of slightly more than 700 crosses which was planted in four locations, and in 2010 by a population of nearly 2000 segregating populations of bread wheat which was planted in two locations (one of which for seed multiplication). These populations will be left evolving in a multitude of environments, chosen by the farmers and characterized by single abiotic or biotic stresses or combinations of stresses and under different types of agronomic management (Figure 1) with the expectation that the frequency of genotypes with adaptation to the conditions (climate, soil, agronomic practices and biotic stresses) of the locations, where each year the population is grown, will gradually increase. The simplest and cheapest way of implementing evolutionary breeding is for the farmers to plant and harvest in the same location. It is also possible and actually desirable, to plant samples in other locations affected by different stresses or different combinations of stresses by sharing the population with other farmers. For example, in Iran the barley population which was planted by five farmers in two provinces in 2008, spread to 50 farmers in four provinces in the cropping season 2010-2011 and is currently grown on more than 300 ha.

However, the best way of exploiting the progressive better adaptation of the evolutionary populations is to consider it as an evolving source of new cultivars progressively better adapted to the evolving agronomic and climatic conditions: to do this farmers, by themselves or jointly with scientists, can use these evolving populations to select the most desirable plants, spikes, panicles, roots, tubers etc. – depending on the crops and use them in participatory breeding programs as described earlier.

While the population is evolving, the lines or sub-populations can be tested as pure lines (in the case of self-pollinated), clones (in the case of vegetatively propagated) or populations (in the case of cross pollinated) in the participatory breeding programs, or can be used as multi lines, or a subsample of the population can be directly used for cultivation exploiting the advantages of genetic diversity described earlier. The key aspect of the method is that, while the lines are continuously extracted, evaluated and exploited, the population is left evolving for an indefinite amount of time, thus becoming a unique source of continuously better-adapted genetic material directly in the hands of the farmers – a sort of evolving gene bank.

Source:
wagtailurbanfarm.wordpress.com

In Iran, the interest generated by the barley population has suggested the Iranian breeders to make their own bread wheat and durum wheat populations. The evolutionary bread wheat population, created by mixing Iranian breeding material was distributed and planted in different regions of Kermanshah province and showed resistance to lodging and rust and out-yielded the most widely grown cultivar Sardari (Hagparast, personal communication).

Eventually farmers communities holding collections of landraces can develop their own evolutionary populations.

While keeping the original collection, they can use a little amount of seed from each landraces, mix it, plant the mixture and leave it to evolve.. With the skill they already have or those they have acquired through participatory plant breeding, they can eventually accelerate the process of evolution by applying artificial selection. As the population evolves, they may conserve year after year some seed of the evolving population, thus conserving evolution.

Combining seed saving with evolution and bringing back the control of seed production in the hands of farmers, can produce better varieties and more diversified that can contribute to help millions of farmers to reduce the dependence external inputs and vulnerability to disease, insects and climate change, and ultimately contribute to food security for all.

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The Loss of Crop Genetic Diversity in the Changing World

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1. Introduction

Crop genetic diversity has not been evenly distributed throughout the cultivated parts of the world. Needless to say that it cannot exist in the non-cultivated parts except in the trivial sense of it having been taken there to be consumed or stored. Owing to inherent environmental diversity of particular areas of the world coupled with the history of agricultural development in relation to those areas, there have been hot spots of crop domestication and genetic diversification. These crop genetic diversity hot spots have come to be called Vavilov Centres to honour the Russian scientist who first identified 8 of them. Subsequent scientists have tended to think that, though such centres can indeed be identified, they are more than 8, and that, more importantly, crop domestication and diversification has been geographically more diffuse than initially thought to have been.[1,2] Many complex reasons are now causing a fast reduction in crop genetic diversity even in the Vavilov Centres.

2. Globalization and Crop Genetic Diversity

The accelerating increase in communication is mixing ideas, technologies, cultures and even people throughout the world. This process seems to be taking us towards one homogenous global culture. However complex this evolving global culture might turn out to be, it is inevitable that we will have lost much of the content of our erstwhile diversity in the process of achieving it. We have already witnessed a high level of attrition in our crop genetic diversity[3]. And yet, the very process of globalization is changing the world's environment, thereby increasing the need for crop genetic diversity to adapt agriculture to the changing farm conditions. If human survival into the indefinite future is to be assured, the globalizing humanity has to put all its efforts into the increase of crop genetic diversity, rather than fatalistically accept the accelerating decrease.

The southern parts of Europe constitute a part of the Mediterranean Vavilove Centre. This is now part of the industrialized world, also often referred to as the global North. The rest of the industrialized world is relatively unimportant as a source of crop genetic diversity. All the other important Vavilove Centres are in the developing world, also referred to as the global South. The problems of conserving crop genetic diversity are, therefore, geographically problems of the developing world though, of course, the erosion of crop genetic diversity concerns the whole of humanity. Because of these and related reasons, the difficulties in the actions that are required to maintain crop genetic diversity remain intimately linked to the problems of development that the South is facing in this era of globalization. The fact that globalization is led by the North while crop genetic diversity is mostly in the South marginalizes the causes of failure to protect this diversity and thus confounds the difficulties in the actions that need to be taken even when there is a global will to do so. Usually, in fact, there is insufficient national, let alone global, will to take all the needed action. And yet, the very process of globalization, which is exacerbating the erosion of crop genetic diversity, is also making that very diversity essential for the continuation of human wellbeing into the future.

Though like all futures this particular one is uncertain, at least one facet is becoming clear: climate is changing[4], and a commensurate increase in crop genetic diversity is required for adapting to that change.

In the 2nd half of the 20th century, many scientists and scientific institutions realized that the world's future food supply was in danger because of crop genetic erosion and that something had to be done. The simplistic action was to store in gene banks the crop genetic diversity that would have disappeared otherwise. There are now globally many gene banks which are trying to save as much crop genetic diversity as they can.[5] But their problems are many, [6, 7] and their success has thus been limited.[8, 9]

The most recent and most tantalizing quick fix arose in the form of genetic engineering that promised to synthesize any desired crop variety in the laboratory. But some of the thus newly synthesized varieties emerged with unforeseen problems.[10] The evidence for the complication of agricultural systems because transgenes from crops can get incorporated in the genomes of wild relatives through cross-pollination and thus, for example, make some weeds pernicious, is even more plentiful in scientific literature.[11,12] For these reasons genetically engineered crop varieties have now become highly controversial in many parts of the world.

In many parts of the developing world, for example in Ethiopia,[13] there are vibrant farming communities that are still increasing crop genetic diversity, both through breeding new farmers' varieties of existing crops, and through domesticating altogether new crop species. However, when the whole trend is considered, erosion is far greater than generation of crop genetic diversity even within the developing countries in Vavilov Centres, let alone globally.

3. Industrial Agriculture and Crop Genetic Diversity

The strategy used in industrial agriculture, also often referred to as the green revolution, is based on irrigation and chemical fertilizer to provide a homogenous environment[14] so that a crop variety selected for the purpose produces an evenly high yield throughout the cultivated land. In this way, crop varieties that had been adapted to the diversity of environmental conditions that had existed in an area prior to its coming under industrial agriculture are being eliminated. The resulting extensively grown monocultures become susceptible to disease and pest epidemics.[15] Soil erosion also increases[16], and much land is lost owing to salinization.[17, 18]

4. Intellectual Property Rights Regimes and Crop Genetic Diversity

Most of the crop varieties currently under cultivation are protected by intellectual property rights. Some of them are, in fact, patented. This makes for a one-way track of availability of crop varieties from the small holder farmers of developing countries to companies which are mostly in industrialized countries. This one-way flow is making access to crop genetic diversity from developing countries difficult especially to those very developing countries that gave rise to it in the first place. This is especially true of patenting.[19]

Source: schoolnutritionphils.wordpress.com

Source: storehouse.co »

Source: foodtank.com »

5. Changes in Food Habits and Crop Genetic Diversity

Globalization has induced a tendency towards uniformity in eating habits. A report prepared for the United Nations Environment Programme (UNEP) states that although about 7000 species of plants have in the past been used as human food, urbanization and marketing have now reduced them. Only 150 crops are now commercially important, and rice, wheat and maize alone now account for 60% of the world's food supply. The genetic diversity within each crop has also been eroding fast. For example, only 9 varieties account for 50% the wheat produced in the United States of America and the number of varieties of rice in Sri Lanka has dropped from 2, 000 to less than 100.[20]

Partly as a reaction to the erosion of crop genetic diversity and more because of a growing realization that industrial agriculture pollutes the environment and is, in the long run, unsustainable, the organic movement is now growing globally. This will help slow the erosion of crop genetic diversity. However, as far as the limited current experience tells us, the organic movement that is being generated by the globalizing world is not making sufficient linkages with the local community farming that has as yet not been swallowed up by the process of globalization. And yet these 2 sectors have commonalities and they could strengthen each other.

6. Genetic Engineering ' Not a Universally Accepted Source of Crop Genetic Diversity

Genetic engineering, often referred to as "biotechnology", started with an aggressive propaganda claiming that it will create new varieties that would solve all agricultural problems. The propaganda swayed even the United Nations Organization. In 2001, the United Nations Development Programme wrote, "Biotechnology offers the only or the best 'tool of choice' for marginal ecological zones.... home to more than half of the world's poorest people...."[21]. But, no varieties of significantly wide distribution that increase agricultural production compared to their non-genetically engineered counterparts have so far been produced through genetic engineering.[22]

On the negative side, unexpected impacts that harm human and animal health, agriculture and the environment have been encountered in some genetically modified crop varieties.[23, 24, 25]
But then, this was anticipated and that is why we now have the Cartagena Protocol on Biosafety to help avoid adventurism in the application of genetic engineering in agriculture and in other sectors. However, the major producers of genetically modified crops, e.g. U.S.A. and Canada, are not parties to the Protocol.
There are reports of biopharming with transgenic crops - planting crops genetically modified to produce pharmaceuticals or other chemicals - in the U.S.A.[26]
This means that we face a future when food crops are likely to be permanently contaminated with medicines or even other chemicals through cross-pollination with the varities planted for biopharming.

It is conceivable that we could lose some crops totally because of mishaps that end up in extensive cross-pollination of this nature. The fact that the countries where biopharming is being developed are mostly not parties to the Cartagena Protocol on Biosafety complicates the problem.

7. Ethical Considerations

It is now clear, however, that globalization is eroding crop genetic diversity faster than ever.

Climate change, a product of the very process of globalization, is also changing the environment faster than ever[27]. To continue feeding ourselves and to enable future generations to feed themselves, agriculture must keep adapting to the changes in environment as fast as they occur.
To be sure that agriculture can keep changing as fast as it must, we need more crop genetic diversity than we ever had. If we stop atmospheric pollution immediately, the Earth's climate will still change though it would probably stabilize after some time. Even if we were to be able to stop polluting the atmosphere immediately, therefore, we would still need as big a crop genetic diversity as we can muster. This makes it necessary for us to conserve all the crop genetic diversity that we have as well as regain in full the capacity to generate crop genetic diversity that we have partly lost in the last 100 years. We must, therefore:

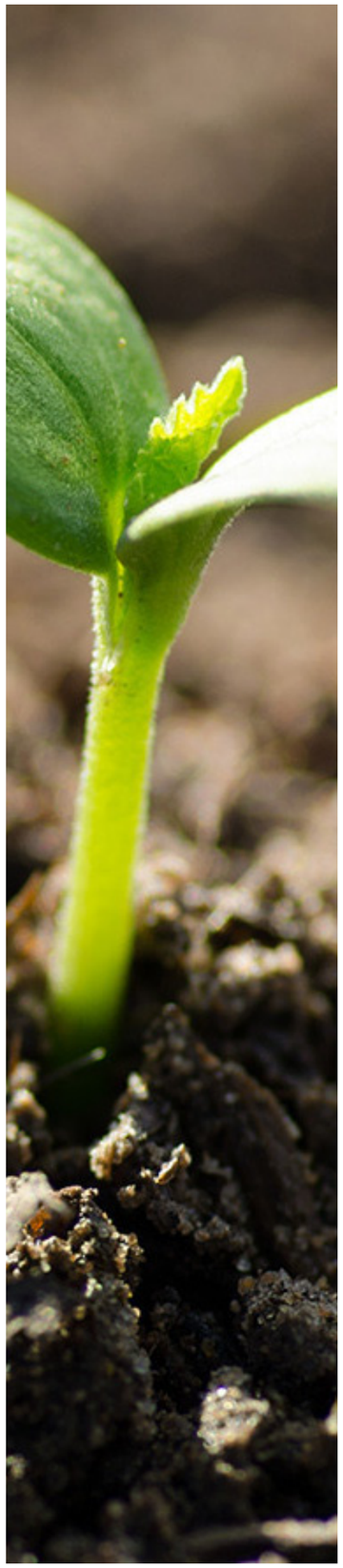
7.1. fund sufficiently existing gene banks and build new ones as needed for ex - situ crop genetic diversity conservation

- to keep all existing unique collections ensuring that they are all always viable and accessible for breeding;
- to regenerate all existing unique collections without genetic drift changing their unique identities;
- to make new unique collections before they disappear for good;

7.2. foster the growing organic movements to make their agricultural production systems crop genetic diverse so as to match the environmental diversity of the land that is under cultivation;

7.3. foster the establishment of mutually supportive linkages between the primarily subsistence farming communities in the South and the growing commercial organic farms which are primarily in the North for developing agricultural systems suited to the diversity of environments so as to maximize both production and crop genetic diversity.

7.4. consciously foster, including through subsidies when required, the in-situ conservation of crop genetic resources by organic farmers, both primarily subsistence and commercial, both in the North and in the South;



Source: croptrust.org

7.5. help organic farmers, both commercial, primarily in the North, and subsistence in the South, in research and development for maximizing both crop genetic diversity and yields in the diverse environmental conditions of the changing Earth - this is needed also because agrochemicals are getting expensive with time owing to rises in petroleum prices, and industrial agriculture may soon become not affordable anywhere;

7.6. condemn as immoral the patenting of crop varieties because the process sucks in crop genetic diversity from primarily subsistence farming communities but restricts the resulting varieties into circulating only among the rich, especially when natural cross-pollination passes patented genes from genetically modified crop varieties to non-modified varieties;

7.7. declare Article 27.3 (b) of TRIPs as immoral;

7.8. make biopharming using food crops a criminal offence; and reduce biopharming with non-crop plants to the minimum to protect the environment, and even then, use it under strictly contained conditions to ensure environmental safety.

*Sue Edwards and Tewolde Berhan Gebre Egziabher founded the Institute for Sustainable Development (ISD) based in Addis Ababa, Ethiopia. Tewolde Egziabher is the head of the Ethiopian Environmental Protection Authority. He has received a number of awards, including the Right Livelihood Award in 2000 and the United Nations Champions of the Earth award in 2006.
www.isd.org.et

Note

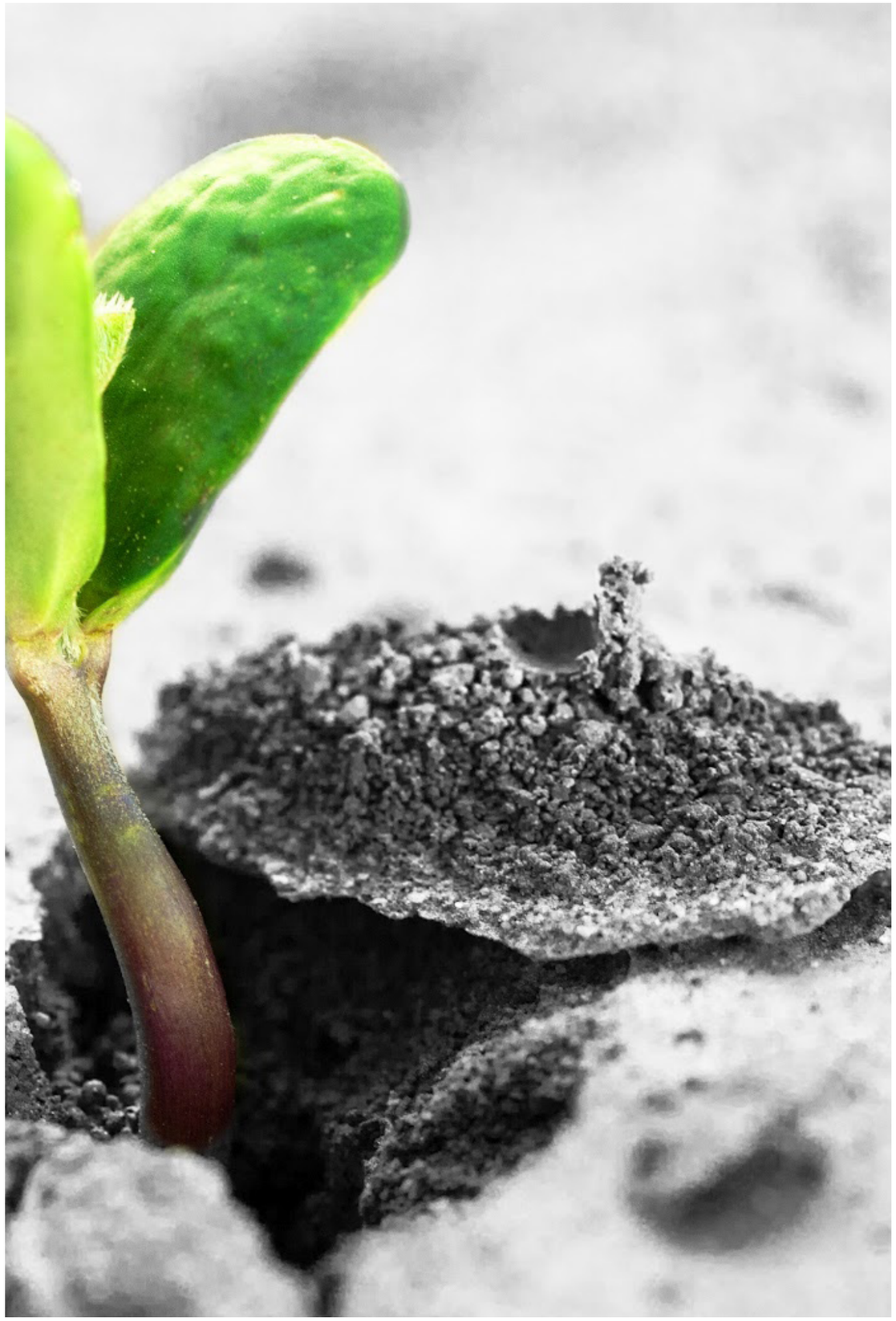
[1] Penderleith, Kristina, 1999, "Traditional agriculture and soil management", in Posey, Darrell A., (ed), Cultural and Spiritual Values of Biodiversity, International Technology Publication: London for , and on behalf of, UNEP p. 317.
[2] Among many, Harlan, Jack R., J.M.J. De Wet and Ann Stemler, 1976, "Plant domestication and indigenous African Agriculture", in Jack R. Harlan, Jan M. J. De Wet and Ann B.L. Stemler (eds), Origins of African Plant Domestication, Mouton, Publisher: The Hague, p. 3-19, may be mentioned.
[3] Board on Agriculture of the National Research Council, 1993, Managing Global Genetic Resources, National Academy Press: Washington, D.C., p. 36 point out that this problem was already realized in the first half of the 20th. century.
[4] Meehl, G.A., T. F. Stocker, W. D. Collins, P. Friedingstein, A.T. Gaye, J. M. Gregory, A. Kitoh, R. Knutti, J. M. Murphy, A. Noda, S. C. B. Raper, 1. G. Watterson, A. J. Weaver & Z.-C. Zhao, 2007, "Global climate projections", In Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K. B. Averyt, M. Tignor & H. L. Miller (eds.) Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press: Cambridge, p. 747- 845.
[5] Ibid. , p. 85-116
[6] Tewolde Berhan Gebre Egziabher, 1993, "Modernization, science and technology, and perturbations of traditional conservation of biological diversity". Paper presented at the Biodiversity Convention Conference held Trondheim, Norway, 24-28 May 1993.
[7] Board on Agriculture of the National Research Council, 1993, Op. Cit, p.153-172.
[8] Ibid, p.27 & p. 322.
[9] Fowler, C, & P. Mooney, 1990, in their book Shattering: Food, Politics and the Loss of Genetic Diversity, The University of Arizona Press: Tucson, Arizona, have described in detail how much genetic erosion is occuring in gene banks.
[10] For example, New Scientist, 26 November 2005, has an editorial piece (p.3), and more detail under the title "Wheeze in a pod" (p.5), which report on the work of Australian scientists who developed a transgenic pea with genes from beans at the Common Wealth Scientific and Industrial Research Organization (CSIRO) over 10 years, and abandoned it because the transgenic pea became highly allergenic to mice and would presumably be allergenic also to humans.
[11] For example reference may be made to: Chévre, Anne Marie, Frederique Eber, Alain Baranger & Michel Renard, 1997, "Gene flow from transgenic crops", Nature, vol. 389, p. 924; and Mikkelsen, Thomas R., Bente Andersen & Rikke Bagger Jørgensen, 1996, "The risk of crop transgene spread", Nature, vol. 380, p. 31.
[12] For example, Impatiens tinctoria, a plant that used to be collected from the wilde for cosmetic purposes, is now being planted as a crop under small scale irrigation by many smallholder farmers in the mountain slopes of Southern Tigray because of the growing demand from urban women.
[13] Much has been written on this issue, e.g. Pretty, J.N., 1991, Unwelcome Harvest, Earthscan Publications Ltd.: London, p.17-369.
[14] Board on Agriculture of the National Research Council, 1993, OP. Cit., p. 36-37.
[15] World Resources Institute, United Nations Environment Programme and the World Bank, 1998, 1998-99 World Resources ? A Guide to Global Environment, Oxford University Press: Oxford, p. 157, state that soil is now being eroded globally at a rate of 16 to 300 times more than the rate at which it is being formed. This is not to imply that stopping industrial agriculture would stop soil erosion. However, by making land that is losing both its soil structure and fertility keep producing food well because the crops are regularly given the high external fertilizer inputs that characterize industrial agriculture, awareness of the gravity of the problem is likely to be delayed until virtually all the soil has been eroded.
[16] Brown, L.R., and C. Flavin, 1997, Vital Signs, 1997, World Watch Institute: Washington D.C., p. 42 estimates this loss of land owing to salinization caused by irrigation to be 2 million hectares/year globally.
[17] Pretty, J. N., 1995, Regenerating Agriculture, Earthscan Publications Ltd.: London, p. 126-127 gives the lower estimate of 1.5 million hectares/year being lost from salinization of irrigated land. In either case, the magnitude is frightening.
[18] Board on Agriculture of the National Research Council, Op. Cit, p. 23-25.
[19] Plenderleith, Kristina, 1999, Op. Cit, p. 287-323.
[20] United Nations Development Programme, 2001, Human Development Report 2001, Oxford University Press: New York, p. 35.
[21] Fernandez-Cornejo, J., & W.D. McBride, 2002, Adoption of Bio-engineered Crops, ERS Agricultural Economic Report AER 810, used data collected by USDA surveys to compare yields of genetically modified and non-modified crops and found that, in most cases, the yields from the genetically modified crops were lower. This is not to imply, however, that under industrial agriculture, the lower yielding modified crops are necessarily economically inferior. For example, a herbicide tolerant lower yielding genetically modified crop growing in a large farm could be economically superior since spraying the herbicide can be cheap compared to hand or even mechanical weeding. But industrial agriculture is unsustainable, see section2.
[22] Freese, Bill, Policy Analyst of the Friends of the Earth, in 2002 distributed a 10-page report on this under the title, Manufacturing Drugs and Chemicals in Crops. He states that maize, soybean, tobacco and rice were being used in biopharming. He reports of biopharming field trials in Nebraska, Hawaii, Puerto Rico, Wisconsin, Iowa, Florida, Illinois, Texas, California, Marylan and Indiana.

The Global Movement for Seed Freedom

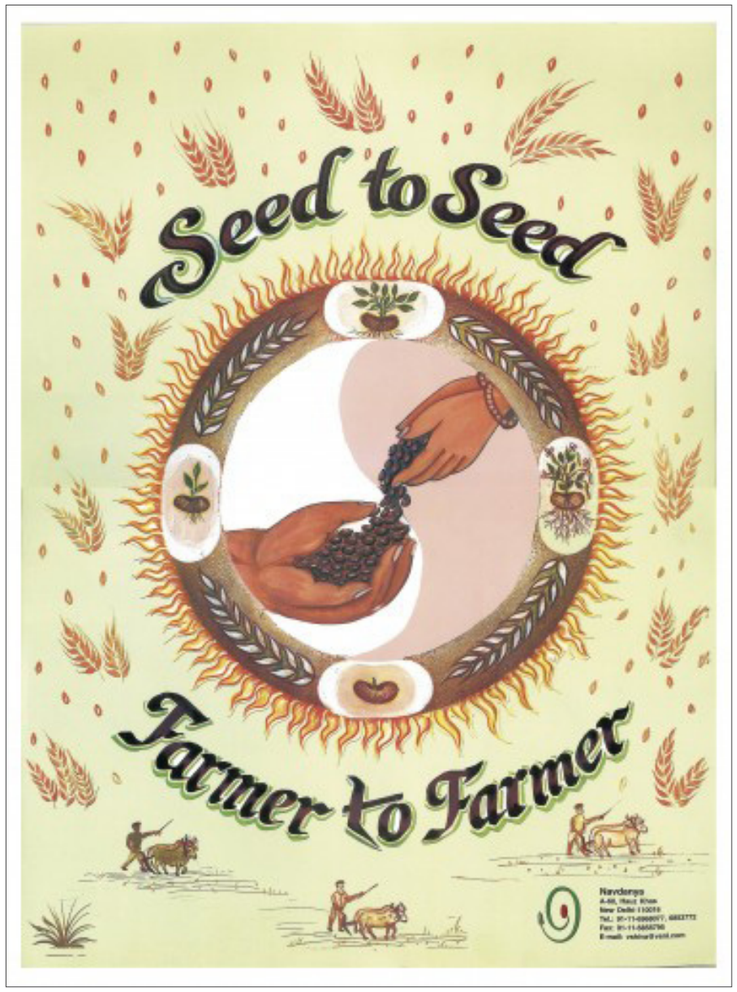
A Global Movement for Seed, Food and Earth Democracy

The core aim of the Seed Freedom Movement is to protect Seeds as a commons, defend seed sovereignty and promote food sovereignty in the context of a deepening Seed Emergency and a Food Crisis.

The Seed Freedom Movement, launched in October 2012, continues to gain ground and has been the catalyst by which movements, organizations and individuals around the world are today taking action everywhere to keep seed free from poisons chemicals, GMOs and patents and to protect farmers rights to save, exchange and sell their seeds.



Source: authenticgrowth.com



GMOs, patents, and Intellectual Property Rights.

We will not allow the imposition of Seed Laws based on Uniformity, that criminalise our diversity and seed freedom. We breed for diversity, quality, resilience-not for chemical monocultures.

Across Diverse Ecosystems and cultures we are united in defending Seed freedom/Seed sovereignty as the foundation of Food Freedom/Food Sovereignty, based on ecological production and fair and just distribution, beginning with protecting and promoting local food systems.

Our diverse seeds, used in agroecological systems produce more food and nutrition per acre and are the real solution to hunger and malnutrition, not GMOs.

Our evolutionary seeds, continuously adapting to climate change, are the real answer for climate adaptation and resilience, not GMOS now packaged as "Climate Smart Agriculture"

With all our love we will protect our seeds.

With centuries of knowledge of our ancestors reinforced by the new sciences of agroecology and epigenetics we will resist the imposition of obsolete and flawed reductionist, mechanistic science, and failed GMO and toxic chemical technologies on our food and agriculture systems.

With our intense commitment, and deep solidarity, we will collectively defend our Seed Freedom, Food Freedom, and Democratic Rights to shape a future of food that protects life on Earth and the well being of all.

Global Movement for Seed Freedom – Our resolve, our commitment

The Global Movement for Seed Freedom is a network of individuals and organisations committed to align our thoughts and actions with the laws of Gaia, Pachamama, Vasundhara, Mother Earth... We protect the biodiversity of the planet by defending of the freedom of the seed to evolve in integrity, self-organisation, and diversity.

We are seed savers and seed defenders, farmers and gardeners, practioners of ecological agriculture and participants in fair trade.

Our right to save and exchange our open pollinated, non GMO, non patented seed is non alienable.

Farmers rights are non negotiable.

We will resist every law and technology that attempts to undermine our freedoms, and the freedom of the seed, which is intimately linked to the freedom of Mother Earth.

We are committed to preventing Monsanto and other chemical corporations which are seeking to control our Seed Supply through

Seed Freedom Campaigns

Call to Action 2014 and ongoing events

The Global Movement for Seed Freedom invited everyone to join people and communities around the globe, from the 20th of September to the 20th of October, to reaffirm our commitment to Seed Freedom, Food Freedom and Earth Democracy.
At this time of global crisis, as our planet faces economic and ecological collapse, we recognize the need to imagine and build alternatives to the current dominant economic and agricultural models.
The 'Call to Act for Seed, Food, and Earth Democracy' 2014 is a powerful global event that will help to make these necessary alternatives a reality. Let us stand together as we reclaim the commons of Seed and Food and as we protect our land sovereignty and cultural heritage.

Read more: *http://seedfreedom.info/campaign/call-to-action-for-seed-food-and-earth-democracy-2014/*

Translated in 10 other languages
Italian, French, German, Spanish, Bulgarian, Greek, Indonesian, Polish, Portuguese (Brazil), Portuguese (Portugal), Slovenian

Source: Navdanya «

Source: Seed Freedom »

Events submitted by individuals and Organisations and published on Seed Freedom Events Calendar.
No. Events 20 Sept. – 20 Oct.
No Events: 157
No. Countries: 31
http://seedfreedom.info/events/categories/call-to-action-20-sept-20-oct-2014/

Promoted through Social Media
https://www.facebook.com/media/set/?set=a.584129855032795.1073741850.238484846263966&type=3

Ongoing Campaign

Events submitted by individuals and Organisations and published on Seed Freedom Events Map/ Calendar. No. Events 2014 (January – December)
No. Events: 298
No Countries: 36

http://seedfreedom.in/seed-freedom-map/

http://seedfreedom.info/events/categories/seed-freedom-actions%E2%80%8F/

Promoted through Social Media
https://www.facebook.com/media/set/?set=a.584129228366191.1073741849.238484846263966&type=3

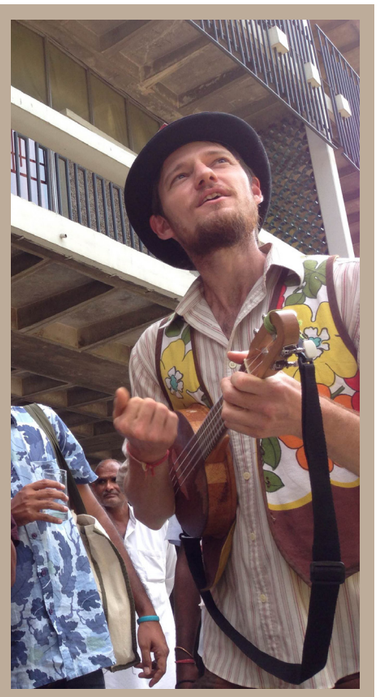
No Gmo Banana Campaign

"First the GMO industry said they would reduce chemical use through Bt-Ht GMOs that were supposed to control pests and weeds. Chemical use increased, and GMO Bt cotton is plagued by pests, herbicide tolerant crops are being overtaken by super weeds. The industry is now trying to save itself with the promise of GMO "super bananas" to deal with Vit A deficiency. As Mantasa's research has shown, the super banana is based on Biopriracy of Vit A rich indigenous bananas. We don't need more false claims of GMOs based on piracy of indigenous biodiversity and knowledge. The GMO banana project based on biopiracy must stop".

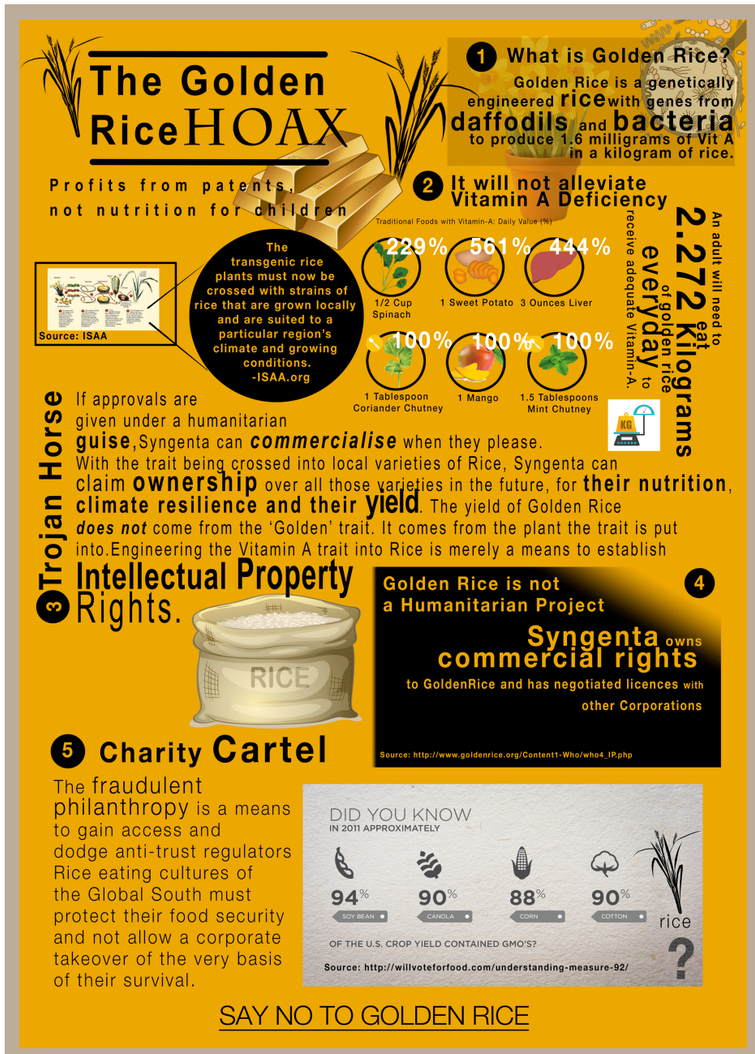
Vandana Shiva

Articles and Photos:
http://seedfreedom.info/campaign/no-gmo-banana-campaign/

Seed Freedom Presents: We Don't Want No Pirate Banana – The Banana Song with Charlie Mgee from the Formidable Vegetable Sound System
http://seedfreedom.info/seed-freedom-presents-we-dont-want-no-pirate-banana/



Source: Seed Freedom



The Golden Rice Hoax

Read more: *http://seedfreedom.info/campaign/the-golden-rice-hoax/*

The PR army promoting Golden Rice is descending on Phillipines, Bangladesh and India.

Sign and share the Declaration for International Women's Day, 8th March, to pre-empt the GMO propaganda: *http://seedfreedom.info/campaign/declaration-for-international-womens-day-8-march-2015/*

Also read:
GOLDEN RICE – MYTH NOT MIRACLE, by Dr Vandana Shiva:
http://seedfreedom.in/golden-rice-myth-not-miracle/

Source: Seed Freedom

Africa

Source: Globaljustice.org.uk

Sorghum - Photo by Janki

Africa - AFSA

Land and seed laws under attack as Africa is groomed for corporate recolonization

Across Africa, laws are being rewritten to open farming up to an agribusiness invasion - displacing the millions of small cultivators that now feed the continent, and replacing them with a new model of profit-oriented agriculture using patented seeds and varieties. The agencies effecting the transformation are legion - but they are all marching to a single drum.
A battle is raging for control of resources in Africa - land, water, seeds, minerals, ores, forests, oil, renewable energy sources. Agriculture is one of the most important theatres of this battle. Governments, corporations, foundations and development agencies are pushing hard to commercialise and industrialise African farming.

Many of the key players are well known. They include the World Bank, the African Development Bank, the United Nations Food and Agriculture Organisation (FAO), the G8, the African Union, the Bill Gates-funded 'Alliance for a Green Revolution in Africa' (AGRA), the International Fund for Agricultural Development (IFAD), and the International Fertiliser Development Centre (IFDC).

Together they are committed to helping agribusiness become the continent's primary food commodity producer. To do this, they are not only pouring money into projects to transform farming operations on the ground - they are also changing African laws to accommodate the agribusiness agenda.

Privatising both land and seeds is essential for the corporate model to flourish in Africa. With regard to agricultural land, this means pushing for the official demarcation, registration and titling of farms. It also means making it possible for foreign investors to lease or own farmland on a long-term basis.

With regard to seeds, it means having governments require that seeds be registered in an official catalogue in order to be traded. It also means introducing intellectual property rights over plant varieties and criminalising farmers who ignore them.
In all cases, the goal is to turn what has long been a commons into something that corporates can control and profit from.

Source: *http://www.theecologist.org/News/news_analysis/2752051/land_and_seed_laws_under_attack_as_africa_is_groomed_for_corporate_recolonization.html*

Lifting the veil of secrecy

This survey aims to provide an overview of just who is pushing for which specific changes in these areas - looking not at the plans and projects, but at the actual texts that will define the new rules.

It was not easy to get information about this. Many phone calls to the World Bank and Millennium Challenge Corporation (MCC) offices went unanswered.
The US Agency for International Development (USAID) brushed us off. Even African Union officials did not want to answer questions from -and be accountable to- African citizens doing this inventory.

This made the task of coming up with an accurate, detailed picture of what is going on quite difficult. We did learn a few things, though. While there is a lot of civil society attention focused on the G8's New Alliance for Food and Nutrition, there are many more actors doing many similar things across Africa. Our limited review makes it clear that the greatest pressure to change land and seed laws comes from Washington DC - home to the World Bank, USAID and the MCC.

'Land reform' is to benefit investors, not farmers

Land certificates - which should be seen as a stepping stone to formal land titles - are being promoted as an appropriate way to 'securitise' poor peoples' rights to land. But how do we define the term 'land securitisation'?

As the objective claimed by most of the initiatives dealt with in this report, it could be understood as strengthening land rights.

Many small food producers might conclude that their historic cultural rights to land - however they may be expressed - will be better recognised, thus protecting them from expropriation.
But for many governments and corporations, it means the creation of Western-type land markets based on formal instruments like titles and leases that can be traded. In fact, many initiatives such as the G8 New Alliance explicitly refer to securitisation of 'investors' rights to land.

So this is not about recording and safeguarding historic or cultural rights, but about creating market mechanisms. So in a world of grossly unequal players, 'security' is shorthand for the power of the market, private property and creditors.

Most of today's initiatives to address land laws, including those emanating from Africa, are overtly designed to accommodate, support and strengthen investments in land and large scale land deals, rather than achieve equity or to recognise longstanding or historical community rights over land at a time of rising conflicts over land and land resources.

Most of the initiatives to change current land laws come from outside Africa. Yes, African structures like the African Union and the Pan-African Parliament are deeply engaged in facilitating changes to legislation in African states, but many people question how 'indigenous' these processes really are.

It is clear that strings are being pulled, by Washington and Europe in particular, in a well orchestrated campaign to alter land governance in Africa.

Seed laws based on neoliberal ideologies

When it comes to seed laws, the picture is reversed. Subregional African bodies - SADC, COMESA, OAPI and the like - are working to create new rules for the exchange and trade of seeds. But the recipes they are applying - seed marketing restrictions and plant variety protection schemes - are borrowed directly from the US and Europe.

And the changes to seed policy being promoted by the G8 New Alliance, the World Bank and others refer to neither farmer-based seed systems nor farmers' rights. They make no effort to strengthen farming systems that are already functioning.

> "This is not about safeguarding historic or cultural rights, but about creating market mechanisms ... 'security' is shorthand for the power of the market, private property and creditors."

Source: African Centre for Biosafety

Rather, the proposed solutions are simplified, but unworkable solutions to complex situations that will not work - though an elite category of farmers may enjoy some small short term benefits.

With seeds, which represent a rich cultural heritage of Africa's local communities, the push to transform them into income-generating private property, and marginalise traditional varieties, is still making more headway on paper than in practice. This is due to many complexities, one of which is the growing awareness of and popular resistance to the seed industry agenda.

But the resolve of those who intend to turn Africa into a new market for global agro-input suppliers is not to be underestimated, and a notable consolidation of seed suppliers under foreign corporate ownership is under way. The path chosen will have profound implications for the capacity of African farmers to adapt to climate change.

Interconnectedness between different initiatives is significant, although these relationships are not always clear for groups on the ground.
Our attempt to show these connections gives a picture of how very narrow agendas are being pushed by a small elite in the service of globalised corporate interests intent on taking over agriculture in Africa.

New Alliance for Food Security and Nutrition

"The 50 million people that the G8 New Alliance for Food Security and Nutrition claims to be lifting out of poverty will only be allowed to escape poverty and hunger if they abandon their traditional rights and practices and buy their life saving seeds every year from the corporations lined up behind the G8", warned Tanzania Organic Agriculture Movement in September 2014.

Launched in 2012 by the G8 industrialised countries - Canada, France, Germany, Italy, Japan, Russia, UK and US - the aim of the gtrandly titled G8 New Alliance for Food Security and Nutrition is in fact to mobilise private capital for investment in African agriculture.

To be accepted into the programme, African governments are required to make important changes to their land and seed policies. The New Alliance prioritises granting national and transnational corporations (TNCs) new forms of access and control to the participating countries' resources, and gives them a seat at the same table as aid donors and recipient governments.

As of July 2014, ten African countries had signed Cooperative Framework Agreements (CFAs) to implement the New Alliance programme: Benin, Burkina Faso, Côte d'Ivoire, Ethiopia, Ghana, Malawi, Mozambique, Nigeria, Senegal and Tanzania.

Under these agreements, these governments committed to 213 policy changes. Some 43 of these changes target land laws, with the overall stated objective of establishing "clear, secure and negotiable rights to land" - tradeable property titles.

The New Alliance also aims to implement both the Voluntary Guidelines (VGs) on 'Responsible Land Tenure' adopted by the Committee on World Food Security in 2012, and the 'Principles for Responsible Agriculture Investment' drawn up by the World Bank, FAO, IFAD and UN Conference on Trade and Development. This is considered especially important since the New Alliance directly facilitates access to farmland in Africa for investors.

New Alliance pushing seed 'reform'

As to seeds, all of the participating states, with the exception of Benin, agreed to adopt plant variety protection laws and rules for marketing seeds that better support the private sector.

Despite the fact that more than 80% of all seed in Africa is still produced and disseminated through 'informal' seed systems (on-farm seed saving and unregulated distribution between farmers), there is no recognition in the New Alliance programme of the importance of farmer-based systems of saving, sharing, exchanging and selling seeds.

African governments are being co-opted into reviewing their seed trade laws and supporting the implementation of Plant Variety Protection (PVP) laws, as has been seen in Ghana where farmers have risen up against the changes.

The strategy is to first harmonise seed trade laws such as border control measures, phytosanitary control, variety release systems and certification standards at the regional level, and then move on to harmonising PVP laws.

The effect is to create larger unified seed markets, in which the types of seeds on offer are restricted to commercially protected varieties. The age old rights of farmers to replant saved seed is curtailed and the marketing of traditional varieties of seed is strictly prohibited.

Concerns have been raised about how this agenda privatises seeds and the potential impacts this could have on small-scale farmers. Farmers will lose control of seeds regulated by a commercial system, while crop biodiversity may be eroded due to the focus on commercial varieties.

Making these processes hard to combat is the mutliplicity of programmes and initiatives carried out by different countries and both national and transnational entities in different parts of Africa, all offering short term benefits to governments but all directed towards a single objective - the neoliberal transformation of land, seed and plant variety governance to open the continent up for full scale agribusiness invasion.

Source: Afsa

The report: 'Land and seed laws under attack: who is pushing changes in Africa?' was drawn up jointly by AFSA and GRAIN. Researched and initially drafted by Mohamed Coulibaly, an independent legal expert in Mali, with support from AFSA members and GRAIN staff, it is meant to serve as a resource for groups and organisations wanting to become more involved in struggles for land and seed justice across Africa or for those who just want to learn more about who is pushing what kind of changes in these areas right now.

AFSA is a pan-African platform comprising networks and farmer organisations championing small African family farming based on agro-ecological and indigenous approaches that sustain food sovereignty and the livelihoods of communities.

GRAIN is a small international organisation that aims to support small farmers and social movements in their struggles for community-controlled and biodiversity-based food systems.

This article is based on the above report.

AFSA
ALLIANCE FOR FOOD SOVEREIGNTY IN AFRICA

Land outside Maputo, Mozambique.
Source: National Geographic »

Source: Senegal-vegetables-market politicsofpoverty.oxfamamerica.org »

Ghana – Food Sovereignty Ghana

Introduction

This report covers the major landmarks of our movement since its inception, almost two years ago. Food Sovereignty Ghana is a grass-roots movement of Ghanaians, home and abroad, dedicated to the promotion of food sovereignty in Ghana. Our group believes in the collective control over our collective resources, rather than the control of our resources by multinational corporations and other foreign entities.

Source: Food Sovereignty Ghana

This movement is a product of Special Brainstorming Session meeting on the 21st of March 2013, at the Accra Freedom Centre. The meeting was in response to several months of calls by individuals, led particularly by the Pan-Africanist International, who have been publishing, discussing, writing, blogging or tweeting, about the increasing phenomenon of land grabs, the right to water and sanitation as a fundamental human right, water privatization issues, deforestation, climate change, carbon trading and Africa's atmospheric space, and in particular, the urgent issue of the introduction of GM food technology into our agriculture, particularly, its implications on food sovereignty, sustainable development, biodiversity, and the integrity of our food and water resources, human and animal health, and our very existence as a politically independent people. These calls insisted that these issues need to be comprehensively addressed in a systematic and an organized manner.

Press Releases

Apart from organisational tasks such as defining our aims and objectives, rules and regulations, election of officers, membership drive, building our website, etc., our initial activities were centred around press releases such as our "Statement Calling For Moratorium On GM Crop Cultivation In Ghana", which triggered an immediate invitation to the US Embassy in Accra for a CLOSED DOOR "Roundtable Discussion and an Interdisciplinary Presentation on biotechnology at the US Embassy on July 10".

After a careful deliberation we decided to turn down the invitation because it did nothing to "advance our cause for a public debate on the issue".
We also took the decision to publicly advice that the US Embassy Must Be Open And Transparent On GMO Debate In Ghana.

Our press releases were mainly commentaries on biotechnology events and critiques of the activities of the pro-GM lobby in Ghana, such as "The 6th Africa Agricultural Week Is Not About Science".

For a complete view of our Press Releases and Statements, please see: *http://foodsovereigntyghana.org/category/press-releases-and-statements/.*

Our statements have been published regularly in Sustainable Pulse, Pambazuka, the Ecologist, and Seed Freedom Newsletters.

The plant breeders' bill aka "MONSANTO LAW"

Our campaign against the Plant Breeders' Bill has been the major preoccupation of our movement since it came into being. We took this campaign seriously because of the track record of Parliament and the bi-partisan accord when it comes to Bills from the pro-GMO lobby. For example, the Biosafety Act of 2011, was voted into an Act of Parliament by a unanimous vote! Our campaign was basically energized by the very evil nature of the Bill: it was so bad that we could not take "NO" for an answer. After issueing a few statements against Ghana's joing UPOV, such as President Mahama, Don't Join UPOV 91, and Parliament Must Reject UPOV 91!

We finally petitioned the Parliament which led to our meeting with the Parliamentary Committee on Constitutional, Legal and Parliamentary Affairs, on Wednesday, 4th December, 2013. We find this Bill particularly obnoxious, in that, it makes the rights of farmers subject to the discretion of the Minister of Agriculture, whilst the rights of foreign corporate plant breeders are put above the laws of Ghana! An area where we strongly disagree is why the government opted for UPOV 91 in the first place. The Bill is presented, first and foremost as being in fulfilment of the requirements of UPOV 91, which incidentally is also in conformity with the WTO rules. Meanwhile, Ghana can fulfil our WTO obligations without UPOV. As explained in a petition signed by 51 international NGOs to the Parliament, we do not need UPOV. It is a very restrictive and dangerous trap into a permanent enslavement and loss of our sovereignty as a people.

This is what is staring at us in the face. Our destiny as a people is involved in which decision our Members of Parliament make.
As a result of a series of protestations by our local partners in this campaign and intense public interest that this generated, Parliament finally beat a retreat on Plant Breeders' Bill!

The move to impose the UPOV-compliant Plant Breeders' Bill on Ghanaians suffered a major set-back on Tuesday, November 11, 2014.

This was a significant victory given the level of push back our campaign received from the MPs and the entire apparatus of state of the Mahama Administration. This does not mean the end of the story. The real struggle for a sensible law now begins. For example, the proposed amendments to the Plant Breeders' Bill come directly from UPOV.

Protest and marches

For the first time, Ghana joined in the March Against Monsanto on Saturday, October 12, 2013, which took place around the world. The protesters rallied against the company's use of genetically modified organisms and tried to raise awareness about its corporate practices.

At the first march, only one African country participated: South Africa.

This time around, already in the second march, there are seven African countries participating, amongst them, South Africa, Nairobi and Accra. Again, on May 24, 2014, as millions of people around the globe demonstrated to call for a permanent end to the use of genetically modified organisms and other harmful agrochemicals used by "Big Agriculture" companies such as Monsanto.

FSG led the Ghana front. The protests were held in more than 400 cities in more than 52 countries on six different continents. The march started from the Obra Spot at the Kwame Nkrumah Circle through the Nsawam Road and ended at the Mallam Atta Market.
The march was so successful and drew interest both locally and internationally to such an extent that FSG Chairperson was interviewed by Ms. Abby Martin on Breaking The Set, RT's flagship, award-winning English-language channel which airs 24/7 from the network's Moscow offices, beamed across six continents, and is available to more than 700 million viewers worldwide.

Workshops, Symposia, and public lectures

On 28th February, 2014, Food Sovereignty Ghana organized a capacity building and skills sharing workshop on 27th-28th February to discuss the Biosafety Law, the Plant Breeders bill and the Plant and Fertilizer Act (seed law) in collaboration with the African Centre for Biosafety (ACB) and the Third World Network (TWN), and under the sponsorship of the Bread for the World.
Civil society organizations, smallholder farmers, the media, scientists and concerned members of the public attended the meeting.
Again 9-10 June, 2013, we hosted Dr. Vandana Shiva as part of a three-nation tour in Africa of which we are most fortunate to be included.

Source: Food Sovereignty Ghana

The highlights of the visit included a Press Conference in the morning of Monday, 9th June, at the International Press Centre, Accra, which was followed up with a Public Forum at the Paloma Hotel, Accra. Her two-day visit also included radio and television interviews and meetings with representatives of civil society organisations and farmers' groups. Food Sovereignty Ghana has also had cause to reject participation in certain symposia and to denounce them publicly, such as the symposium on Wednesday, 10th December, 2014 at CLOSSAG Conference Room (Ministries) in Accra. The symposium was organized by the CSIR-Science and Technology Policy Research Institute (STEPRI), under the Development Research Uptake in Sub-Saharan Africa (DRUSSA) was described as being organised by GMO Peddlers – Fake Debates and Staged Symposia!

Legal action against the biosafety committee

As at the time of writing this report, a case filed by Food Sovereignty Ghana, against the National Biosafety Committee, NBC, as the first defendant, and the Ministry of Food And Agriculture, MoFA, has been scheduled to be heard at the Human Right Division of the Fast Track High Court, on Tuesday, 3rd of March, 2015, at 9.00am.

It is the second time the case is being called. The case was first heard on the 17th of February, and adjourned to the 3rd of March, to enable the defendants to put in their statement of case.

This is clearly a landmark case regarding the future of genetically modified organisms, GMOS, in Ghana.

FSG shall be represented in court by Mr. George Tetteh Wayo, whilst the Attorney-General is representing the defendants.

For more information on the case, please see our PRESS RELEASE: FSG Sues Government Over GM Rice and Beans | Food Sovereignty Ghana: *http://foodsovereigntyghana.org/fsg-sues-government-over-gm-rice-and-beans/*

Some of our members supporters, friends and Lawyer Wayo Tetteh at the High Court Accra. on the first day in court, 17th February, 2015

Hands with seeds - Source: AFSA

Tanzania – Singo Saidi

Seed sovereignty status in Tanzania

We are told that Tanzania has an abundance of available fertile land, but that production is inefficient, based on many small farms, and needs modernization through private sector investment in large scale high-input agriculture.

Critics maintain that Africa is seen as the world's last frontier for corporate market penetration, with a focus on land and water, food and bio-fuels. The recent investment wave must be understood in the context of a global food system dominated by large corporations in input supply (seed and agrochemicals), processing, storage, trading and retail.

African governments, desperate for some financial relief, are willing to make whatever changes are necessary to bring the G8 New Alliance capital into their countries (Tanzania is a prominent member of the alliance). The multinationals are setting the terms, with favourable seed laws, access to land, free trade and intellectual property rights as the preconditions for investment.
Farmers' seed sovereignty is under threat from changes to national legislation. Recently, Tanzania adopted a UPOV 1991-compliant Plant Breeders Rights Act (2012) which is designed to protect the interests and intellectual property rights of large scale commercial seed companies (e.g. Monsanto, Syngenta etc.) who are keen to penetrate the African market with hybrid and GM seeds, supported by leading governments under the G8 New Alliance for Food Security and Nutrition. The changes criminalize (for PBR protected varieties) the traditional farmers' practice of breeding, saving, and exchanging seeds. With the new PBR in place, Tanzania is about to become the very first Least Developed Country (LDC) in the World to join UPOV91.

Similarly the Seeds Act 2004 is currently being revised to align with the UPOV91 complaint PBR, and will continue to disadvantage the 'informal' farmer-saved seed system by criminalizing any sale of non-certified seed. Government lawyers claim to be in the process of 'domesticating' the ITPGRFA (International Treaty of Plant Genetic Resources for Food and Agriculture)– which theoretically would strengthen farmers' seed rights – but we see no supporting evidence.
A recent CSO / Government dialogue meeting in Dar es Salaam (Sep 2014) clarified that:

- The Government decision to join UPOV and to establish a framework of UPOV 91 compliant legislation is a "done deal" and advocacy through CSO dialogue with Tanzanian Government to halt, reverse or modify it will be rejected.
- Government sees the new laws as solely focusing on the commercial seed sector, and denies they will have any impact on smallholder farmers.
- Government is gradually ceding control of the commercial seed system to the private sector.
- The Quality Declared Seed (QDS) system – the only way whereby smallholder farmers can legally produce certified seed for sale, and then only in their locality – is being wound down under pressure from the commercial seed industry.
- There is no Government recognition of the value of indigenous seeds (referred to by a government lawyer as 'sub-standard seeds') and no legal protection of the farmer managed seed system.
- The government is acting so slowly to fulfill its promise to domesticate the Seed Treaty (ITPGRFA) – which in principle would give famers some legal rights over indigenous varieties, including benefit sharing if used commercially.

Meanwhile over 80% of Tanzania's 4.8 million small-farming families continue to source their seeds from the farmer managed seed system. Some, a few, are using the QDS system to produce certified seeds, maintaining and sharing their local varieties, or multiplying improved open pollinated varieties (OPV seeds). But most farmers rely on seeds saved from last year, either by themselves, or exchanged with neighbouring farmers.

Yet seed banks are rare, reflecting government extension service advice towards commercial and hybrid seeds.

Source: TABIO

TOAM and TABIO are working hard to address the challenges of seed sovereignty as follow:

1. In June 2014, the two organizations in collaboration with Alliance for Food Sovereignty in Africa (AFSA) organized a one-day event to mark the beginning of celebrating the International Year of Family Farming. This event invited Dr. Vandana Shiva of which issues around seed sovereignty were highly discussed.

2. Carrying out advocacy against changing laws that undermine seed sovereignty in the country. In so doing, TOAM in collaboration with African Center for Biosafety conducted a study on the impact of changing seed-related laws on farmer managed seed systems in Tanzania. The study findings were presented during a stakeholders workshop which recommended for putting up laws that recognize farmers varieties.

3. Working with smallholder farmers in different parts of the county in promoting multiplication and use of local seeds in agriculture. This is because continue loss of local seeds is having a devastating impacts on farming communitiesby reducing the scope of seeds available for planting.

4. Carryout intensive awareness creation on GMOs and also call for decision and policy makers to reject the proposal to weaken strict liability.

Conclusions

Promoting seed sovereignty is of paramount important for smallholder farmers in Tanzania. With seed sovereignty, farmers have rights to save, breed and exchange seeds. It enables them to be free from patented, genetically modified which are owned and controlled by the multinational seed companies.

Source: TABIO

Zimbabwe – ZIMSOFF (Zimbabwe Smallholders Organic Farmers Forum)

ZIMSOFF: Strengthening community-based seed systems in Zimbabwe

Seed is the foundation of life, for without seed, there is no food and without food, life ceases. Every plant starts as seed. In Zimbabwe, over a million smallholder farming households rely on agriculture for their livelihoods. They grow diverse food crops: cereals (maize is the main staple food crop followed by small grains – sorghum, pearl millet and finger millet), pulses (a variety of legumes including cowpeas, beans, groundnuts, round nuts etc.) and vegetables (leaf, fruit, root, bulb and tuber). Most smallholders purchase mainly maize seed from seed companies dominated by SeedCo, Pioneer, Cargill and Pannar. A few smallholder farmers save and use traditional and open pollinated varieties (OPVs) of maize. The pulses and small grains are dominated by traditional farmer saved seeds. Thus, very few seed companies supply such seeds.

Zimbabwe, despite shortages between 2003 and 2010, produces adequate maize seed for domestic and export markets. However, the domestic market particularly the smallholders have been affected by price hikes both of seeds and fertilisers. Seed companies have been increasing the price of the maize seed citing increased costs of producing hybrids. In 2014, a 25kg bag of maize seed increased between $68.00 and $113.00, up from $57.00 and $96.00; while a 10 kg bag costs between $27.50 and $31.00, up from $21.00 and $24.00. Most smallholder farmers failed to buy sufficient seed and could lead to food insecurity.
The delayed payment for grain delivered by farmers to Grain Marketing Board due to lack of funds worsened the situation.
However, not all farmers are affected by price hikes. There exist isolated but significant groups of smallholder farmers who use Indigenous Knowledge Systems (IKS) to save seed of various crops. Zimbabwe Smallholder Organic Farmers' Forum (ZIMSOFF), member of La Via campesina, is one such group of farmers fighting to reclaim and use traditional seeds, and break dependence on commercial seeds. ZIMSOFF farmers grow a wide range of traditional seed varieties and Open Pollinated Varieties (OPVs) (maize, sorghum, millets, groundnuts, vegetables and other pulses). Such practices preserve their culture and ensure food sovereignty and strengthen their communities.

Source: reallygoodwriter.com

What are the threats to farmer seed sovereignty

Today threats to such practices loom on the horizon. A multi-pronged tactic by big seed and agro-chemical companies has been prepared and unleashed to rid the few remaining places of traditional seed varieties and the knowledge to preserve seed, including free exchange. Tactic includes seed patents (intellectual property rights-IPRs), criminalization of farmers' seed preservation and exchange, marketing of transgenic seeds (GMOs) and institutionalization of pro-UPOV policies in Southern African Development Community (SADC) and Common Markets for Eastern and Southern Africa (COMESA). The ultimate goal is to make all farmers dependent on toxic agro-inputs such as inorganic fertilizers, pesticides and technologies that suffocate both agro-diversity, and soil and nature biodiversity. The farmers' seeds maintain genetic diversity and ensure consumption of healthy, cultural appropriate foods.

Regional seed policies: SADC and COMESA

Efforts are underway at regional economic and political blocs, the SADC and COMESA, to introduce harmonized seed policies likely to impact on farmers' seeds negatively. The COMESA seed protocol seeks to open national borders through easing market and regulatory requirements on registered commercial seeds. This removes the hurdles to movement of registered seed within the regional countries at the ports of entry which affected timely delivery of seeds to recipient countries. The governments therefore proposed to harmonize seed marketing policies as a quick solution to expedite the export and import of seed. In general, this will flood both the regional and local markets with hybrid and genetic modified (GM) seeds and thus push out traditional seeds. The SADC seed harmonisation policy seeks to promote the "commercial breeders' rights" through Plant Variety Protection (PVP) based on "DUS" (Distinctiveness, Uniformity, Stability).
This favours commercial breeders and criminalize smallholder farmer seed saving and exchange.

Corporate takeover through investment/shareholding

Most seed companies in Zimbabwe are subsidiary of large transnational agribusiness corporations such Pionner, Pannar etc. These entered the local seed market during the Economic Structural Adjustment Programme (ESAP) in 1990s when economy and trade was liberalised. Recently, Limagrain, increased its shareholding through its subsidiary Vilmorin & Cie in the local seed company, SeedCo. Vilmorin, a French seed maker is expected to double its stake in SeedCo to 32%. South African seed companies such as AgriSeeds are also gaining market share.

Seed company dominance: seed infrastructure, high registration fees and policy bias

In Zimbabwe, seed companies dominate the commercial seed supply market because they have the requisite seed production and testing infrastructure and are also able to pay the high registration fees. These requirements are prohibitive to entry of smallholder farmers. At the moment there are registered 43 Plant Breeders in Zimbabwe. The existing national legislation caters for these registered breeders. No policy exists for smallholder farmers despite being breeders too; few amendments to existing policy were done to include smallholders after their outcry. The smallholders have no access to these policies in local languages. This affects their participation in the processes.

Varieties of traditional and open pollinated crops farmers save and grow

GMO processed foods and food aid

GMO processed foods from South Africa are slowing flooding the local markets. The opening up of local markets set the stage for their wider acceptance and lobbying by some for the government to allow GMO seeds is gaining ground. At the moment, the Government of Zimbabwe does not allow import of unprocessed GMO materials.

Zimsoff initiatives for seed conservation, freedom and reclaimation.

Strengthening the campaign for seed sovereignty

Zimbabwe Small Organic Farmers Forum is working with likeminded organisation such as Community Technology Development Organisation (CTDO), Participatory Ecological Land Use Management (PELUM Zimbabwe), Towards Sustainable Resources Use Organization (TSURO Trust) and Chikukwa Ecological Land Use Community Trust (CELLUCT) and other farmers' organisations to create a partnership that responds to contextual factors on seed. This collaboration on seed is the first of its kind. It envisions seed sovereignty farming communities improving and sustaining their livelihoods through protecting and promoting the smallholder farmers' rights and ability to produce, trade and save a wide diversity of open pollinated and traditional seed of high quality. It also seeks to design a multi-year collaborative and strategic programme to promote farmer saved seeds and share seed knowledge by holding seed fairs locally and nationally; conduct research to document farmers' seed initiatives and strengthen Community Based Seed System; and increase understanding of Seed Policy and raise awareness.

By allowing our smallholder farmers to practice the age old seed preservation, growing and exchange, ZIMSOFF fosters seed variety diversity, as well as a greater within variety genetic diversity. This enables the smallholder farmers more adaptable to changing conditions than homogenous commercial agriculture.

Guarding against erosion of seed diversity through dialogues, advocacy and campaigns

ZIMSOFF has over the years organized several meetings to issues affecting seed sovereignty at farmer level. Various stakeholders including government officials, Seed Services Zimbabwe, social movements and activists have participated in these meetings. Such efforts have recently received support from the African Centre for Biosafety (ACB) and Third World network (TWN), organisations working against transgenic seeds and the new regional (COMESA and SADC) seed policies. Smallholder farmers have built the capacity to understand and defend their seed rights nationally. In one the meeting held in Harare on the 2nd and 3rd of June the ZIMSOFF farmers, agreed to take the following actions and positions:

- To scale up networking and participation in dialogues on seed issues; and that ZIMSOFF should seek space in the panels that have been created in the region to discuss seed issues. The organization should also continue to strengthen the smallholder farmers to defend their rights against the new systems which threaten farmers' rights to save and exchange their indigenous seeds.
- To reject certification of seed, which it is too expensive and smallholder farmers cannot afford. Moreover, to reject the whole process because it is top down and its ownership is not clear.
- To engage with and lobby the government to recognize agro-ecology and peasant seed production systems and protect them from competition from big companies.
- Push the government to consult smallholder farmers before signing these policies.
- However, the government official indicated that the country has the most stringent conditions on registering seed companies. He also added that member States have room to deny entry any genetic material on ecological and environmental grounds.

ZIMSOFF farmers are also participating in regional and international fora on seed issues. Such spaces provide a platform to learn and exchange key information on experiences with other farmers, thereby building solidarity among their organization and foster collective action.
At regional and continent level, ZIMSOFF works with Eastern and Southern Africa Farmers' Forum (ESAFF), Alliance for Food Sovereignty in Africa (AFSA), the People's Dialogue, Rural Women Assembly (RWA).

Photo by Janet Maro

Through these networks, ZIMSOFF has been pushing the seed agenda at political spaces such the annual SADC Head of States Summit. ZIMSOFF is building and strengthening its regional network to fight against proposed regional seed laws. During a meeting with the Zimbabwean government, ZIMSOFF, AFSA, allied organisations and Dr Vandana Shiva lobbied for a ban on GMOs, and called for the support for indigenous seeds. Some members of ZIMSOFF have participated in seed and knowledge initiative exchange visits held in Zimbabwe and South Africa (Limpopo and KwaZulu Natal Provinces) and Italy (Rome); some of its members attended importance seed deliberations at Africa Union level in Ethiopia. In September 2014, ZIMSOFF held several local seed and food fairs followed by a national food festival held in Harare in which also government representatives participated.

At the international levels, ZIMSOFF is working with La Via Campesina to fight for farmer saved seeds and exchange and against Transnational Corporation (TNC) control of seeds. On the 17th April, the International Day of Peasant Struggles, La Via Campesina successfully organized and mobilized actions across the globe to highlight our struggle to defend peasant seeds. At the meeting of the parties to the Convention on Biodiversity (CBD), in a landmark decision, governments agreed to regulate synthetic biology.

Building a firm foundation for seed sovereignty through seed sharing and exchange

In an effort to build seed sovereignty, some ZIMSOFF farmers visited and gathered from different parts of Zimbabwe traditional seeds and open polluted varieties. Mr Mpofu and his wife Elizabeth Mpofu, the General Coordinator of La Via Campesina, keep and multiply a wide variety of seeds collected from different areas through exchange and sharing with other farmers. They have over 15 different seed varieties of maize, sorghum, millets, beans, round nuts, ground nuts, cowpeas, pumpkins, melons and many other traditional crops. Most seed varieties have been shared with other farmers within ZIMSOFF. The Agroecology School at Shashe produces seeds for most local vegetables they grow, a practice learnt from other farmers through horizontal exchange of knowledge.

ZIMSOFF has been urging its members to create seed banks, market traditional seeds and promote the consumption of indigenous vegetables and crops, which conventional research has ignored, within their communities.

It is now widely acknowledged that a smallholder-based, agro-ecological food production system is the best way to eradicate hunger and reduce the impact of agriculture on climate change, less attention is given to the role farmers' play in sharing the lessons they have learned. Building on a farmer-to-farmer approach, the ZIMSOFF is interested in training community facilitators and trainers, helping them develop a horizontal and participatory learning system.

Growing for own consumption adequate and culturally appropriate food crops

ZIMSOFF campaigns for farmer saved seeds in a number of ways including promoting the consumption of adequate and culturally appropriate food. Besides growing over 10 different crop varieties (maize, sorghum, millets, round nuts, ground nuts, cowpeas, beans, sunflower, pumpkins, melons, most farmer households at ZIMSOFF's Shashe Smallholder farmer organisation (SFO) in Masvingo have small kitchen gardens, located very close to their homesteads, where they grow vegetables such as covo, cabbage, rape, onions and tomatoes for own consumption. According to Mrs Mudzingwa, the small farmers are at the forefront of ensuring household food security by growing different types of small grains which give meaningful yields even during droughts. Sorghum, pearl and finger millet, and groundnuts are easy to grow and require less manure. Again, these crops, unlike maize, can easily be processed into meal mealie using a grinding stone.

Source: worldagroforestry.org

Seed Freedom in Africa

Vandana Shiva supports AFSA

Seed Freedom, GMOs and Seed Laws in Africa – June 2014

The Seed Freedom Campaign through Vandana Shiva was invited for a special address for the African Food Sovereignty Network in August 2013 to establish links between seed sovereignty and food sovereignty and share successful strategies with the African network that the Seed Freedom campaign has built. In the wake of threats against Africa's knowledge systems and diversity by corporate and genetically modified seeds, AFSA invited Dr. Vandana Shiva and The Seed Freedom Movement to come together and help build a strong defense against these laws and Green Revolution on Africa. The Seed Freedom Africa tour included Conferences and Movement-building actions to strengthen movements for Seed and Food Sovereignty in South Africa, Ghana, Tanzania and Zimbabwe in June 2014.

The Seed Freedom movement is working closely with African networks on strategies, advocacy and campaign to resist the African Regional Seed laws such as ARIPO PVP Harmonized law, SADC PVP Harmonized Law, COMESA Seed Laws.

Key Outcomes

1. The African mobilization tour of Zimbabwe, Tanzania, Ghana and South Africa has led to a strong movement against GMOs and harmonization of seed laws. Pabia Isaac from Food Sovereignty Ghana communicated that the public meetings by Vandana Shiva and seed freedom campaigns ignited public discussion on plant breeders bill in Ghana and led to movements joining hands to resist unjust laws that threaten their seed sovereignty. Saidi Singo from Tanzania said that thanks to the seed freedom tour, we clearly understand the links between seed sovereignty, food sovereignty, agro ecology and climate change. The visit in Tanzania helped highlight and bring into public discourse that it is agro ecological farming that provides the solutions to climate change and hunger.

Source: NewsAfrican

2. As a direct outcome, key representatives from farmers' organizations from Tanzania, Ghana and Zimbabwe were chosen to spend one month in India to learn agro-ecological farming, seed saving, participatory breeding and replicate these in their communities in their respective countries.

3. Representatives movements from Tanzania, Ghana and Zimbabwe also visited Navdanya for the Seed Freedom Strategy meeting in September 2014. An intensive joint campaign has been planned against GMO Banana piracy with key African countries such as Uganda and the African Food Sovereignty Network.

Vandana Shiva in Tanzania – A physicist who put a human face on agriculture: *http://seedfreedom.in/tanzania-dr-vandana-shiva-physicist-who-has-put-a-human-face-on-agriculture/*

Vandana Shiva supports AFSA in making the case for Agro-ecology: *http://www.greenpeace.org/africa/en/News/Blog/making-the-case-for-ecological-farming/blog/49615/*

VIDEOS - Vandana Shiva in Ghana: *http://foodsovereigntyghana.org/video-dr-vandana-shiva-in-accra-1-public-forum/*

Ghana's Farmers battle 'Monsanto Law' to retain their Seed Freedom: *http://seedfreedom.info/ghanas-farmers-battle-monsanto-law-to-retain-seed-freedom/*

Ghana: Atikpo Flails Away, Never Lands A Blow On Shiva *http://seedfreedom.in/ghana-atikpo-flails-away-never-lands-a-blow-on-shiva/*

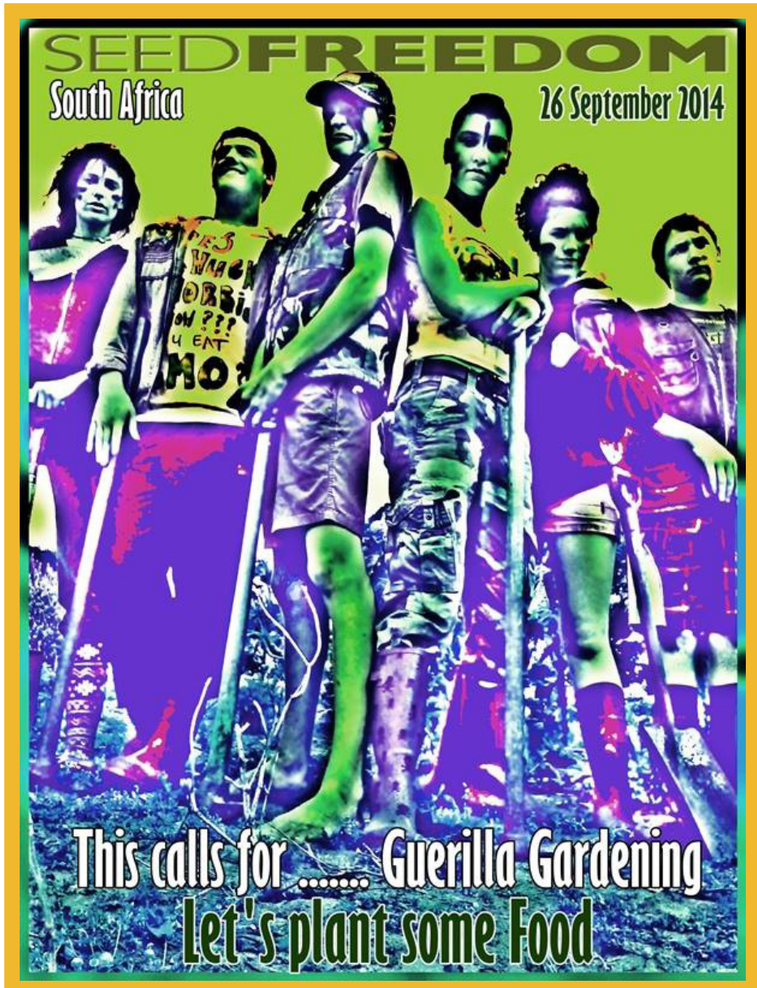
Women hand-sorting seeds
Source: TASAI

PORTO NOVO, BENIN:

Let's reclaim the value of our ancestral seeds / Retrouvons nos valeures semencieres ancestrales – Call to Action 2014:

http://seedfreedom.in/events/retrouvons-nos-valeures-semencieres-ancestrales/

Source: Association des Jeunes Environnementalistes pour un Developpement Durable



PORT ELISABETH, EASTERN CAPE, SOUTH AFRICA:

Guerrilla gardening for Seed Freedom, with Non GMO food Port Elizabeth – Call to Action 2014:

http://seedfreedom.in/events/guerilla-gardening/

WATCH VIDEO:
http://youtu.be/ESBtDcIyyRk

Some teens from South Africa take a stand against GMO seed Giants, Monsanto and FOR the Seed Freedom movement

Source: Non GMO Port Elizabeth

DURBAN, SOUTH AFRICA:

Morningside Peace Garden get-together & Community Seed Swap, with Citi-Zen Gardens – Call to Action 2014:

http://seedfreedom.in/events/morningside-peace-garden-get-together-community-seed-swap/

Source: Citi-Zen Garden

Asia - Pacific

India – Navdanya

Corporate fiction

by Dr. Vandana Shiva –
The Asian Age, 6 january 2014
Source: *http://seedfreedom.info/corporate-fiction/*

As the New Year begins, I feel compelled to reflect on how fictions and abstract constructions are ruling us; the nature of being and existence is being redefined in such fundamental ways that life itself is threatened. When corporations that were designed as legal constructs claim "personhood", then real people who stand in line at polling booths, eke out livelihoods, and raise families lose their rights. This has happened recently in Vermont and Maui. Residents of Maui County, Hawaii voted on November 4 to ban the growing of genetically modified crops on the islands of Maui, Lanai, and Molokai until scientific studies are conducted on their safety and benefits. Monsanto and Dow Chemical's unit Mycogen Seeds have sued the county in federal court to stop the law passed by the people. And Vermont, which passed a GMO labelling law through a legal, democratic process, is being sued by a conglomerate of corporations on the false premise of corporate personhood, and the influence of money as corporate "free speech".

This is at the heart of new free trade treaties based on "investor rights". Denying citizens the right to know violates the fundamental principles of food democracy. Dow and Monsanto sued Maui, thus subverting the democratic process that rests on the will of people, not on the power of corporations. This corporate jurisprudence needs to be reversed if human rights and the rights of Mother Earth are to be protected.

Corporate fictions that have already had disastrous impacts on the biodiversity of the planet, nations and on farmers whose time immemorial rights to save and exchange seeds are being criminalised under patent law and new seed laws.

When biotechnology corporations claim to have "invented" the seed and courts and governments uphold this fiction, millions of years of evolution and thousands of years of agricultural history gets erased.

Seeds are not automobiles or circuit boards; life cannot be manufactured. It is not an invention. It is not engineered, piece-by-piece, by a worker on an assembly line. Living organisms are self-organised complexity. Chilean scientists Maturana and Varela differentiated between two kinds of systems autopoietic and allopoietic. Autopoietic systems are self-organised and make themselves. Allopoietic systems are put together externally.

A seed is an autopoietic system constantly self-organising, evolving and adapting to changing contexts. To claim that by adding one gene a corporation creates the seed and all future generations of that seed is an ontological flaw, a scientific outrage and an ethical violation.

India's laws have a clear articulation that biological and living systems are not inventions. Article 3(d) of India's patent laws states clearly that the discovery of a new property or a new use of a known substance is not an invention.

When corporations claim ownership of a seed that contains a gene from a Bt-bacteria, it is, in fact, a new use of a known substance. When they introduce the gene into a plant by "shooting" the gene through a gene gun into the cell of a plant, the reproduction of the cells and the life cycle of the plant is a biological process. The biotech industry is not assembling the organism, nor are they assembling future generations of seeds.

Section 3(j) of Indian Patent Act is a legal interpretation of the scientific principle of the self-organisation of life. That is why the Appellate Board of the Indian Patent Office ruled in the case of Monsanto's climate resilience patent application: "the claimed method is considered as a series of generic steps modified by the plant cell... In the case like the present which does not involve a simple leap from prior art to the invention but rather entails a journey with many generic method steps that are essentially biological taken in sequence and we have found the invention is not involving inventive step, mere fact of human intervention would not change the position as we have otherwise found it not patentable in view of obviousness and new use of known substance."

While the Indian law recognises that seeds make themselves, including future generations of transgenic seed, which have a gene introduced from an unrelated organism, the American laws treat the transgenic seed as a "machine" invented by corporations. This position of seeds as machines and corporations as inventors was elaborated in the US Supreme Court case of Bowman vs Monsanto. Bowman had bought mixed soyabean seeds from a grain elevator and planted them. Monsanto claimed that the seed being planted to get a crop was not the natural reproduction of a seed sprouting into a plant, which then produced the next generation of seed. The US Supreme Court upheld Monsanto's claim that the reproduction of the plants in Bowman's fields was a "replication of a machine" invented and patented by Monsanto.

From the very beginning, Monsanto's push for GMO seeds has been for claiming creation and ownership of seed.

India's Protection of Plant Varieties and Farmers' Rights Act, 2001, has a clause on farmers' rights, which states, "a farmer shall be deemed to be entitled to save, use, sow, re-sow, exchange, share or sell his farm produce including seed of a variety protected under this act in the same manner as he was entitled before the coming into force of this act."

The US would like to force India to adopt a false science and laws that dictate that seeds have been created by Monsanto and are therefore Monsanto's property.

US President Barack Obama will be the chief guest at our Republic Day celebrations. It is time to start a planetary dialogue and a civilisational exchange based on us all being part of the Earth family; and based on our inalienable right to Swaraj, including "bija swaraj (seed democracy).

We hope Mr Obama's visit will enhance and deepen the common freedoms of the people of India and the US, and not just the freedoms of corporations, which are undermining the freedoms of citizens in both countries and across the world.

The writer is the executive director of the Navdanya Trust.

Photo by Manlio Masucci

Source: Navdanya

25 years of Bija Swaraj (Seed Freedom) – Navdanya

Patents on life and the new biotechnologies are today's tools of imperialism, and they are a core part of the global "constitution" called the WTO (World Trade Organisation) rules of free trade in the form of Trade Related Intellectual Property Rights (TRIPs). The phrase "Trade Related" had to be forcefully linked to intellectual property precisely because intellectual property has no place in a trade treaty and patents should not have been extended to cover life forms as they were under Act 27.3(b) of TRIPS which forces countries to patent life forms, in particular micro-organisms and genetically engineered plants and animals. These rules and laws were made by and for corporations. As a Monsanto spokesperson stated about the drafting of TRIPs "we were the patient, the diagnostician, the physician".

Patents of life are a total control system. They allow corporations to claim ownership over life forms – micro-organisms, plants, animals. They allow corporations to define the acts of saving and sharing seeds as "intellectual property crimes". And they allow the crime of biopiracy – the theft of traditional knowledge and biopiracy to be treated as a right. A patent is an exclusive right to own, make, sell, produce, use a patented product.

A patent on seed implies that a farmer saving seed is an "intellectual property thief". But it means more. A system in which seed has become a corporate monopoly, a system in which a few companies control the seed supply is in effect a system of slavery for farmers. Where the freedom of seed disappears, the freedom of farmers disappears. This is why, in 1987, we started Navdanya means nine seeds which symbolises the richness of biodiversity. It also means the new gift which for us is the gift of seed as a commons and a source of life.

The Green Revolution was an exemplar of the deliberate destruction of diversity. The new biotechnologies, are repeating and deepening these tendencies, rather than reversing them. Further, the new technologies in combination with patent monopolies being pushed through intellectual property rights regimes in GATT/WTO and other trade platforms are threatening to transform the diversity of life forms into mere raw material for industrial production, and limitless profits. They are simultaneously threatening the regenerative freedom of diverse species, and the free and sustainable economy of small peasants and producers which is based on nature's diversity and its utilization.

The seed, for example, reproduces itself and multiples. Farmers use seed both as grain as well as for the next year's crop. Seed is free, both in the ecological sense of reproducing itself, as well as in the economic sense of reproducing the farmers livelihood.

This seed freedom is however a major obstacle for seed corporations. If the market for seed has to be created, the seed has to be transformed materially, so that reproducibility is blocked and its status has to be changed legally, so that instead of being the common property of farming communities, it becomes the patented private property of Seed Corporation. Over the last 25 years Navdanya has both protected and conserved seeds and biodiversity as part of Bija Swaraj. (seed freedom). We have also resisted laws that threaten our seed freedom.

Bija Satyagraha-Defending Farmers Seed Freedom

Since 1991, when the Dunkel Draft Text of the WTO agreement were leaked Navdanya organised awareness campaigns and rallies to alert farmers across the country about the emerging seed monopoly through patents. Navdanya spearheaded the movement to protect the farmers rights to biodiversity, rights of seed saving and seed exchange. We have been organizing several seminars, yatras, signature campaigns to create awareness amongst the farmers and also to sensitize the policy makers and politicians of the country to defend seed freedom.
We started organizing farmers through the Bija Satyagraha Movement to keep seed in farmer's hands and refused to cooperate with unjust IPR and seed laws that make seed a corporate monopoly and seed saving and seed sharing a crime. In 1993, half a million farmers participated in a historic Bija Satyagraha rally at Bangalore's Cuban's Park. This was the first international protest against WTO

Bija Satyagraha is:

- a grass-roots campaign on patent issues,
- an assertion to people's rights to biodiversity and
- a determination not to co-operate with IPR systems that make seed saving and seed exchange a crime.

In February 1992, Navdanya organized a National Conference on GATT and Agriculture with the Karnataka Rajya Ryota Sangha (KRRS) followed by a massive farmers rally in Hospet organized by Navdanya in association with the KRRS in October 1992.
The Seed Satyagraha was launched following Gandhi's Swaraj as a fight for truth based on non-cooperation with unjust regimes. In March 1993, we held a national rally in Delhi at the historic Red Fort under the leadership of the national farmers' organizations, the Bharatiya Kisan Union. Independence Day 15th August 1993 was celebrated with farmers asserting their Collective Intellectual Property Rights' (Samuhik Gyan Sanad) On 2nd October, 1993, one year of the seed Satyagraha was celebrated in Bangalore with a gathering of 500,000 farmers where farmers from other Third World countries as well as scientists who work on farmers' rights and sustainable agriculture participated in an expression of solidarity.

On 5th March 1999, Navdanya reasserted the Bija Satyagraha Movement against the immoral and illegitimate laws with over 2500 groups to defend farmers' rights and seed freedom in the face of biopiracy and seed monopolies. The movement was part of the Campaign for Bija Swaraj – Seed/ Biodiversity Sovereignty. The Bija Satyagraha was launched to defend biodiversity and people's rights to biodiversity, a new freedom movement against the new colonization of our life, livelihood and living resources.
The internationalization of the Seed Satyagraha within one year has given the word "globalization" a new meaning. From representing global markets as in the parlance of free trade proponents, it has come to mean from us the globalization of people rights and seed freedom through resistance to centralized control over all aspects of their life.

Navdanya with its network Diverse Women for Diversity and its partner International Forum on Globalisation was active at the WTO protest in Seattle which stopped the WTO and have not allowed it to come out of intensive care since then.

In September 2000, over 400 farmers from all over the world came together at the unique Bija Panchayat (People's Seed Tribunal) to give evidence of the crisis of seed and agriculture in the wake of globalization, which is pushing small farmers to suicide. Today the

Seed Keepers of the Ganga Valley

Bija Satyagraha has spread through large number of communities and groups across the country.
Responding to the deepening crisis, RFSTE and Navdanya took the initiative to organize a Bija Yatra in India in the year 2000 with the focus on Seed Rights, Seed Conservation and Sustainable Agriculture. Navdanya's Seed Tribunal and Bija Yatras (Seed March) have created awareness through seed fairs, seed exchange programs and initiation of new community seed banks.

We have been organizing Bija Panchayats, in different parts of the country against the existing IPRs laws, i.e. Patent Act, Seed Act, the PVP Act and Biodiversity Act, to articulate the peoples collective voice so that the entire discussion and policy on the seed is not determined by the corporate sector and interests driven by profit motives. Navdanya, RFSTE and West Bengal Institute of Juridical Sciences drafted an alternative IPR law, which provides sovereign rights to the nation over its genetic resources and give recognitions to the local community over its biodiversity.

To counter the globalized IPR system to be implemented at the national level, Navdanya conceptualized the idea of Common Property Rights in Knowledge as early as in 1993 to counter the private IPRs system and to prevent biopiracy. RFSTE/ Navdanya drafted model laws. Which ware then used and further developed by the Third World Network and the Organization of African Unity for creating sui generis options based on community rights to TRIPs.

Farmers' biodiverse indigenous varieties are the basis of our ecological and food security. Coastal farmers have evolved salt resistant varieties. Bihar and Bengal farmers have evolved flood resistant varieties, farmers of Rajasthan and the semi-arid Deccan have evolved drought resistant varieties, and Himalayan farmers have evolved frost resistant varieties. Pulses, millets, oilseeds, rice, wheat, vegetables provide the diverse basis of our health and nutrition security. This is the sector being targeted by the Seed Act. These seeds are indigenous farmers varieties of diverse crops, indigenous varieties of thousands of rice, hundreds of wheat, oilseeds such as linseed, sesame, groundnut, coconut, pulses including gehat, navrangi, rajma, urad, moong, masur, tuar, vegetables and fruits.

The Seed Act is designed to enclose the free economy of farmers and the free economy of seed varieties. Once farmers' seed supply is destroyed through compulsory registration by making it illegal to plant unlicensed varieties, farmers are pushed into dependency on corporate monopoly of patented seeds. The Seed Act is therefore the handmaiden of the Patent Amendments Acts which have introduced patents on seed.

New IPR laws are creating monopolies over seeds and plant genetic resources. Seed Saving and seed exchange, basic freedoms of farmers, are being redefined. There are many examples of how Seed Acts in various countries and the introduction of IPRs prevent farmers from engaging in their own seed.

The 2004 Seed Act has nothing positive to offer to farmers of India but a promise of a monopoly for private seed industries which have already pushed thousands of our farmers to suicide through dependency and debt caused by unreliable, high dependency and non-renewable seeds.
It is the MNC seed industry that needs regulations and not the small farmers of our country without whose seed freedom the country will have no food sovereignty and food security.

From January to March 2005, Navdanya with its partners undertook Bija Satyagraha campaigns to declare non-cooperation with the new Patent Laws, which allows patent on life and the proposed Seed Act, which would criminalize farmers. In the spirit of Gandhi's salt satyagraha, more than 100,000 people committed themselves to partcipate in a seed satyagraha if a seed act was brought into force. The declarations were handed over to the Prime Minister. The Seed Act has not yet been passed.

After the introduction of Bt cotton in India, it was witnessed that across the country, farmers are taking the desperate step of ending their life because of the new pressures building upon them as a result of globalization and corporate hijack of seed supply. More Than 20,000 farmers have committed suicide in Andhra Pradesh alone. The lure of huge profits linked with clever advertising strategies evolved by the seeds and chemical industries and easy credit for purchase of costly inputs such as pesticides is forcing farmers in to a chemical treadmill and a debt trap.

In response to the passage of Seed Act and growing farmers suicide, Navdanya undertook Seed Pilgrimages (Bija Yatras) to stop farmers suicides and create an agriculture of hope using heritage seeds and farmers ago ecological knowledge. Hence, the Bija Yatra 2006-2007 was launched on 9th of May to mark 150 years of our struggle for freedom by building a movement to stop the genocide of our farmers and reclaim our food sovereignty.
The Yatra started from sevagram, District Wardha in Maharashtra. The Yatra was concluded on 26th May in Banglore, Karnataka. The yatra covered Amravati, Yavatmal, Nagpur and vidarbha region of Maharashtra, Adilabad, Warangal, Karimnagar and Hyderabad in Andhra Pradesh, and Bidar, Gulbarga, Raichur, Hosepet, Chitradurg and Bangalore in Karnataka. These are the regions where farmers have become locked into dependence on corporate seeds supply for growing cash crops integrated to world markets, which is leading to a collapse in farm prices due to 400 billon dollars subsidies in rich countries.

Source: Navdanya

The Yatra was jointly organized by Vidharbha Organic Farmers Association, Maharashtra Organic framers Association, Andhra Pradesh Ryotu Sangham, MAR, All India Kisan Sabha, Karnataka Ryota Rajya Sangh, Bharat Krishak Samaj, Navdanya and other activists and organizations.

Navdanya spearheaded the movement in the three suicide belts of the country, namely, Maharashtra, Andhra Pradesh and Karnataka by burning the Bt. seeds in Amravati to reiterate its pledge to protect the farmer's rights of seed saving and seed sharing. The yatra, which was flagged off on May 9, 2006 from Sevagram in Vidarbha, Maharashtra focused on the seed rights, seed conservation and sustainable agriculture. Awareness was also created through the medium of music and street play to convey the message of organic agriculture, resistance to corporate monopoly of seeds,

Source: Navdanya

and the harms of mono-cropping and benefits of multi cropping systems.

Navdanya also organized a public hearing on the issue of farmers' suicide in Bhatinda, Punjab. The DiwanHall of Gurudwara Haaji Rattan was over flowing with the sea of widows and family members of suicide victims.

Apart from providing guidance and help to the farmers for the revival of agriculture, Navdanya, under the "Asha ke Beej" (Seeds of Hope) program, distributed the indigenous variety of seeds to the farmers and encouraged them to shift to organic and sustainable agriculture. More than 6000 farmers were distributed indigenous seeds. Various posters conveying messages on Bt. cotton failure, farmers' suicides, and sustainable agriculture were distributed among the farmer communities.

As a part of the yatra, over 250 village communities were covered and more than 5000 farmers have affirmed their rights to biodiversity by taking a pledge to conserve rejuvenate and protect their biodiversity. The awareness campaign reached areas of farmer's suicide and distributed indigenous seeds by covering around 75 villages in Maharashtra, 85 villages in Andhra Pradesh and 90 villages were covered in Karnataka. The College of Agriculture in Bijapur, Karnataka gave its full support to our endeavour in promoting awareness on the native seeds and it organized an interactive session between the Navdanya team and the professors and students of the college.
The students promised to support the cause by sensitizing people. More than 10,000 people were reached through the yatra and more than 10 million populations were covered in Karnataka alone through electronic media.

The Bija Yatra created awareness among farmers on GMO's, corporate farming and seed monopolies. The yatris had burnt Bt. Cotton throughout the journey of hope to encourage farmers to boycott Bt. Cotton, give up seeds of suicides and seeds of slavery, and adopt seeds of life and seeds of freedom and hope. A truck full of seeds traveled with the Bija Yatra and there was a hunger for seeds among farmers whose seed supply has been destroyed by the seed monopolies of Monsanto and its Indian subsidiary/licensees. Navdanya also organized a Bija Rally in the regions of Uttar Pradesh October 2006 with a reach of more than 10,000 farmers. In each village, farmers signed the copy of the memorandum for cancellation of seed Act 2004 and discussed drawbacks of the seed act, patent laws and privatization of water. During the yatra 200kg of wheat variety 308 was distributed to farmers.

Biopiracy

Over the past decade, through new property rights and new technologies, corporations have hijacked the diversity of life on earth, and people's indigenous innovation.

Intellectual property rights regimes globalised through the TRIPs agreement of WTO and have been expanded to cover life forms thus creating monopoly control over biodiversity. The TRIPs agreement of GATT is not the result of democratic negotiations between the larger public and commercial interests or between industrialized countries and the Third World. It is the imposition of values and interests by Western transnational corporations on the diverse societies and cultures of the world.

Patents on life are a hijack of biodiversity and indigenous knowledge; they are instruments of monopoly control over life itself. Patents on living resources and indigenous knowledge are an enclosure of the biological and intellectual commons. Life forms have been redefined as "manufacture", and "machines", robbing life of its integrity and self-organization. Traditional knowledge is being pirated and patented unleashing a new epidemic of "bio piracy".

To end this new epidemic and to save the sovereignty rights of our farmers it is required that our legal system recognizes the rights of communities, their collective and cumulative innovation in breeding diversity, and not merely the rights of corporations. It is the need of the hour to evolve categories of community intellectual rights (CIRs) related to biodiversity to balance and set limits along with boundary conditions for protection. The Intellectual Property Rights as evolved are in effect, a denial of the collective innovation of our people and the seed sovereignty or seed rights of our farmers.

Patenting of Neem

The patenting of the fungicidal properties of Neem was a blatant example of biopiracy and indigenous knowledge. But on 10th May, the European Patent Office (EPO) revoked the patent (0436257 B1) granted to the United States Department of Agriculture and the multinational corporation W. R. Grace for a method of controlling fungi on plants by the aid of an extract of seeds from the Neem tree. TThe challenge to the patent ofNeem was made at the Munich Office of the EPO by 3 groups : The European Parliament's Green Party, Dr. Vandana Shiva of RFSTE, and the International Federation ofOrganic Agriculture and challenged it on the grounds of "lack of novelty and inventive step". They demanded the invalidation of the patent among others on the ground that the fungicide qualities of the Neem and its use has been known in India for over 2000 years, and for use to make insect repellents, soaps, cosmetics and contraceptives and the neem patent was finally revoked.

Source: Navdanya

The Basmati Robbery

On 8th July 1994, Rice Tec Inc, a Texas based company, filed a generic patent(Patent No. 5663484) on basmati rice lines and grains in the United States Patent and Trademark Office (USPTO) with 20 broad claims designed to create a complete rice monopoly patent which included planting, harvesting collecting and even cooking. Though Rice Tec claimed to have "invented" the Basmati rice, yet they accepted the fact that it has been derived from several rice accessions from India. Rice Tec had claimed a patent for inventing novel Basmati lines and grains.

After protests the U.S. Patent and Trademark Office struck down large sections of the Basmati patent. No new patents have been given to Rice Tec, and no new right has been given to market their varieties as equivalent to or superior to Basmati.

Syngenta's Attempt at Biopiracy of India's rice diversity

Syngenta, the biotech giant, tried to grab the precious collections of 22,972 varieties of paddy, India's rice diversity, from Chattisgarh in India. It had signed a MoU with the Indira Gandhi Agricultural University (IGAU) for access to Dr. Richharia's priceless collection of rice diversity which he had looked after as if the rice varieties were his own children. The mass agitation by the peoples' organization, farmers' unions and civil liberty groups, women's groups, students' groups and biodiversity conservation movements against Syngenta and IGAU bore result and Syngenta called off the deal.

Monsanto's Biopiracy of Indian Wheat

The next major victory against biopiracy for Navdanya came in 2004 when the European Patent Office in Munich revoked Monsanto's patent on the Indian wheat variety, Nap Hal. Monsanto, the biggest seed corporation was assigned the patent (No. EP 0445929 B1) on wheat on May 21st, 2003 by the EPO under the simple title, "plants". On January 27th, 2004 The Research Foundation for Science, Technology and Ecology along with Greenpeace and Bharat Krishak Samaha filed a petition at the EPO challenging the patent rights given to Monsanto, leading to the patent being revoked.

Source: Navdanya

Source: Navdanya

ConAgra's Biopiracy claim on Atta (Wheat flour)

Atta, a staple food and ingredient within India, is currently under threat from the corporation ConAgra who filed a "novel" patent (patent no 6,098,905) claiming the rights to an atta processing method, and was granted the patent on August 8th, 2000. The method that ConAgra is claiming to be novel has been used throughout South Asia by thousands of atta chakkis, and so cannot justly be claimed as a novel patent.

Monsanto's Biopiracy of Indian Melons

In May 2011, the US company Monsanto was awarded a European patent on conventionally bred melons (EP 1 962 578). These melons which originally stem from India have a natural resistance to certain plant viruses. Using conventional breeding methods, this type of resistance was introduced to other melons and is now patented as a Monsanto "invention". The actual plant disease, Cucurbit yellow stunting disorder virus (CYSDV), has been spreading through North America, Europe and North Africa for several years. The Indian melon, which confers resistance to this virus, is registered in international seed banks as PI 313970. With the new patent, Monsanto can now block access to all breeding material inheriting the resistance derived from the Indian melon. The patent might discourage future breeding efforts and the development of new melon varieties. Melon breeders and farmers could be severely restricted by the patent. At the same time, it is already known that further breeding will be necessary to produce melons that are actually protected against the plant virus.

DeRuiter, a well known seed company in the Netherlands, originally developed the melons. DeRuiter used plants designated PI 313970 – a non-sweet melon from India. Monsanto acquired DeRuiter in 2008, and now owns the patent. The patent was opposed by several organisations in 2012.

Monsanto's Bt Cotton

The gene giants taking patents on seeds and biodiversity are also pushing genetically engineered seeds such as Monsanto's Bt.Cotton. Genetically engineered crops are contaminating and polluting biodiversity, thus destroying the integrity of genetic resources. e.g. The corn in Mexico's centre of genetic diversity has been found to be contaminated by Bt. Corn. New IPR laws are creating monopolies over seeds and plant genetic resources.

Source: Navdanya

Under pressure from World Bank, the Seed Policy of 1998 started to dismantle our robust public sector seed supply system.

Monsanto has pushed its Bt. cotton into Indian agriculture through corruption and fraud at every step. Bt cotton was commercialized in India during April 2002 with Monsanto being the major technology provider operating through 60 regional biotech companies holding Bt licenses. Under international agreement, Monsanto/Mahyco can charge a royalty of 20% for 3 years and 5% for another 3 years. Even though Monsanto does not have a patent on Bt cotton in India, it collects royalties as fees for trait value. The increase in the net profit of Monsanto India (about 162 per cent increase in profit from 2000 to 2003) indicates the huge success of Bt cotton seeds. At present, 95 percent of the cotton seed sold in India is Bt cotton owned and controlled by Monsanto. During 2004, the farmer had to pay Rs 1,600 for a single 450 gm packet of Bt cotton seeds which included a technology fee component of Rs 725. The intervention of state governments forced the company to slash the seed price. However, Monsanto still makes about Rs 34 billion per year from Indian farmers.

A comparison of organic and Bt cotton seed price during the last two decades will be relevant in this context. During the 1990s, the local seed cost was around Rs 9 per Kg. By 2004, the cost skyrocketed to Rs 1,650 to Rs 1,800 for less than half Kg (450gm). At present the seed cost is Rs 650 to Rs 920 for 450 gm. However, the current price still exhibits a disproportional increase when compared to the cost of seed (Rs 9) before the introduction of Bt.

Other inputs like fertilizers, pesticides, utilities like water and electricity also saw a big rise in costs from the mid to late 1990s. The rising input costs have forced the farmer into a debt trap. The states under the cotton belt have the highest number of farmers' suicide due to agricultural indebtedness. Between 2001 and 2010, a total of 94,975 farmers committed suicide in the states of Maharashtra(37646), Karnataka(21828), Andhra Pradesh(21809) and Madhya Pradesh(13692).

Maharashtra remains the worst single State for farm suicides for over a decade now. The total number of farmers who have taken their own lives in Maharashtra since 1995 is closing in on 54,000. There is a remarkable increase in the average number of suicides in Maharashtra after the introduction of Bt cotton in 2002. (P Sainath, Farm suicides rise in Maharashtra, State still leads the list,The Hindu)

To address this crisis, Navdanya has established 3 seed banks in Vidarbha to save and distribute local varieties of seeds to farmers and work towards a living economy. (See Box Fibres of Freedom)

The Great Seed Robbery: Public Private Partnerships

India has signed a US India Knowledge Iniative in Agriculture, with Monsanto on the Board. Individual states are also being pressured to sign agreements with Monsanto. One example is the Monsanto-Rajasthan Memorandum of Understanding, under which Monsanto would get intellectual property rights to all genetic resources, and to carry out research on indigenous seeds.

Under pressure of the Prime Minister's office, Indian states are signing MOUs with seed corporations to privatize our rich and diverse genetic heritage. For instance, Project Sunshine, Monsanto's hybrid maize expansion program seeking to bring about a "Yellow Revolution" in tribal areas of India. The project is implemented in tribal districts of Vadodara, Banaskantha, Dahod and Panchmahal of Gujrat and is extended to Jhabua, Dhar, Seoni, Chhundwara, Ratlam, Khargone and Alirajpur districts of neighboring Madhya Pradesh state. They have similar projects in Orissa (Project Goldendays), Gujarat (Project Sunshine) and Rajasthan (Project Golden Rays).

Project Sunshine included seed distribution, chemical fertilizer distribution, soil testing, micro-credit and banking services, rain fall insurance, farm mechanization, extension and marketing support. Each farmer is supposed to get 8 Kilos of hybrid maize seed from these companies, in addition to 50 Kilos each of Urea, DAP and MoP. The state government began purchasing and distributing Monsanto maize seeds under the brand name of Prbal since the inception of Project Sunshine under the Vanbandhu Kalyan Yojana in 2008. Under the scheme, over 5 lakh tribal farmers were being provided Prabal seeds for free. Non – tribal farmers were given subsidies ranging from 33 per cent to 50 per cent, depending on their financial status. It is estimated that the state government has procured seeds for Rs 54.94 crores from Monsanto from the last four years.

However, the project met severe criticism from all corners. The reasons behind are:

1. The Dekalb hybrid corn being used in the project matured 23 days later than the local varieties. This means land being engaged for 23 days more than the local cultivation which makes it difficult for the rain fed farmers to adopt inter cropping. It also encourage monoculture practice which undermine the food security of the farmer.

2. The hybrid yielded grain 81.17% higher than the local cultivars on an average. However, the hybrid was cultivated under protected soil moisture, recommended high chemical fertilizer dose and plant protection measures. The long term practice of chemical farming can adversely impact the fragile eco systems in the tribal villages.

3. The increase in cost of seed was phenomenal during the project period. The price of seed has increased from Rs 156 per acre in 2007 to Rs 1,145 in 2009.

4. The local community preferred indigenous maize varieties for their food requirements.

The seeds that will be used for essentially derived varieites by corporations like Monsanto are originally farmer's varieties, and there is a law to protect farmers' rights - The Farmers Rights and Plant Genetic Resources Act. Nothing in the MOU acknowledges, protects or guarantees farmers' rights and is violative of the Farmers Rights Act. While public resources will be given away freely to Monsanto at a subsidy, Monsanto's IPR monopolies will be protected.

This is an MOU for Monsanto takes all and the public system gives all.

After a campaign by Navdanya, a "Monsanto Quit India" Bija Yatra (Seed Pilgrimage) and relentless protests by farmers, the Rajasthan governement was forced to cancel the MOU.

On 25 April 2012, the Gujarat government decided to withdraw Monsanto's proprietary seeds from various ongoing government projects including Project Sunshine. The hijack of the seed supply by corporations like Monsanto threatens the very survival of our peasants and our biodiversity. The costly experiment of Bt. cotton and hybrid corn that Monsanto has undertaken is increasing the economic and ecological vulnerability of farmers without bringing them new benefits.

The future of the seed, the future of the farmers and the future of food lies in the conservation of biodiversity of our seeds. Seed Sovereignty is the foundation of food sovereignty.

The Great Seed Robbery threatens both and it must be stopped.

Biopiracy of Brinjal

The development of Bt brinjal by Monsanto and its Indian partner Mahyco is another classic example for biopiracy. The company has accessed nine Indian varieties of brinjal to develop their genetically modified vegetable without prior permission from the NBA or the relevant State and local boards. This is a violation of the Biological Diversity Act 2002, according to the Environmental Support Group (ESG) which lodged the formal complaint with the Karnataka Biodiversity Board on February 15, 2010, soon after the Government put a moratorium on Bt brinjal on health and safety grounds. (Priscila Jebaraj, 'Development of Bt brinjal a case of bio-piracy', The Hindu,August 10, 2011)

Source: Navdanya

Bio Piracy of Climate Resilient Crops

For millennia farmers have innovated and evolved varieties with unique properties. Farmers' innovation has stressed on breeding for climate resilience and for conservation of biodiversity. Giant corporations which have destroyed biodiversity by promoting mono cultures and uniformity are now claiming farmers' collective, cumulative innovation as their invention through bio piracy patents. The latest in this bio piracy is the patenting of climate resilient traits. Petitioner has been conserving farmers' varieties since 1987. We have created community seed banks of climatic resilient crops which have distributed seeds after cyclones, the tsunami, and after draught.

The corporations are pirating the collective innovation of farmers in breeding crops that are resilient to droughts, floods and salinity. The Bio technology industry is spreading the misconception that without genetic engineering we will not be able to evolve crops with climate resilience.

As a recent Monsanto advertisement states:

9 billion people to feed.
A changing climate.
Now what?

(And of course offers its GM seeds as the answer.)

ETC Group's report reveals that the world's largest seed corporations are secretly amassing hundreds of monopoly patents on genes the company will market as "Climate Resilient" genes. As the report reveals, these proprietary approaches to combating the effects of climate change will not solve the problem but in fact exacerbate it.

The report also includes a table listing of the 1,500 patent applications and patents on the so-called climate resilient genes. India's national Action Plan on Climatic Change has a mission dedicated to sustainable agriculture. However its focus is not on sustainable farming and organic agriculture but on the "Use of Biotechnology". As the Action Plan states "Biotechnology applications in agriculture related to several themes, including drought proofing, taking advantage of elevated CO2 concentrations, increased yields and increased resistance to disease and pests".

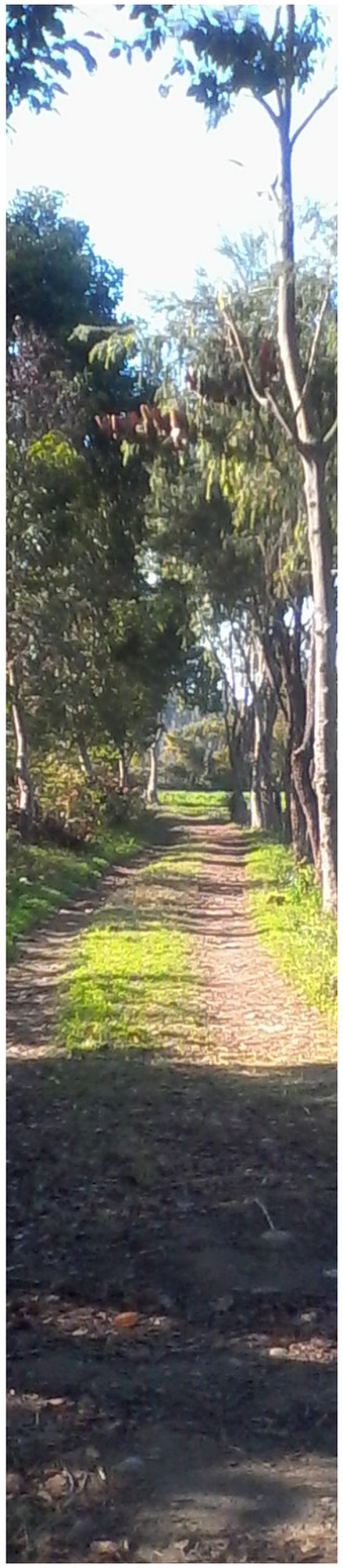
Farmers' innovations and participatory breeding options do not find any reference in the corporate/official response to climate change. This report on the Bio piracy of Climatic Resilient crops shows that farmers have bred crop varieties that can tolerate climate extremes such as droughts, floods and cyclones (which bring salty sea water to land). As lists from our community seed bank and community biodiversity registers show that these traits already exist in farmers' varieties. Gene giants are appropriating climate resilience as their "innovation" through patents. India's rice varieties possess a wide diversity in their morphological and physiological characters. These varieties were and are the gifts of nature's intelligence and farmers' innovation over millennia from the temperate high hills of the Himalayas to the tropical lowland deep water and salt water marshes of the sea coasts. Global biotechnology corporations like Monsanto, BASF Bayer, Dupont and Syngenta make broad- based IPR claims on genetically engineered varieties. However, the genes introduced by them are not created by them, but have been created through farmers' careful selection and breeding process in conjunction with nature.

However, genetic engineering is a laggard technology, limping far behind the advanced technologies of farming communities of yesteryears. It merely tries to recreate artificially and often irrationally, usually with hazardous or ludicrous consequences, what nature and farmers have already most aptly created in partnership of over thousands of years.

Further, abiotic stresses rarely occur alone; there are usually two stresses in a site, and often as many as six, including micronutrient deficiencies in soil. Thus the long-term adaptability of a variety depends on its level of tolerance for all the stresses that occur in its growing environment. Sometimes, no stress occurs at all, i.e. aluminum-toxicity will not occur if the soil is kept saturated through adequate rainfall. However, rainfall will not affect phosphorus deficiency. The severity of some stresses like salinity is affected through factors like time and space, due to high solubility and mobility of salts. Salinity is also affected by the quantity of water available, either as rainfall, or groundwater. These variations form a major constraint to commercial breeding, particularly genetic engineering.

Farmers' varieties have high grain yields, and high straw yields, which help to further increase soil fertility as well as its capacity for retaining moisture, either as green manure, or as fodder for cattle, which in turn produce manure for the soil.In addition, farmers' varieties have been selected for their long-term ability to withstand several stresses and yet produce consistent yields. Thus farmers' varieties are ecologically sound varieties as well as food security sound varieties.

The resilience and wide adaptability of farmers' varieties is clear from the fact that while commercial and public sector varieties of salinity resistant rice failed to rehabilitate agriculture in Ersama, Orissa in the aftermath of the super cyclone and floods of 1999, a farmers' variety from the Navdanya Project in West Bengal proved extremely successful, and is today in high demand. Farmers have developed and have been using these varieties for over hundreds of years; genetic engineers like Monsanto are just waking up to their potential.



Bio Piracy of India's Gene Bank

Blessed with one of the world's most diverse seed gene banks, India's premier state-run agriculture research institute, the Indian Council of Agriculture Research is offering its massive seed /gene bank to multi-national seed giants. The claim is that this is in exchange for expertise and a share of the profits and is seeking to collaborate with multinational seed corporations to develop high-yielding, durable seeds to improve the nation's poor crop yields. However, corporations are creating non renewable seeds which farmers cannot buy every year.
Costly non renewable seeds are trapping farmers in debt- 250,000 indebted farmers have committed suicide in the last 15 years.

As one of the oldest and largest agricultural societies, India has an impressive diversity of at least 166 species of crop plants and 320 species of wild relatives of cultivated crops. Forests, which contain much though by no means all of India's biodiversity, now comprises about 64 million hectares, or about 19% of land area of India, according to satellite imagery. Roughly 33% probably represents primary forest. About 10 million hectares are managed as "Protection forests" for ecological stability, 15 million for production of timber and 25 million as social forest to meet the demand for the fuel wood and fodder. About 14 million hectares lie within national parks and wildlife sanctuaries.

Most of the people in our country derive their livelihood and meet their survival needs from the diversity of living resources. In this context, therefore, conservation of biodiversity is intimately linked to indigenous knowledge system on the one hand and people's rights to protect their knowledge and resources on the other hand. Whenever biodiversity is threatened and eroded, people's rights and people's knowledge is also eroded.

Seeds produced and sold by farmer account for over 70 per cent of the total seed supply in the country. The sharing and exchange of biological resources and knowledge of its properties and use has been the norm in all indigenous societies, and it continues to be the norm in most communities, including the modern community. But sharing and exchange get converted to "Piracy" when individuals, organizations or corporations who receive biodiversity and knowledge from indigenous communities freely and convert this gift into private property through intellectual property claims. This piracy of genetic wealth is called "bio piracy".

Under this bio piracy regime biodiversity-based traditional knowledge system of the forest dwellers, farmers and healers are fast becoming the private property of the MNCs. The MNCs are usurping these systems from the domain of common knowledge through property rights which in essence promote resource piracy and intellectual piracy, since the system provided under the TRIPs recognizes and provides protection only to the formal innovators, not to the informal indigenous innovators. The traditional knowledge of informal innovators is being pirated by the formal innovators who make minor modifications or advances and then seeks patents, thereby claiming the knowledge as their 'private property'.

Navdanya's Community Biodiversity Register (CBR)

A Community Biodiversity Register is the documentation of the resources and knowledge of local communities at the local, regional and national levels by the people themselves for the purpose of rejuvenating the ecological basis of agriculture and the economic status of the farmers.

The CBR recognizes both the differing needs of farmers and consumers as well as their contribution towards meeting these needs. Navdanya has formed more than 5000 CBRs over the years. The CBR serves the needs of the local agricultural communities and not the needs of non-local commercial interests who need biodiversity for raw material. The documentation therefore has to develop from local community registers which are ecosystem specific and culture specific and which are the primary level of utilization for community rejuvenation. Documenting farmers' varieties of seed is a vital countervailing force to the predatory nature of the IPR regime because it refutes the terms "landraces" and "germplasm" (both of which contribute to the concept that farmers varieties are gifts of nature and thus can be appropriated freely for corporate benefits) and invalidates corporate claims to originality and innovation by placing it beyond doubt with the farming community. The CBR, by making farmers varieties are gifts varieties freely accessible to other farmers across the country, rejuvenates agricultural biodiversity, people's knowledge and sustainable agriculture.

Access to traditional varieties revitalizes the role of the farmer as a plant breeder, and strengthens his resistance to seed monopolies. Seed exchanges between farmers thus shrink the market for corporate seeds. Such exchanges thus help farmers and farming communities' retain agricultural freedom and economic control over agriculture.

At Navdanya, we have been compiling such a community agricultural biodiversity register based on our work over the years. Navdanya's community biodiversity register acts as a document of indigenous resources and indigenous knowledge, as a platform for assertion of Common Intellectual Rights and as a seed catalogue for interested individuals and groups to get access to organic seed, the first link in the organic food chain.

Navdanya believes that conservation of agricultural biodiversity is impossible without the participation of the communities who have evolved and protected the plants and animals that form the basis of sustainable agriculture. In agriculture, in situ conservation strategies are impossible to separate from sustainable utilization and production methods.

Why has documentation of community knowledge become necessary? Documentation of community knowledge is becoming imperative because of

1. ***Erosion of resources: Non-sustainable production and consumption patterns in agriculture have led to the erosion of land, water and agricultural biodiversity in farmers' fields. For example, the 'miracle seeds' of the green revolution replaced indigenous varieties of rice, many of which are like the amaranth, which are in the process of being replaced by the crops like rice and wheat, are also threatened by extinction.***

2. ***Erosion of knowledge: Communities which are identified and innovated have traditionally had free exchange of knowledge of their resources within the community and outside it. When such resources are eroded and lack common use, common knowledge is eroded over time.***

3. ***Disappearance of sustainable utilization alternatives: When both the resource and knowledge about it disappear from the commons, the space for utilization of alternatives in a sustainable manner, or rather, the space for a return to sustainable agricultural production and consumption shrinks.***

4. ***Intellectual piracy: The removal of knowledge from the commons leaves it vulnerable to being claimed as the private intellectual property of someone else. This is particularly true when the common knowledge has no recorded originator or innovator but has been treated as community knowledge traditionally. The IPR regimes ensure that the pirates of such knowledge become the new owners of the knowledge and share it only for profits.***

5. ***Biopiracy: Intimately linked with intellectual piracy is biopiracy. The removal of resources from the commons leaves it vulnerable to piracy both directly by the IPR regimes and by collections made by organizations (nationally and internationally, government or private)***

6. ***IPRs and monopolies: Together, intellectual piracy and biopiracy mean that the resource is now in the monopoly control of corporations. In agriculture, this reduces all innovation to innovation by the corporations for profits, and agricultural production and consumption become conditional to corporate interests.***

Source: Navdanya

Jaiv Panchayat (Living Democracy)

Ecological agriculture is not possible unless biodiversity is in the commons, and is free from the threat of extinction posed by technologies like genetic engineering. Hence, on 5th June 1999, on the World Environment Day, Navdanya launched Jaiv Panchayat - the Living Democracy Movement- to fight against the biopiracy and IPR monopolies on life forms.

The "Jaiv Panchayat" is the Biodiversity Panchayat. It is living democracy – both in being the democracy of all life, and democracy in everyday life. It consists of the entire gram sabha (gram ke sab log) women, children and minority communities and not merely those who are on the electoral rolls of the village. This form of the Panchayat renders the community the decision-maker on all matters pertaining to biodiversity and its conservation. In doing so, the Jaiv Panchayat lays down the parameters within which the elected Panchayat body can take action vis- -vis biodiversity. The community ownership it asserts is not aimed at putting different communities in conflict with each other over the use and control over biodiversity. It is actually rejuvenating the traditional systems of common property resource management, which was based on equitable sharing of scare resources for the common good of all the communities, as an alternative to the privatization and monopolization propagated by the Corporates.

Such alternatives are also envisioned in the Convention on Biological Diversity (CBD) and Agenda 21. The Jaiv Panchayat movement is in the spirit of the CBD and is our local Agenda 21. The obligations to implement the commitments under CBD are part of the government's mandate, broader and deeper than that of the trade commitments.

Local grassroots initiatives like the Jaiv Panchayat are crucial in this context and they do not have to be limited to structures of the formal elected Panchayat. Such local decentralized democratic bodies are in fact in the spirit of the Panchayati Raj Amendment 1992 and the Panchayat Act 1996. Genuine commitment to the process of democracy implies that even the processes of globalization and free trade have to be based on recognition of primary ownership of village communities to their natural resources and their decision making power to determine the utilization of these resources.

The first Jaiv Panchayat was brought to life by a gathering of about 1000 villagers of Agastyamuni village in district Rudraprayag, Garhwal, Uttaranchal on 5th June, 1999- the World Environment Day. The Jaiv Panchayat campaign launched by Navdanya is a part of the much broader movement called Bija Satyagraha. As a part of the movement over 6000 village communities have affirmed their rights to their biodiversity and have taken a pledge to conserve, rejuvenate and protect their biodiversity. There are more than 200 Jaiv Panchayats in Garhwal alone, where people have asserted their inalienable and common rights to their natural resources. In many of the Jaiv Panchayats, the elected leaders are also the leaders of the Movement. Many of them have declared their villages GM-free zones as well.

Jaiv Panchayat records the biodiversity of the village in their own Community Biodiversity Register (CBR) to protect and reclaim the biological and intellectual commons.
It has rejuvenated indigenous knowledge and promoted its propagation from grandmother to grandchildren.

Mandakini Milan Declaration
5th June 1999 Agastyamuni, Distt. Rudraprayag, Garhwal, Uttaranchal

Today, on 5th June 1999, on the auspicious occasion of World Environment Day, we the people of Agastyamuni, take the solemn pledge that we will continue to protect our plants, trees, animals, cattle, and our entire diverse biological wealth, as a revered gift and our ancestral heritage.
This pledge assumes more significance as it is being taken in Agastyamuni, the sacred land of Rishi Agastya, who through his dedication and research stabilized the mighty Himalayan Mountain (therefore the name Agastya - the stabilizing force). Both humanity and nature have greatly benefited from the diligent research of Maharishi Agastya, Maharishi Jagdamni, Rishi Atri, Mata Anusuiya and other saints. Their work has contributed to the conservation and sustainable use of all kinds of medicinal plants and floral wealth and other precious biodiversity of these mountains. The research has been further enriched by Maharishi Charak and other saints and health practitioners who compiled the volumes of Samhita and Nighantu detailing the uses and properties of our biological resources. These volumes were bestowed to the community for well- being and continue to live through the Ayurveda. From our forefathers we have inherited the right to protect the biodiversity of our Himalayan region and also the corresponding duty to utilize these biological resources for the good of all people. Therefore we pledge, by way of this Declaration, that we shall not let any destructive elements unjustly exploit and monopolies these precious resources through illegal means. So that in our communities and countries we can truly establish a living people's democracy wherein each and every individual can associate herself/himself with the conservation, sustainable and just use of these biological resources in her/his everyday practical living. This tradition of sharing shall be kept alive through the Jaiv Panchayat - the living democracy. The Jaiv Panchayat will decide on all matters pertaining to biodiversity.
Through such decentralized democratic decision-making we will make real the democracy for life. Cows, buffaloes, goats, sheep, lions, tigers, and in fact all animals, birds, plants, trees, precious medicinal plants and manure, water, soil, seeds are our biological resources and we shall not let any outsider exercise any control over them through patents or destroy it through genetic engineering.
As a community, we shall together be the guardians of our biological heritage.

The basic purposes of the Jaiv Panchayat are to:

- Strengthen people's rights over biodiversity to defend local economies.
- Heal the diseased and decaying system of political democracy, and
- Counter and resist the WTO rules for free trade in agriculture, patents on seeds, and medicines which are threatening the environment, livelihood and domestic rights of the common citizens.

The launch of the Jaiv Panchayat marks the commencement of a movement towards relocating control and decision making over knowledge and biodiversity from global to the local, from the MNCs to the people. The Jaiv Panchayat is living democracy because through it, people live economic and political democracy in their daily lives, the democratic structure society is vibrant and alive; and the family of species, our earth family of diverse life forms is included in the democracy of life.

The democratic functions of a Jaiv Panchayat are to:

- Protect cultural diversity and cultural activities.
- Rejuvenate indigenous knowledge of biodiversity.
- Create mechanisms to conserve it.
- Create mechanisms to regulate it and use it sustainably.
- Document the biological wealth past and present.
- Conserve medicinal plants and encourage traditional health practices.
- Defend the livelihoods based on biodiversity.
- Promote sustainable agriculture.
- Facilitate setting up of community seed banks.
- Regulate the trade of biodiversity.
- Shape the laws for ownership and control over biodiversity and its knowledge.
- Make decisions on IPRs and knowledge conflicts.
- Make decisions on activities that would have adverse impact on biodiversity and people's lives, e.g. introduction of genetically modified organisms, toxic and hazardous chemicals and polluting industry.

Keepers of The Seed

The Navdanya philosophy of conservation of agricultural biodiversity is through a network of community seed banks in different ecozones of the country. Such conservation through a network of community seed banks, as envisaged by us, facilitates four rejuvenations:

1. Rejuvenation of agricultural biodiversity as a common property resource;
2. Rejuvenation of farmers' self reliance in seed locally and nationally;
3. Rejuvenation of sustainable agriculture as the foundation for food security, both locally and nationally;
4. Rejuvenation of farmers' rights as common intellectual rights of agricultural communities.

In situ strategies of agricultural biodiversity conservations need the participation of four kinds of farmers.

1. Farmers who continue to use and conserve diverse varieties. In general these are small peasants in marginal or remote areas, which were left out of the green revolution because of not having the necessary resources to shift into resource-capital- and chemical-intensive agriculture. Marginal farmers in marginal regions are therefore the source of rejuvenation in biodiversity in agriclutre. They are the seed savers or beej rakshaks.
2. Farmers whose agricultural biodiversity has been eroded but who feel the ecological, economic and political imperative to reintroduce diverser species and crop varieties for ecological and food security. They can become beej rakshaks by introducing diversity from farmers who have conserved seed through community seed banks and exchange networks.
3. With industrialization of agriculture, many farmers have stopped producing seed for their own requirements. If biodiversity has to be rejuvenated in agriculture and farmers' seed supply has to be strengthened, some farmers need to become seed producers for farming communities. Such farmers who multiply and produce more sed than they require in order to meet the needs of other farmers are seed producers or beej utpadaks. Seed multiplication can also be undertaken by farmers' organizations and NGOs involved in seed conservation activities.
4. Given the rapid erosion of biodiversity and the acceleration of forces of destruction through the spread of monoclutures and export oriented agriculture, some initiatives will also be needed to conserve biodiversity that is disappearing and cannot be conserved through immediate introduction in production systems. Farmers who grow species and varieties that have lost their utilization value due to marker forces need to be encouraged to grow diversity for in situ conservation for future use and ecological security.

No matter what the level of conservation activity, free exchange of agricultural biodiversity and knowledge of its utilization among farming communities is essential for both conservation and sustainable production. There is no static or deep division between the four kinds of in-situ activity. Different farmers will function in different roles according to the socio-economic context, their own capacities and the larger support system.

Free exchange between farming cummunities becomes vital in the light of the present erosion of agricultural biodiversity and future erosion in farmers' rights due to IPRs in biodiversity. The community seed bank network facilitates farmers' seed exchange and supply systems.

Bringing the Lab to the Field

In Navdanya's living seed banks the contributions of farmers to identifying, studying, modifying and cultivating varieties to suit their ecological, economic and other needs are recognized. Farmers are the experts, situated at the centre of conservation activity. Conservation starts and ends in the fields—it is carried on within the environment where the diversity grows. While corporate agriculture does not acknowledge farmers' skill in agriculture and contributions to breeding, and therefore awards breeders' rights only to the seed industry and researchers, Navdanya partnership model of conservation recognizes that farmers and scientists are equals.
This partnership model is committed to creative solutions that fall far from the mainstream and question the dominant model of food production and distribution.

The work of Dr. R.H. Richharia, eminent Indian rice scientist and pioneer in the area of conservation of diverse varieties through farmers' participation, served as an inspiration and guide. Daniel Querol, an expert in genetic resources who helped set up conservation programs in Mexico, Peru, and Nicaragua, came to Navdanya in 1987 to help design the program. Dr. Oscar Zamorra of the Agricultural University in Los Banos, Philippines, who along with a group of Filipino farmers established a farmer-run seed conservation program, visited the Navdanya program and held training workshops with local farmers. The Keeper of the National Herbarium of Ethiopia, Dr. Tewolde Berhan G. Egziabher, provided valuable technical information. In addition, for several years Navdanya staff interacted with and received training from experts at the Plant Genetic Resources Centre of Ethiopia. This gathering of farmers and scientists as equal partners has been a key to the great strength of the Navdanya program.

In February 2010 Dr. Salvatore Ceccarelli of the International Center for Agricultural Research in Dry Areas, Syria (ICARDA) flew to the Indian subcontinent to meet with the Navdanya Seed Keepers Network and share his findings from his work with farmers in North Africa and the Middle East. Ceccarelli, a former scientist for a major seed distributor in Europe, began his talk by stating that hybrid seeds are failing farmers and describing the principles of participatory breeding to the assembled group. Participatory breeding refers to the method whereby small farmers work in conjunction with scientists to breed plants that meet the specific needs of the farmers not the financial needs of global seed corporations. Using this collaborative method farmers actively participate in and direct the ongoing process of crossbreeding plants possessing exactly the kind of desirable traits they require—such as drought and disease resistance, yield, or taste. But, stressed Ceccarelli, while this work may be done in cooperation with scientists, farmers can just as effectively do this work themselves.

Navdanya's Community Seed banks - Dr. Vinod Bhatt

Navdanya has set up 111 community seed banks in 17 states of India in the last 25 years. Many seed banks are now running independent. Since the first seed banks were created in the Garhwal Himalayas of Uttar Pradesh, the Deccan in Karnataka, and the Western Ghats, also in Karnataka, Navdanya has started new seed banks in Ladakh, Jharkhand, Bihar, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh. Navdanya's partners in this work include Bija Bachao Andolan in Northern Uttar Pradesh now Uttarakhand; Green Foundation, Navdarshanam, and Centre for Tropical Ecosystems,

Source: Navdanya

in Karnataka; Rishi Valley in Andhra Pradesh; Centre for Indian Knowledge Systems in Tamil Nadu; Vrihi in West Bengal; Vidharbha Organic Farming Association, and Vidharbha, Prakruti Paramparika Bihana Sangarakhna Abhijan in Orissa; Kisan Samvardhan Kendra in Madhya Pradesh; Kisan Vigyan Kendra in Uttar Pradesh; Manvi, Indian National Trust for Art and Cultural Heritage in Kerala; Hazaribagh, in Jharkhand; and the Women's Alliance and Ladakh Ecology Group in Jammu and Kashmir.

Navdanya has also established conservation and training centers at village Ramgarh / Sheeshambara in Doon Valley, in Bulandshahar in west U.P. and Balasore in Orissa. More than 3800 rice varieties have been collected, saved and conserved. Hundreds of varieties of crops such as millets, pseudo-cereals and pulses have been conserved and promoted which were pushed out by the green revolution and growing monocultures.

Navdanya's Biodiversity Farm in the Doon Valley was started on land that had been desertified with more than two decades of eucalyptus plantation and is now home to a rich variety of crops. Presently it is spread over 45 acres of land. Navdanya conserves more than 1600 different species of crops and multipurpose plants, which include 600 paddy varieties, 15 pulses, 159 varieties of wheat, 11 varieties of Barley, 10 varieties of Oats, 7 varieties of mustard and several millets, vegetables, green manure, pulses, spices, vegetables and medicinal plant varieties. The farm's register serves as a record of these local indigenous varieties and of indigenous knowledge. It also serves as a document for assertion of common intellectual rights and as a seed catalogue from which interested individuals and groups can get access to organic seeds.
Some of our community seed banks are described below:

Sor/Sankri

Sor/Sankri village of district Uttarkashi, in the famous Har Ki Doon valley is situated at about 2000m amsl. The village in the valley represents subtropical to alpine climate. The villages are situated in between the range of altitude varying from 1500m to 2800 m amsl. The region is now a part of the Govind Ballbh Pant Wild Life Sanctuary since 1952. It is also declared a National park for Musk deer. About 80 % of the land in the area is covered with the forest.

Due to the fact that the village is situated inside the wild life sanctuary and national park, farmers are deprived of the rights

Source: Navdanya

of not only collecting the minor forest produce (MFP), but also from rearing their cattle in the forest. As a consequence population of sheep's and goats has come done to 20 % in last 10 years. People have entirely shifted from animal rearing to Agriculture, which is now the main source of livelihoods in the region. Farmers grow kidney beans, amaranth, potatoes, buckwheat and chenopodium.
In recent years people have also started planting apple orchards as an alternative to the sheep's and goats in tune of the neighbouring state of Himachal Pradesh. But still the plants are very small, which will take atleast few more years to get income from the orchard.

Cultivation of medicinal plants and Hippopy (Seabuckthorn) is also gaining popularity after people were banned from collecting MFPs from the reserve forest. Navdanya also played a vital role in popularizing the cultivation of medicinal plants and Hippopy as a health drink for people of different ages.

Other than this, inaccessibility is another hampering factor for the development of this region. Majority of villages in the region are still more than 20 kms away from the road head. However, in the monsoon season, because of excessive rains area remains cut-off from the other part of the country.

The community seed bank in the region not only provides farmers with the different varieties of quality seeds of different crops within their area, but also, access to different options like cultivation of medicinal plants which are of immense importance, and can not be grown elsewhere in other climatic conditions.

About 5329 people of 18 villages in the region are benefitting directly from this seed bank. Of these about half are women farmers.
The people in the region belong to the local tribe, popularly known as Pahari.

Source: Navdanya

Source: Navdanya

Chandipur, Orissa

Dr Ashok Panigrahi and Kusam Misra

Odisha, a predominantly rice growing state is considered to be the home of the tall indica rice diversty. It is speculated that at one point of time in the remote past there were some ten to fifteen thousand of tall indica rice diversity being widely cultivated in varied eco-climatic conditions existing the state. These were strongly photoperiodic and many of them were really high yielders. Dr.R.H. Richaria, an Internationally renowned Indian rice scientist was known to have documented some such high yielding natives, selected and improved through local peasants which could outmatch and outweigh the best yielding rice HYVs. This was done by Dr. Richaria at least 15 years before the launch of the Green Revolution. Richaria's highest yield was 54 quintals per acre or 13.6 tons per hectare achieved in Salem and the lowest yield was 24 quintals per acre or 6 tons per hectare achieved in West Bengal from his indigenous improved rice varieties. The presenter himself achieved 28 quintals per acre organically in the fields of a peasant at Mayurbhanj in kharif of 2004-05, using internal inputs only. Some of them had the lodging character in them, but their straw was used as roofing material and cattle feed. Some of them were known to be climate adapted and others met varied food specific necessities of the rice cultivators and consumers. A few of them were therapeutic as well having the tissue rejuvenating potentialities as required in the traditional Indian medication. The aromatic rice diversity carried diverse aroma in them; some smelling like fried green gram and others like cumin seed. Both the consumer and the producer had ample scope to pick and chose the variety of rice of choice. The contribution of the 1st.green revolution is elimination of this natural rice diversity. The widely cultivated HYV rice, now limited to just a few, fail to sustain extreme eco-climatic conditions like saline inundations, flood and drought and meet the consumers food preferences. Aromatic rices have vanished from the local markets. Existence of therapeutic rice is now believed to be a myth in Odisha.

The trend was perceivable more than a decade ago. Navdanya decided to save these vanishing rice diversities of Odisha through a system of germ-plasm-conservation employing both in situ and ex situ methods and at the same time carry out experiments on their sustainability in varied eco-climatic conditions in view of rapid climate change and yield potentials under various soil amendments. Their behaviours and responses are being recorded. This came handy while selecting the seeds of specific rice diversities for empowering the local communities in rehabilitating agriculture in disaster areas like Erasama in Odisha after the Orissa super cyclone in 2000, Nagapattinam in Tamilnadu after the boxing day tsunami in 2005 and Nandigram in Bengal in 2007. Navdanya Odisha as of now maintains 4 seed banks, 3 village level and 1 central level, where seeds of diverse rice varieties are conserved and renewed every year. Climate resilience factor is given importance in the village level seed banks when all available rice land races are conserved in the central seed bank. Navdanya also encourages individual cultivators to save, exchange and increase diversities in his/ her own fields. The village level seed banks are located in different and varied eco-climatic zones, like salt prone, flood prone and drought prone areas. The central seed bank has 700 rice varieties in its accession out of which 119 varieties are climate resilient. 33 of these are salt and flood tolerant including 1 aromatic variety, 47 are flood tolerant and 39 are drought tolerant including 3 aromatic and 2 therapeutic rice varieties. The rest 581 varieties belong to the general category. There are 56 aromatic rice varieties of which 2 have unique and diverse aroma, 1 smelling like fried green gram and the other, like cumin seed not available anywhere in the world. The therapeutic rices are used in old age tissue rejuvenation.

Diversity, seed exchange and yield potentials

Seed exchange has been the back bone of paddy cultivation until the green revolution. Native paddy plants have diverse basal sheath colours, with about 9 shades of 5 colours, ranging from green, yellow, purple, violet to black. Reappearance of wild variety is an inherent character of paddy cultivation. Cultivators, hence, replace the variety with a different basal sheath colour next season just to be able to distinguish the weeds which are then manually removed. All the green revolution varieties have the same basal sheath colour, making it difficult to distinguish the wild weed which is never removed. A particular variety cultivated in a given field for more than 3 years lose yield, hence, is replaced. This replacement used to be procured through seed exchange, a part of the barter system that was in place till a few decades ago. Thus the cultivators used to gain twice, a new variety and an ensured more yield as the new variety always yielded more. The green revolution proponents do not contribute to this gospel truth. It has been further found out that seeds exchanged over a long distance for growing in the

Source: Navdanya

same type of micro-climate not only yielded much more but often even changed its potentials. Two examples will suffice to put all doubts at rest.

1. Udasiali, an indigenous photosensitive kharif paddy variety transported over 500 kilometers from Balasore to Erasama in Jagatsingpur as part of post 1999 super cyclone disaster agricultural rehabilitation yielded at par in rabi.

2. Three select Odisha salt tolerant paddy varieties transported over a distance of over 1500 kilometers from Balasore to Nagapattinam in Tamilnadu under the 'seeds of hope' programme following 2004 tsunami yielded three times more and far better than any known high yielders. The same varieties behaved even better when cultivated in Indonesia, another 1000 or more kilometers away, in 2006 by Professor Friedhelm Goltenboth of Hohenheim University, Germany.

Paddy cultivated under green revolution may have better yield potentials, but it never benefit the cultivators. More grains come to the market but only after making a hole in the cultivator's pocket. Several dozen field experiments conducted to find out the cost-benefit ratios of modern subsidized farming compared to organic farming in order to show a path to the distressed paddy cultivators, yielded a truth that the said ratio can never go beyond 1.5 for the former (msf)and never less than 2 for the later(of). In few instances the B:C ratio achieved under organic farming exceeded 4.5 which is unthinkable in green revolution farming. When all subsidies are withdrawn from the farming sector, the current type of agriculture for sure will cease to operate.

Tamil Nadu seed bank

Navdanya initiated a seed bank in Tamil Nadu with The Center for Indian Knowledge Systems. The list below is taken from the book on indigenous rice varieties.

SN	Name	SN	Name	SN	Name
1.	Thanga Samba	12.	Muttakar	23.	Kallimadiyan
2.	Neelan Samba	13.	Kullakar	24.	Pisini
3.	Kappa Samba	14.	Kappakar	25.	Koomvalai
4.	Vadan Samba	15.	Perungar	26.	Kudaivazhai
5.	Kudiraival Samba	16.	Sigappu Kuruvikar	27.	Pitchavari
6.	Kaliyan Samba	17.	Vaigunda	28.	Chengalapttu Sirumani
7.	Kurangu Samba	18.	Jiljil Vaigunda	29.	Kadaikazhuthan
8.	Seeraga Samba	19.	Thooyamallee	30.	Arubatham Kodai
9.	Samba	20.	G.E.B.24	31.	Kattu kuthalam
10.	Samba Mosanam	21.	Sempalai	32.	Periyavari
11.	Kitchili Samba	22.	Kuzhiyadichan	33.	Sadakar

Chota Udaipur, Rajasthan

Rajasthan is known for its desert as well as hot and dry climate throughout the world. Navdanya started a seed bank for such an agro-climate in the village Chota Udaipur in district Ajmer of Rajasthan. Due to the increasing use of hybrid and high yielding seeds of millets, vegetables and other crops, indigenous seeds are disappearing very fast. This seed bank in Rajasthan will help conserve the traditional seeds of millets, oil seeds, spices, vegetables and pulses in the state. About 500 farmer families are being benefitted directly from the present seed bank. Over the next 5 years, we hope to cover a population of 15000 farmers across 10 villages. Jharkhand is another newly formed state of India, which was carved out of Bihar. The community seed bank in the village Kotari of Ranchi district benefits 500 families across 10 villages.

Seed banks in the National Capital Region

A seed bank was established in a village near Meerut in western Uttar Pradesh. After receiving proper training, farmers kept and multiplied these seeds. Now farmers have 52 varieties of vegetable seeds, 6 varieties of fruits and 8 varieties of other grains in their seed bank. Group is very proud of seed bank now.

After farmers were empowered through training and they started getting better yields, farmers were linked to the market through procuring their vegetables from their doorsteps and distributing it to the Navdanya network. Navdanya's women vegetable growers group in the year 2009 - 2010 grew and sold vegetables for Rs. 2 lac approximately. In 2010-11 the group was able to sell vegetables worth Rs. 5,20,389, whereas in 2011-12, their sales went upto Rs. 11,29,226. In just three years the sales of the women group went up by almost about 6 times.

Vegetable seeds were also sold by the group in addition to the vegetables. In the year 2009-2010 they could sell the seeds for Rs. 3000 and in the financial year of 2010, 2011 for Rs, 42,000 and in 2011-2012 for Rs. 60,000. These seeds were also distributed to the widows of farmers who have committed suicides in Punjab as 'Seeds of Hope' In Punjab about 3500 seed packets were distributed, whereas about 3000 seed packets were also distributed by Navdanya in Uttarakhand and Ladakh as well.

Source: Navdanya

Navdanya in the year 2011 started vegetable production and a living seed bank in Bulandshahar, in NCR. Navdanya also created a seed bank at New Delhi office. From this seed bank seeds are being distributed to the students in different schools working on the project.

Rejuvenating Lost Gardens of Khajurahoo

Navdanya started rejuvenating Lost Gardens of Khajuraho in association with the INTACH Belgium in the year 2008. The endeavor was started with the "Pateria Ka Bag", 1.5 acres, situated on Rajnagar road towards the north. Plants of Mango, Guava, Amla, Jack Fruit and other local fruits were planted in the garden after restoring the old monuments in the gardens. Plant nursery was developed and vegetable and tree plans were given to the farmers around free of cost to help local farmers to improve the diversity and also to conserve the crops and fruit trees grown in the region for centuries.

A seed bank was started in the year 2011. The seed bank was started with conserving the vegetable seeds. The seed bank is conserving about 45 vegetable seeds of the region. Moroever, at the "Rani ka baug" a vegetable nursery is being developed along with fruit trees plantations. Progress of the Navdanya intervention was witnessed by the participants of the conference on Sustainable Development of Khajuraho, organized by INTACH, India in association with INTACH Belgium and M.P. Government on from 16th -18th November 2010.

Seeds of Hope, Seeds of Freedom

The Seeds of Hope (Asha Ke Bija) program aims at providing an emergency supply of indigenous varieties of seeds in those regions, which are worse effected, either by the natural calamities likes super cyclone in Orissa, Tsunami in Tamil Nadu or as result of the policies e.g. Punjab and Andhra Pradesh.

The saline resistant seeds conserved by Navdanya in Orissa have helped the victims of the super cyclone that hit Orissa in October 1999 to re-establish sustainable agriculture.

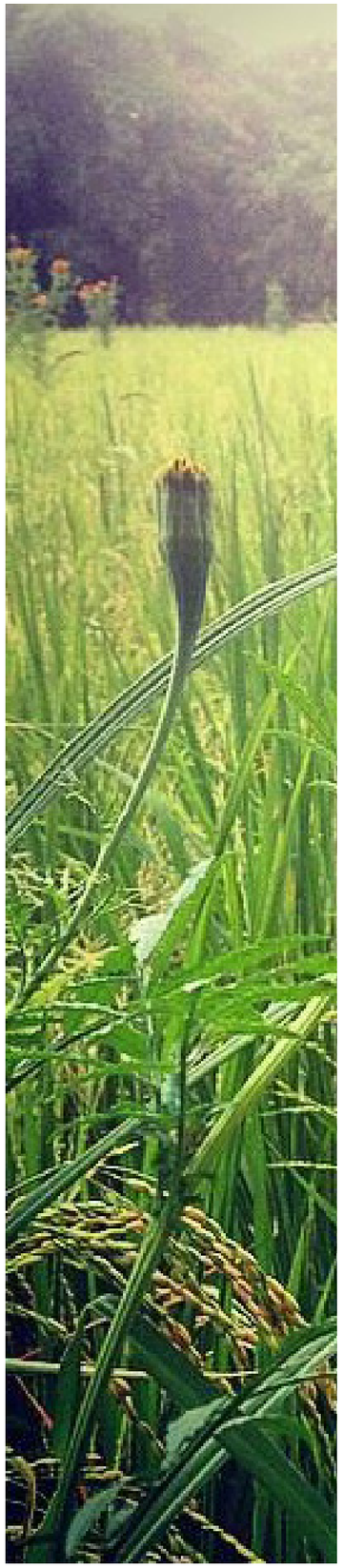
Navdanya has also given hope to the victims of tsunami.
The tsunami waves affected the agricultural lands of the farmers due to intrusion of seawater and deposition of sea land. More than 5203.73 hectare of agricultural land in Nagapattinam was affected by the tsunami. The Navdanya team conducted a study in the affected villages to facilitate the agriculture recovery. The team, distributed 3 saline resistant varieties of paddy, which included Bhundi, Kalambank and Lunabakada, to the farmers of the worse affected areas. These varieties of native saline resistant kharif paddy seeds were collected from Navdanya farmers in Orissa amounting to a total of 100 quintals.

Navdanya through its Seeds of Hope program also provided farmers of Kashmir valley with seeds for next crop, which they lost during the 2005 earthquakes. The biodiverstiy program has started in Pulwama district in Jammu and Kashmir. The district was carved out of Anantnag district. Initially the biodiversity has started in five villages of Pulwana district, which are Sambura, Pampar, Batherhama, Zawoora and Hadu. In the long run, the biodiversity conservation program of Navdanya aims to cover whole of Kashmir and Ladakh.

Navdanya launched Project Climate Change in August 2006 and established seed banks in Jaisalmer (drought resistant crops), Orissa (saline resistant corps) to help with various dimensions of preparedness in the face of extreme climate changes like the foods in Barmer (Rajasthan). Navdanya is now multiplying and distributing varieties of resistant seeds of rice, millet, bajra (pearl millet) and wheat. GMO- free seed banks have been started to rescue farmers from the seeds of suicide.

Under the Seeds of Hope program, Navdanya continues its efforts to supply seeds to those who are in the need of it and have lost their local varieties due to Green Revolution policy of the government.

Apart from providing guidance and help to the farmers for the revival of agriculture, Navdanya, under the Asha Ke Beej program, distributed the indigenous variety of seeds to farmers in the Bija Yatra in Uttar Pradesh, Maharashtra, Karnataka and Andhra Pradesh and encouraged them to shift to organic and sustainable agriculture. More than 7000 farmers were distributed indigenous seeds. The farmers were so thrilled to receive the traditional seed varieties and Navdanya assured them to provide full support to them to convert to organic agriculture. It would be interesting to note that the seed bags contained nine seed varieties such as split red gram, paddy, spinach, mustard etc. Various posters conveying messages on Bt. Cotton failure, farmers' suicides, and sustainable agriculture were distributed among the farmer communities.



Fibres of Freedom in Vidarbha

Farmers in the Vidarbha region of central India are trapped in a vicious cycle of debt caused by increased use of monoculture farming practices, a dependence on costly non-renewable seed supplies by monopolies, and increasing chemical inputs. This situation has caused a serious social and agrarian crisis with epidemic suicide rates among indebted farmers leaving behind broken families and communities as well as environmentally damaged lands. Navdanya has been working with farmers for over two decades to build alternatives to the suicidal economy of patented / genetically engineered/hybrid seeds controlled by corporations.

Responding to the deepening crisis, in Vidarbha and across the country and reclaim our seed and food sovereignty, Navdanya launched Bija Yatras in 2000 as started the Seeds of Hope Program, which provides immediate support directly well as seed tribunals to address the root causes of this tragedy.
In 2007, Navdanya to indebted farmers and specially the widows of farmers, farmers themselves, who have committed suicide to give them an economically and ecologically viable and sustainable alternative and moreover, addresses the root cause of the crisis. Navdanya distributes indigenous variety of seeds to the farmers and encourages them to shift to organic and sustainable agriculture. More than 6000 farmers have been distributed indigenous seeds.
The Fibres of Freedom program aims at providing immediate support directly to indebted farmers and specially the widows of farmers, farmers themselves, who have committed suicide to give them an economically and ecologically viable and sustainable alternative.

Fibres of Freedom supports farmers to grow chemically free organic natural fibres as well as promotes our indigenous skills and knowledge.

Our program provides participating farmers with the training, infrastructure, knowledge, and leadership to help lead, through positive example, an increasing number of farmers into this and similar projects. These suicides have had a devastating impact on the social fabric of these families and their farming communities. Therefore, in particular, this project aims to support widows of farmers who have committed suicide and provide them and their families with a livelihood and security. The incomes that the Project will bring to these farming families will enable their children to go to school and get an education. The despair and dispossession experienced by these families and their communities will be transformed into hope and economic empowerment in a stable way.

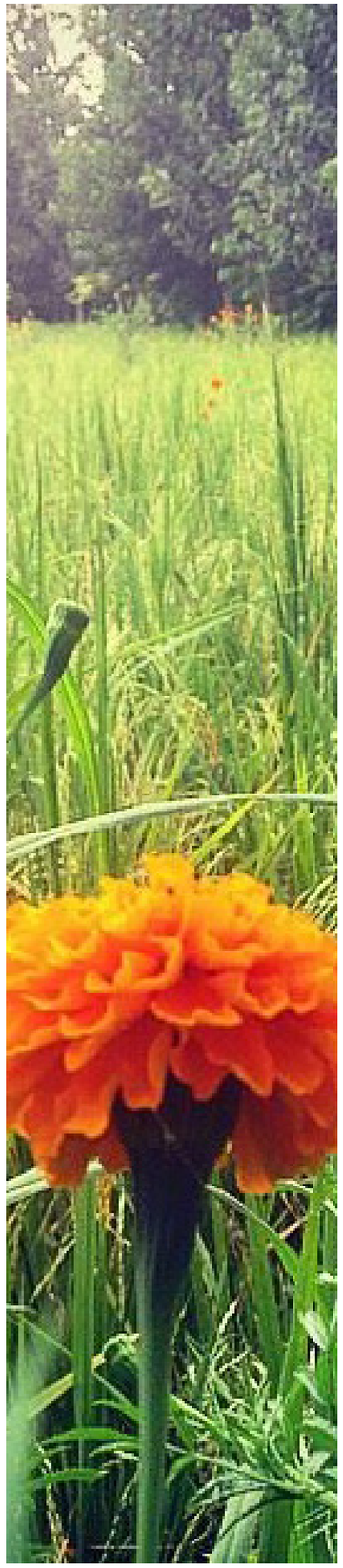


Photo by Charlie Mgee

A-Z of Agroecology and Organic Food Sytems – September 2014

A Global Capacity Building Workshops was held at the Navdanya Biodiversity Conservation farm for citizens' organizations and movements on seed saving, seed exchange and participatory breeding and the links between Seed Sovereignty and Food Sovereignty,and issues of Intellectual Property Rights, Patents, Seed Monopolies and Farmers Rights at Dehradun with eminent scientists and environmentalists like Professor Salvatore Ceccarelli, Dr. Vandana Shiva, Sandor Katz, AV Singh, Javier Carrera, Fabian Pacheco, Marilyn Kennedy, Chris Kennedy, Dr. Mira Shiva, Dr. Anna Powar. The global capacity building workshop (A-Z on Agroecology) concluded with the annual Earth Festival (Bhoomi) organized by Navdanya in New Delhi on 01/10/2014.

Glimpse from A to Z of Agroecology and Organic Food Systems: *http://www.navdanya.org/news/450-a-z-of-agroecology-and-organic-food-systems-a-report-of-the-week-one-from-the-earth-university*

Report, Videos and Photos: *http://seedfreedom.info/a-z-of-agroecology-and-organic-food-system/*

Source: The Hummingbird Project

Navdanya – An Indian farm inspiring the World

by Charlie Mgee – Formidable Vegetable Sound System,
2 October 2014

Source: *http://formidablevegetable.com.au/navdanya-an-indian-farm-inspiring-the-world/*

After just a week at Navdanya – Vandana Shiva's biodiversity conservation farm in Dehradun, northern India, my mind is blown. This place is such haven of peace and tranquility amidst the chaos of India, but it is also buzzing with the enthusiasm of so many active, inspired people from all over the world.

I arrived at the tail-end of their annual A-Z of Agro-Ecology course, where a contingent of about 30 people from over 15 countries had come to learn universally adaptable ways to design resilient food systems. Encompassing everything from permaculture, horticulture and vermiculture to fermentation, preservation and Indian chutney-making, people really were given a deep sense of where their food comes from and how to produce it ethically from farm to table.

To see this small farm (less than 20 acres) not only growing all kinds of organic, traditional, non-GMO varieties of grain, fruit, vegetables and medicines from all over India, but also planting seeds of empowerment and hope into the minds of such a diverse range of people was a truly inspiring thing.

When the course was over, everyone was left with a strong sense that the movement towards organic, ecological, resilient food production is crucial for our survival and wellbeing in the years to come. More importantly, it was agreed that this is only going to happen at many diverse, small-scale, community levels rather than through unsustainable, industrial monoculture farming and that this will ultimately give us a deeper connection and respect for our food and the world around us. The best way to the heart is through the stomach, but what is put into the stomach should also come from the heart.

Photo by Charlie Mgee

Navdanya Campaign for Seed Freedom and Food Democracy

Dear President Obama and Prime Minister Modi,

Humanity and the Earth are at a critical juncture. Patents on seeds and seed monopolies have created an ecological crisis of biodiversity erosion, erosion of farmers' rights and erosion of people's freedoms.

It is not India's IPR laws that need changing but US laws. On criteria of rights of nature and people's rights, India's laws are strong. As our democracies deepen their interaction, the citizens of India and the US expect that it will be ethical and ecological values that will lead the dialogue, not the false claims of "invention" by corporations to establish ownership of life on Earth. Ownership and royalty collections are the only reason GMOs are being pushed by corporations. It is imperative that we protect our cultural and indigenous intellectual property from being appropriated for short term profits of a few.

As citizens, we ask that in each of our countries, you do not dismantle the protections that ensure the ethical fabric of our societies and the fundamental freedoms like saving seeds and knowing what we are eating, in order to allow corporate ownership of nature's bounty through false claims of innovation. We ask that our democratic representatives take the strengths in our legislation (e.g. Article 3(d) and 3(j) of the Indian Patent Act) and multiply our strengths. Working together, we resolve to protect these rights that we have and should have. Prime Minister Modi, we count on you to uphold the science based definitions in India's patent laws that protect the rights of citizens, and play a leadership role to work with President Obama to help correct the distortions in the US IPR system.

We ask that the US not put pressure on India to undo article 3(d) and 3(j), and will instead take lessons from India about how to respect the integrity of living systems and processes, and put the rights of farmers and citizens first. For us seed freedom includes farmers' rights to save, exchange, breed, sell farmers varieties of seeds- varieties that have been evolved over millennia without interference of the state or corporations.

Prime Minister Modi and President Obama, let this Republic day in India sow the seeds of Earth Democracy and Vasudhaiva Kutumbhakam, for our times and the future. We hope you show great leadership by working together to strengthen the laws to protect your citizens and countries instead of making it easier for corporations to take control over life-forms for short term profits. Let us build Purna Swaraj for all life on Earth, freedom to grow our food and know our food. Let us work toward a future where our food is our freedom.

Read more: *http://navdanya.org/campaigns/478-seed-freedom-and-food-democracy*

Biodiversity or GMOs: will the future of nutrition be in women's hands or under corporate control?

Source: *http://seedfreedom.info/campaign/declaration-for-international-womens-day-8-march-2015/*

Diverse Women for Diversity Mahila Anna Swaraj Initiative for Health , Equity and Society Navdanya Moms Across the World

Declaration for International Women's Day, 8 March 2015

Women have been the primary growers of food and nutrition throughout history, but today, food is being taken out of our hands and substituted for toxic commodities controlled by global corporations. Monoculture industrial farming has taken the quality, taste and nutrition out of our food.As a result, India is facing a nutritional crisis: every fourth Indian goes hungry, and in 2011 alone, diabetes took the lives of 1 million Indians.Now, the same companies who created the crisis are promising a miracle solution: GMOs. Genetically engineered Golden Rice and GMO Bananas are being proposed by corporations hiding behind the cloak of academia as a solution to hunger and malnutrition in the Global South. But these are false miracles. Indigenous biodiverse varieties of food grown by women provide far more nutrition than the commodities produced by industrial agriculture. Golden Rice is 350% less efficient in providing Vit A than the biodiversity alternatives that women grow. GMO 'iron-rich' Bananas have 3000% less iron than turmeric and 2000% less iron than amchur (mango powder). Apart from being nutritionally empty, GMOs are part of an industrial system of agriculture that is destroying the planet, depleting our water sources, increasing green houses gases, and driving farmers into debt and suicide through a greater dependence on chemical inputs. Moreover, these corporate-led industrial monocultures are destroying biodiversity, and we are losing access to the food systems that have sustained us throughout time.

Photo by Manlio Masucci

Source: Navdanya

When we consider the number of patents involved in these initiatives, it becomes all too clear that the only beneficiaries of these supposedly 'people-led' ventures are large companies operating for profit - not for people.This needs to stop now. On this international women's day, we call on all women – the world's primary food-growers and food-givers – to stand together and reclaim our knowledge, our farming, and our food. To expose the lies generated by the GMO industry, to reject the false promises of Golden Rice and GMO Bananas, and to reclaim the planet for all living beings.India's nutritional emergency.

India is facing a nutritional emergency. We are the capital of hunger and malnutrition. Every fourth Indian is hungry. Every second child wasted and stunted. India is the diabetes capital of the world with 50.8 million patients.

http://archive.indianexpress.com/news/india-has-largest-number-of-diabetes-patients-report/531240/
In 2011 the diabetes epidemic in the country took 1 million people's lives. Diabetes, a metabolic disorder, is a result of an imbalanced diet. The Green Revolution's focus on rice monocultures has been made at the cost of greens, daals, and more nutritious millets – and diabetes has crept into rural areas. Contrary to popular belief, diabetes affects more people in rural India (34 million) than affluent urban Indians (28 million)
http://ccebdm.org/news.php

An imbalanced agriculture based on monocultures and an imbalanced diet based on white polished rice has become a killer. Nearly 50% of Indian women suffer from iron deficiency anaemia.

What should be our response to this nutritional emergency: bringing biodiversity into our agriculture and food, or intensifying chemical monocultures of rice through the introduction of GMO Golden Rice? Empowering women by keeping food and nutritional security in their hands, or allowing corporations to take control of our food?

Nutritional deficiencies are a direct result of destruction of biodiverse sources of nutrition by industrial monocultures. Proponents of industrial agriculture - most significantly implemented in India through the Green Revolution - did not value nutrition. Instead, they focussed on increasing inputs of imported chemicals, water and fossil fuels to grow chemical monocultures, in which food was reduced to an empty, toxic commodity. It lost is quality, taste, aroma, and - most importantly - its nutrition.

There are six processes through which industrial farming robs food of its nutrition.

First, industrial breeding is based on uniformity, long distance transport, and industrial processing. In comparison, food grown by women – who have been the primary seed breeders and producers of food – is based on diversity, taste, nutrition, quality and resilience. Traditional Indian wheats like kathia, bansi, and mishri are full of taste and nutrition. Industrially bred wheats, on the other hand, are low in nutrition and have contributed to the epidemic of gluten intolerance.

Second, by replacing biodiversity with monocultures, industrial agriculture reduces the amount of nutrition per acre. With diversity we can grow enough iron for 20 Indias, and enough Vit A for all of India today.

Third, by substituting the sophisticated ecological processes of renewing fertility with chemical inputs of synthetic fertilisers, the health of the soil is destroyed, nutrition in soils is reduced, and plants which provide our food become nutritionally empty.

Table 1 Percentage Decline in Mineral Content of US and British Crops in the Last Sixty Years

Mineral	US 1963-1992 (13 fruits & vegetables)	Britain 1936-1987 (20 fruits & 20 vegetables)
Calcium	-29	-19
Magnesium	-21	-35
Sodium	N/A	-43
Potassium	-6	-14
Phosphorus	-11	-6
Iron	-32	-22
Copper	N/A	-81

N/A, not analyzed. * U.S. (Berginer, 1997) and British (Mayer, 1997) data.

The British Journal of Nutrition published a meta-analysis done by Professor Carlo Leifert of Newcastle University and 15 other scientists from around the world. This research finds significant differences in the nutritional content of organic and non-organic crops (fruit, vegetables, cereals and pulses). Organic crops and crop-based food products were found to have significantly higher concentrations of antioxidants (including phenolic acids, flavanones, stilbenes, flavones, flavonols and anthocyanines) compared with their conventionally produced counterparts. The mean percentage difference for most antioxidant compounds was between plus 18% and 69%. Smaller, but still statistically significant, composition differences were also detected for a number of carotenoids and vitamins.

A switch to eating organic fruit, vegetable and cereals (and food made from them) would lead to a 20–40% (and for some compounds up to a 60%) increase in crop-based antioxidant/(poly)phenolic consumption without any increase in calories. This is important as there is strong scientific evidence of the health benefits of increased consumption of (poly)phenolics and other plant secondary metabolites with antioxidant activity, most notably protection against chronic diseases, including cardiovascular and neurodegenerative diseases and some cancers.
http://research.ncl.ac.uk/nefg/QOF/

Fourth, GMOs are also leading to a decline in nutritional availability, because the biotechnology industry is growing commodities, not food. 90% of the GMO corn and soya goes to biofuel and animal food, not human food. This is not a viable food system.

Fifth, herbicide tolerant crops account for most of the GMOs cultivated. The use of Roundup (glyphosate) with Roundup Ready crops removes vital minerals like manganese through "chelation"-binding. Manganese is vital to the gut-brain connection. The depletion of this nutrient could be contributing to the autism epidemic in the USA. According the Centre of Disease Control, in the 1970's 1 in 10,000 children were autistic.In 2007, it rose to 1 in 150 . Today it is 1 in 68.

At current rates of increase, 1 in 2 children in the USA could be born autistic by 2025 (Seneff in Vandana Shiva(ed) Seed Sovereignty, Food Security: Women in the Vanguard, Women Unlimited New Delhi, 2015)

Sixth, just as there is an ecology of biodiversity in our fields, there is an ecology of biodiversity in our nutrition. Nutrients need each other. Fats are needed for bioavailability of Vit A, and Vit C is needed for absorption of iron. That is why we use mustard seeds for seasoning greens, and have "chutneys" with our meals. Mechanistic reductionism in agriculture combined with mechanistic reductionism in nutrition, undermines the ecological processes through which our farms grow nutrition and our bodies are nourished through a balanced diet.

All the evidence points to the need to grow nutrition by intensifying biodiversity and ecological processes in our food and farming systems. This is the path Navdanya has followed over more than 2 decades. We have increased production of nutrition (Health per Acre) as well as farmers incomes (Wealth per Acre) through agroecology and biodiversity.

But today, industrial agriculture paradigm is trying to extend its non-sustainable life by promising answers to malnutrition through GMOs such as Golden Rice and GM Bananas.

Golden Rice is a False Miracle

Golden Rice is a genetically engineered rice with two genes from a daffodil and one gene from a bacterium which gives it a yellow colouring, which is supposed to increase beta carotene, a precursor to Vit A. It is being offered as a miracle cure for Vit A Deficiency (VAD).

But Golden Rice is a false miracleIt is a disease of nutritionally empty monocultures offered as a cure for nutritional deficiency.

According to *goldenrice.org*, children under the age of 7 require 450 'units' of Retinol (Vitamin A) Equivalents. Children would therefore have to eat 300gms of Golden Rice to get their daily requirement of Vit A. In indigenous food cultures, a child's diet normally contains less than than 150 gmsof rice, but also contains a range of other nutritious foods grown by women. In fact, Golden Rice is 350% less efficient in providing Vit A than the biodiversity alternatives that women have to offer.
To get your daily requirement of Vit A, all you need to eat is one of the following:

- two tablespoons of Spinach or Cholai leavesor Radish leaves
- four tablespoons of Mustard or Bathua leaves
- one tablespoon of coriander chutney
- one and a half table spoon of mint chutney
- one carrot
- one mango

Not only do these indigenous alternatives based on women's knowledge provide more Vit A than Golden Rice at a lower cost, they also provide other nutrients. One such example is iron, which helps fight iron deficiency and anaemia. But just like the biotechnology industry is offering Golden Rice for Vit A deficiency, it is promoting GMO bananas for increased Vit A and iron. In reality, GMO bananas provide 7000% less iron than indigenous biodiversity that Indian women are experts in growing and processing.

http://www.navdanya.org/attachments/banana_booklet_30-4-2013.pdf

The Vit A in GMO Vit A bananas has been pirated from indigenous bananas in Micronesia. The beta-carotene traits have been added to the sticky japonica rice Taipei 309, which Indians do not eat. The feeding trials for Golden Rice as well as the GM Bananas were done illegally and unethically.

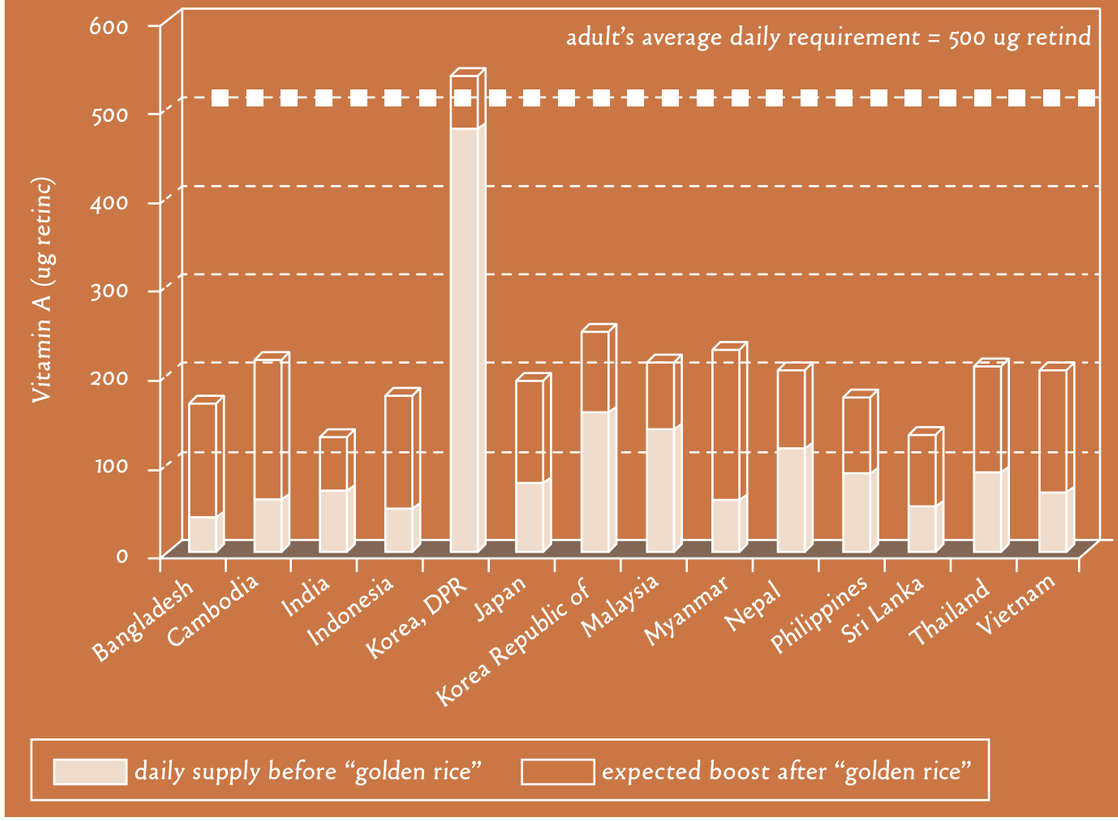
http://www.gmwatch.org/index.php/news/archive/2013/15045-golden-rice-not-so-golden

http://www.nature.com/news/china-sacks-officials-over-golden-rice-controversy-1.11998

http://gmwatch.eu/index.php/news/archive/2014/15536-gm-golden-rice-paper-to-be-retracted-amid-ethics-scandal

By foregoing biodiversity alternatives that provide more nutrition, the biotechnology industry is pushing for a monoculture rice diet, which is a recipe for intensifying the diabetes epidemic. With 62 million patients, India already has extremely high rates of diabetes. *http://archive.indianexpress.com/news/india-has-largest-number-of-diabetes-patients-report/531240/*
Golden Rice is an irresponsible proposal that would intensify this by blocking much-needed alternatives - biodiversity and balance in our diets. For example, dietary fats are needed to absorb Vit A. To get these in our diets, we need biodiversity of oilseed crops and livestock. Rice monocultures displace both these forms of fat, leaving us with no way to absorb Vit A, and thus aggravate the nutritional crisis.

Golden rice: Solving Vitamin A deficiency?
Vitamin A supply where rice is a staple



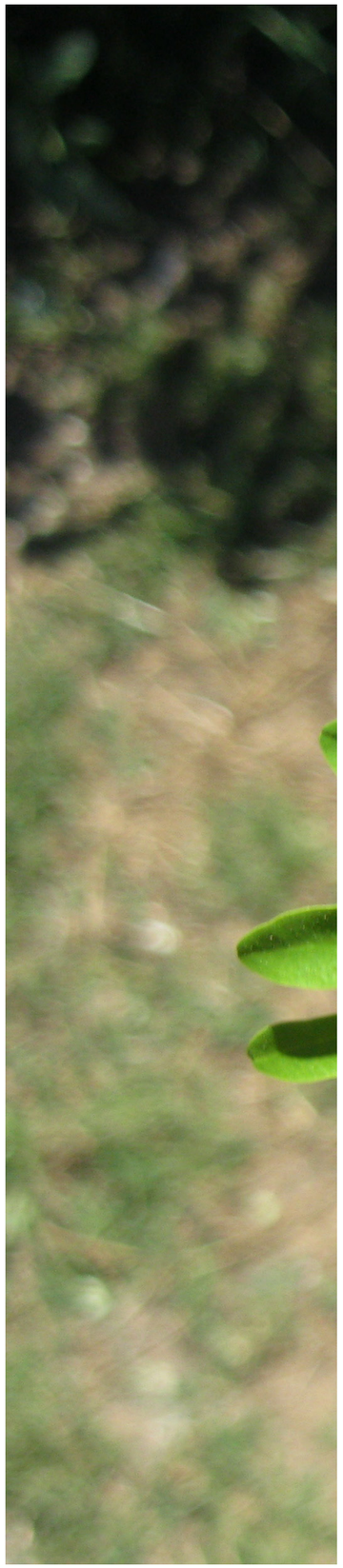
Source: *http://www.grain.org/article/entries/10-grains-of-delusion-golden-rice-seen-from-the-ground*

Golden Rice will also aggravate the ecological crisis caused by industrial agriculture. Since Golden Rice is part of the industrial agriculture package (also known as the seed-chemical package), it promotes monocultures, which further destroy biodiversity. Golden Rice will increase the use of synthetic nitrogen fertilisers, which are rupturing the planetary boundary of the nitrogen cycle.

http://www.stockholmresilience.org/21/research/research-programmes/planetary-boundaries/planetary-boundaries/about-the-research/the-nine-planetary-boundaries.html

India is already one of the largest importers of nitrogen fertilisers, and Golden Rice will only serve to increase this. Moreover, it will increase the use of water, intensifying the water crisis. *http://www.panna.org/issues/food-agriculture/industrial-agriculture*
It will contribute to climate change *http://www.ecoliteracy.org/essays/industrial-agriculture-agroecology-and-climate-change*
through increased green house gas emissions. And it will leave our farmers liable to higher input costs through dependence on chemicals and fees for proprietary technologies.

As a source of nutrition for the Global South, Golden Rice has no real benefits. But considering the precedents set by soya, corn, canola and cotton, introducing Golden Rice as a way for large companies to gain control over entire food cultures based on rice, makes perfect sense.



Golden Rice is A Trojan Horse for Corporate Control

Proponents of Golden Rice declare that it is a product of public research carried out through public funding. But in reality, the scientists involved are closely linked to the biotechnology corporations pushing royalty collection through patents.

Scientists Ingo Potrykus (Zurich) and Peter Beyer (Freiberg) are closely connected to the Biotechnology corporations for commercialisation of Golden Rice through patents.There are more than 70 patents linked to Golden Rice, despite it being promoted as a product made for the public by the public. Corporations controlling these patents include Bayer AG, Monsanto Co, Orynova BV and Zeneca Mogen BV. A letter written by Dr Portykus illustrates just how enmeshed the invention of Golden Rice and corporate interests always were. When questioned about his partnerships with corporations in an email exchange with RAFI/ETC Dr Portykus wrote, "Why did we need to involve a commercial partner? Because Golden Rice also needs a commercial basis to reach the urban poor. Why do we need a patent? Because only then we can ensure, that nobody interferes with our task. Zeneca (now Syngenta) had, therefore, legal rights on the Golden Rice. Why are you upset if in return Zeneca is trying to make profit from developing a commercial "Golden Rice", which even also will have benefits for the poor not directly linked to subsistence farmers? Could you not agree that it is neither fair nor wise to blame industry for working for profit? This is for what they are there."

The project leader on the Golden Rice project at the International Rice Research Institute is Dr Gerard Barry, was also involved with some of Monsanto's 'golden egg' patents and the man responsible for the company's toxic RoundUp resistant products. There is a clear revolving door between corporations and research institutions in which a handful of actors are driving a for-profit corporate venture. Giants including Monsanto and Syngenta sit in the driver's seat by controlling patents, *http://www.goldenrice.org/Content2-How/how9_IP.php* while cleverly spinning these initiatives as philanthropy. *http://www.agbioworld.org/biotech-info/topics/goldenrice/shand.html*

The alternative lies in women's hands and minds

On International Women's Day 8th March 2015, we the women of India and the world commit ourselves to reclaiming our seed, food, and knowledge sovereignty so that we can all enjoy healthy, safe, nutritious, tasty and diverse food. And through our food, we will reclaim our health and the health of the planet.

We will not allow a further degradation of our food systems and knowledge systems. We do not have to go down the road of replacing our biodiversity with GMO monocultures and our rich knowledge of food and nutrition with scientific and ethical fraud. We will not sacrifice our seed and food sovereignty for corporate control and profits.

We commit ourselves to:

1. Promote and evolve the use of our indigenous seeds, crops and foods to address the crisis of malnutrition and health. *http://seedfreedom.info*
2. Spread gardens of hope, diversity and nutrition everywhere: in schools, on rooftops, on balconies.
3. Spread nutritional literacy about our diverse foods , and food safety and biosafety awareness about toxics and GMOs.
4. Celebrate Mahila Anna Swaraj (food sovereignty in women's hands) at Navdanya's biodiversity farm in Doon Valley (27-29 March 2015) by strengthening alternatives that promote sustainability, justice and health.
5. Celebrate Mother Earth Day, 22nd April 2015 to liberate the Earth , our farms , our kitchens and our bodies from the burden of disease caused by toxics . Celebrate the connection between the health of the soil and the health of all beings on the planet during 2015 the United Nations' 'Year of Soils'.

As women, in all our vibrant diversity, we will make a paradigm shift from monocultures to diversity, from chemicals to organic, from reductionist and mechanistic science to ecological knowledge, from corporate control and monopolies to seed sovereignty, food sovereignty and knowledge sovereignty in women's hands and women's minds. We will grow alternatives to the ecological and health disaster of industrial agriculture and its new false promises of Golden Rice and GMO Bananas.

We will shape the future of food and nutrition through biodiversity in our hands and in our minds. We will take back our seeds, and we will take back our food.

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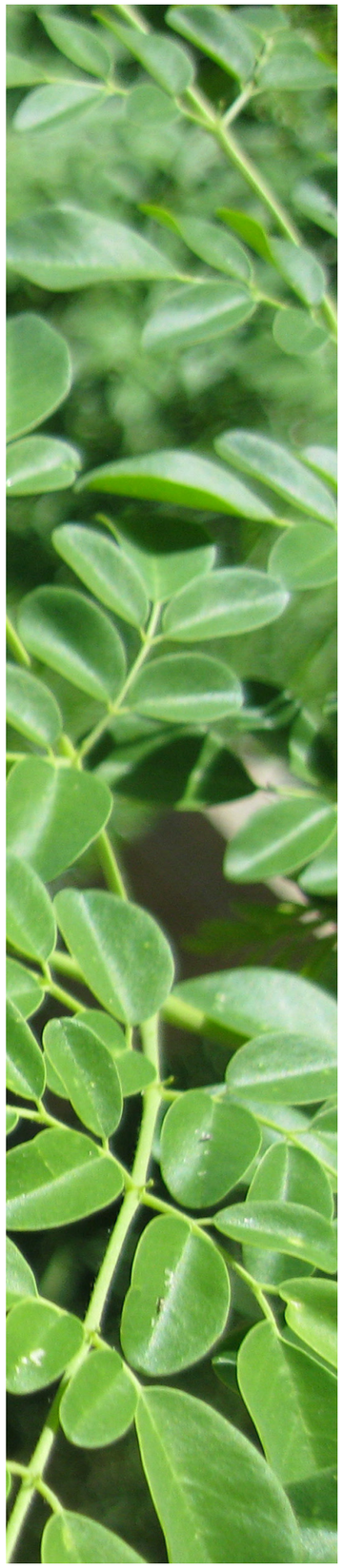
Read the Press Release:

Press Release — International Women's Day, 8th March 2015
http://seedfreedom.info/press-release-international-womens-day-8th-march-2015/



Moringa Leaves - Source: paulsober.wordpress.com

Bhoomi 2014 – October 2014

Navdanya's annual festival Bhoomi, based on 'Annapurna: Feeding the World' was held on 1st of October, 2014 at the India International Centre.

It was also the culmination of A-Z of Agroecology and Organic Food System which took place from 1st to 30th September at Navdanya's Biodiversity Conservation Farm. This year's edition of Bhoomi brought together the voices of people who are deeply committed to ensuring the Right to Food through praxis, reflection as well as cultural expression. They shared how agro-ecology and a reconnection to our food and its source can indeed Feed the World nurturing, affordable and relishing food.

Aptly named Abundant Earth, the dinner which followed the day's event was a tribute to Earth's carrying, nurturing and sustaining capacity as reflected by the diversity of our table.

Report and Photos
http://seedfreedom.info/bhoomi-2014-2/

Source: Navdanya

Navdanya

Source: Navdanya

Seed Thoughts – Portraits and thoughts from AZ course participants

Aditya, veterinary doctor and lifestyle organic farmer, Mumbai, India

"Trying to put a stamp of ownership on everything is a modus operandi of control, which is one of the most brutal aspects of human nature. Trying to control what people eat means reducing everything to purchasing what companies sell. It is an invasion of basic human rights and freedom.
If we as a people shared the struggle to liberate our motherland from colonial rule, if we engage in spiritual struggle to liberate our Aatmaa ["the self"] from material bondage, why can't we participate in the struggle to liberate our food supply and culture from the tentacles of greedy multinational corporations?"

Ami, organic food producer and processor/low food mile advocate, Gerangaemete, Australia

"I don't want to loose my freedom of choice.
I want to preserve as many traditional foods as I can.
Some people might think that heirloom varieties are new products, but they are actually much older and connected to our traditions than what you can find in supermarkets.
I want the freedom to grow what I want, and I want to be sure that what we consume is safe and clean. Buying local and keeping my food miles low is my passion."

Anthony, organic farmer, Chirang, Assam, India

"The three pillars of our food system are soil, seeds and human beings.
The soil is what we are standing on and what gives us life. If we feed the soil and give it the freedom to replenish itself, the soil will feed us. If we preserve seeds and allow farmers the right to share them, seeds will preserve our food and save our culture."

Ari, food documentarist, Vercelli, Italy

"Seeds are life, just like we are. This is why we cannot be seed 'owners' but we have to be seed 'keepers'.
We have a duty to preserve life and to make seeds available in the future, and we owe to ourselves the right to eat real food."

Ashish, urban peasant, Mumbai, India

"Seed Freedom is the basis of the elixir of life. The GMO culture is depleting life at its most fundamental level.
It is our duty to save and preserve the system of life that originates from seeds."

Athula, enviroment specialist working for sustainable land use, Central Hills, Sri Lanka

"Seeds are the source of life, and every living being - cluding humans - shares the right to live.
If we put barriers on seeds we violate the most fundamental right of all living beings.
Seed freedom should be ensured for all."

Britta, urban gardener, Nelson, New Zeland

"One thing I have learnt is that the concepts of Seed Freedom and Food Freedom are highly interdependent, they cannot be separated. Diverse seeds create diverse foods, and diversity in the foods we eat encourages new diversity into the seeds.
Diversity and variety are the essential characters of nature, an endless unfolding of potential. By protecting Seed and Food freedom we also celebrate the diversity of people, cultures and ideas around the world."

Eliza, student, New York, USA

"The free market capitalist paradigm brags that it has given us freedom of choice, but in reality it has given us only the illusion of choice – a narrow set of options contained within a limited framework that is dictated not by the people but by powerful corporations.
True freedom and true choice means freedom to choose alternatives to this paradigm – freedom to grow food organically, to save indigenous seeds, to eat food that nourishes our bodies, society and environment. Free market capitalism does not guarantee this freedom; this freedom is what we are fighting for."

Frans, quality manager, Gerangaemete, VIC, Australia

"Why am I into organic agriculture? Because I don't like chemicals.
Food should be enjoyed, and there is nothing more enjoyable than the taste of food you grow yourself."

Gamage, organic farmer/media producer, Malsiripura, Sri Lanka

"Rights and freedoms are only discussed during election periods, but those same rights and freedoms are violated every day.
I am talking about the right to eat healthy and nutritious food, to save indigenous seeds, to exchange technology. In Sri Lanka, a few big corporations are interfering with the whole agricultural sector and trying to steal these basic rights, with support from the government.
I want to make sure that our traditional seeds and technologies are available again in our culture, and I want to see Food Sovereignty back in the hands of small farmers."

Isaac, teacher and activist, Paga, Ghana, West Africa

"Back home, agriculture is our main livelihood.
Seeds are extremely important in sustaining people's livelihood, because you can't grow crops without seeds.
For generations farmers have been sharing seeds among themselves to support those who don't have any. The most common practice is to share seeds in exchange for labour.
Farmers' right to keep and control their own seeds is at the basis of our community livelihood. If we allow the market to take control, this culture of sharing will be lost completely.
We want our tradition to continue. Seeds should be in the hands of the farmer."

Javier, permacultor, founder of seed guardians network of Ecuador, author and speaker for the Food Heritage and Free Seeds Movement, Quito, Ecuador

"In order to make food production into big business, you have to make it artificially scarce. Modern civilization is based on hierarchical control over food production and the stratification of society. This way of civilization will lead to our extinction.
We need to change it fast, and we have the tools to do it in our hands: agroecology, local economies, appropriate technologies, real democracy and equality. Food is the most transformative force for humanity."

Jodi, course facilitator and mentor/organic value chain round table - Canada

"Working with the international cohort and Navdanya staff and Fellows for the 2014 A to Z course was a highlight of my life- I learned as much as I mentored. Vandana Shiva and her team at Navdanya have created an incredible opportunity to expand networks, gain deeper understanding and commitment, and accelerate one's capacity to engage in one's own work for earth democracy and seed freedom no matter what one's area of work towards social and ecological justice"

Kartik, soul turtle, Chennai, India

"A seed represents the potential of a new life. Not just for the plant, but for all of human kind.
We need to recognize that by destroying indigenous seeds we are in effect destroying a way of life."

Mahadev, free spirit, Bangalore, India

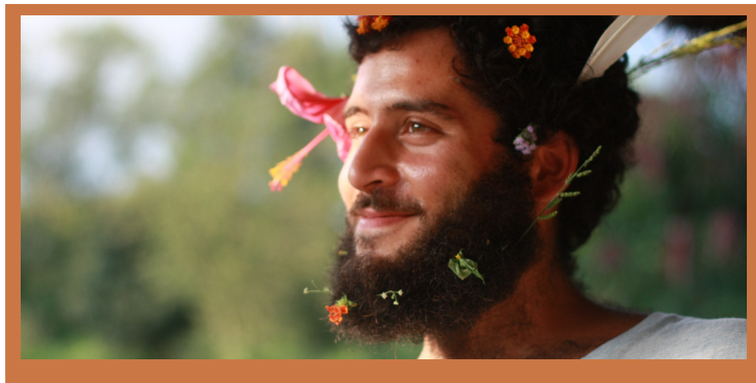
"When we loose touch with Nature, we loose touch with Humanity.
Whatever we do, it should be enriching the Earth's resources and the life around us."

Mahan, organic farmer, Assam, India

"Seed is Brahma [God].
Conserving seeds through generations is a fundamental right of the farmer.
Trying to break this fundamental right is a violence against God and against Nature."

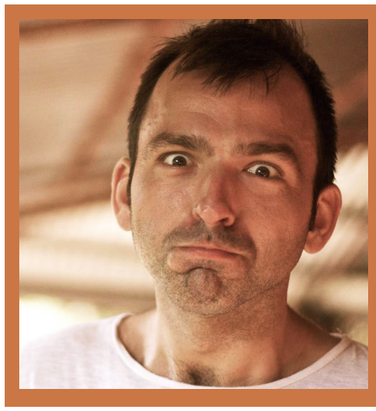
Mala, spiritual seeker, Mumbai, India

"In India we say that taste is everything.
But the taste of the food I ate when I was growing up is not there anymore. The sanskrit word Rasa has three meanings: "taste", "emotion" and "essence of life". When we loose the taste of our food we are loosing our emotions and our spirit at the same time.
I think that the decline in the quality of our lives is strictly interconnected with a decline in the quality of our food. Now I understand that it all comes down to the mutual relationships between seed, soil, food and ourselves."



Max, muse-ecologist, Toronto, Canada

"Seed freedom means diversity.
It is Nature's freedom to express itself however it wants to. It is important because monocultures are BORING. Beauty is an abundance of difference.
When life is boring, what's the point?"



Michael, rural livelihood missionary, Washington DC, USA

"I believe that seed and food sovereignty are rights of the highest order for all of us, and they should be recognized as flowing from our freedom of religion. If we disconnect from these rights we will have no hope to develop our spirituality as human beings, and we'll be alienated from creation instead of having the chance to reunite with it.

If we are denied seed and food sovereignty, our freedom as human beings and our privilege to be earthlings are denied too."

Nirod, organic farmer, Sunitpur, Assam, India

"In Assam farmers used to preserve seeds, but now they are becoming dependent on the market, because they are told that hybrid varieties and chemical fertilizers will increase their production.
As small farmers, we save seeds to preserve our independence.
By being free from chemicals, we are saving our traditional food system, the health of our environment and the health in our own lives.

Chemicals are a threat to life."

Poorvi, spiritual and natural farmer, Hyderabad, India

"I feel like a mother who has rights and responsibilities over her own baby. In the same way a farmer has rights and responsibilities over seeds and their evolution.
I think of seeds as movies, which are the depiction of a society at a certain time. Every seed holds a coded message that depicts a state of evolution.

Seed exchange is like a cultural exchange: it creates stability through diversity."

Rowan, student, Kichener Waterloo, Canada

"Food freedom means the right to choose your food based on cultural and health needs, without being hindered by political or legal reasons.

It is really a matter of common sense.
Do you have the right to drive a car that has functioning breaks instead of one that has no breaks?
In the same way everyone has the right to consume food that is safe and nutritious, and everyone has the right to have an option."

Saidi, organic guarantee system officer, Morogoro, Tanzania

"In Tanzania, farmers are increasingly dependent on buying seeds from the market. In most places people have been brainwashed into buying only hybrids.

I want to research on the policies and the existing farmer networks who are engaged in seed saving, know what challenges they are facing and help them to better connect with each other.

Food sovereignty means rejecting monocultures and embracing variety."

Sanjukta, wannabe holistic nutritionist, Melbourne, Australia

"Food is a basic right to all living beings, just like air and water. Chemicals-based farming is not only harmful to human beings, it affects the whole system of biodiversity which all forms of life depend on.

We need governments to stop subsidising industrial agriculture so that organic food is not only available to elites who can afford to pay extra money, but to everyone."

Shaani, wannabe social farmer, Wolfville, Canada

"I've been thinking a lot about this quote:
'Grow where you are planted'.
I think it applies to both food and people.

Nothing should stop you from being able to grow your own food locally. At the same time, you should always try to put yourself in places and situations that allow you to grow."

Sudha, student, Delhi, India

"Food and Seed Sovereignty are of extreme importance to me because I'm the person who takes care of my family, and I have the right to know where my food comes from. The whole family and community at large depend on the person who cooks food, and everyone has a right to live a happy and healthy life to pass on to the next generation. A healthy life means a healthy evolution".

Taonga, organic farmer, Gutu, Zimbawe

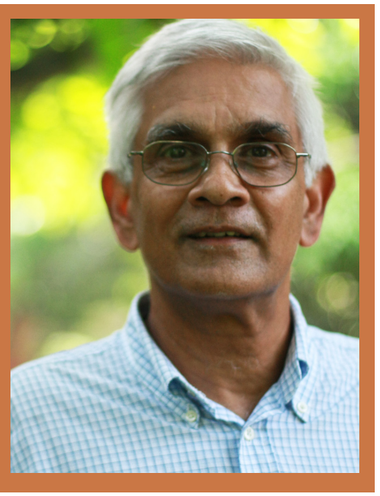
"God gave us hands to work, not as a chair to sit on. Instead of complaining or begging for help, one should start from his own hands.Organic agriculture is empowering because it lets you create your own freedom. It is the power of being healthy, and the power of knowledge to deal with a changing climate."

Tony, formerly in finance/transitioning to organic farming, Toronto, Canada

"I developed an interest in Organic Farming some years ago while reading a UN report on organic practices in Kenya, where I was born. Farmers there were achieveing far higher yields, and many of them had switched back from cash crops to feeding their own family and community.

After my experience at Navdanya I still don't know whether I will become an expert on Organic Farming or not. But I leave this place convinced that Organic Farming is the way forward for the future of mankind.

My message to corporations is: 'People matter. People's health matters. And these things come before your profits. Stop poisoning our world and its people.'"



Vishal, free bird, Shimoga, India

"Seed equals Life.
Trying to modify the essence of life can be a harmful thing.
Even the very people who engineer GMOs are not aware of the consequences of this process.
I think if seeds could talk they would say: "Live and let live".

Source: Navdanya

Indonesia – Mantasa

Seed Freedom report from Indonesia

Mantasa is a non-profit organization works on edible wild plants for food and nutrition sovereignty. In human history, 40-100,000 plant species have been regularly used for foods, fibres, industrial, cultural and medicinal purposes. At least 7,000 cultivated species are in use today around the world. Over the last five hundred years, with increased contacts between disparate populations and the development of a global trading systems, 30 or so crop speciec have become intensively and widely used and are now the basis of much of the world's agriculture. These commodity crops have been the focus of attention of markets and scientific research world-wide.
As a consequence, some species have been replaced or fallen into disuse, while others have remained important in their centres of origin or secondary centres of diversity, but largely ignored by commerce and science. Those species are the ones that called “underutilized species”, “wild foods”, “edible wild plants”, “hunger foods” or “food for the poors”.

We have been working since 2009, and since then we have identified more than 1,000 species of edible wild plants all over Indonesia including their social, spiritual and cultural significance for local people. We divide our activities into three main activities, they are campaign, education and research and we work mostly with women in village because we believe women hold important role in creating food sovereignty. In education, we build discussion groups where women can share and exchange knowledge and skill. In research, we do research on nutritional value of edible wild plants as well as research on their social and cultural value.
In campaign, we have festivals, workshops, seminars and other activities to campaign the use of edible wild plants.

When we talk about edible wild plants we also talk about many other issues. We talk about the loss of biodiversity, about the richness of traditional knowledge based on these plants, about resilience of local people on facing climate problems, about access to food and many other things. After five years working on food sovereignty issue, we celebrate it by inviting Dr. Vandana Shiva to Indonesia on a campaign called Our Seeds, Our Future: Strengthening Indonesia's Food Sovereignty.
We hope people can see the connection of different issues and can think that a simple act is needed to help solve problems.

A few of nutritious wild plants found in farmland. Commonly, they are considered as weeds by people.

Our Seeds, Our Future: Strengthening Indonesia's Food Sovereignty

Between 2005 and 2010 in Kediri and Nganjuk regencies of Java, a number of Indonesian farmers were prosecuted and jailed for saving and producing their own seeds. This ruling was overturned in 2013 after a judicial review by the Indonesian Constitutional Court found the prosecutions unconstitutional and ruled that Indonesian farmers, especially Indonesian small farmers, should have the legal right to produce and to exchange their own seeds. Our Seeds, Our Future, a project undertaken in 2014 by Mantasa with local and international partners, has sought to highlight the threat to Indonesia's seed freedom posed by the prosecution of farmers for producing and exchanging seeds and to celebrate and protect this important victory for Indonesia's seed freedom.

Beginning in 2014, Mantasa, along with 23 partner organisations, held events in August in Jakarta, Indonesia's capital, as well as in Kediri, East Java, where the farmers had been prosecuted and jailed, and in Bali. (See: *http://mantasa.org/our-seeds-our-future-strengthening-indonesias-food-sovereignty/*) These included an Indonesian lecture tour by Dr Vandana Shiva beginning with a main address at Universitas Indonesia in Jakarta hosted by KEHATI, an Indonesian biodiversity conservation organisation, and the Body Shop Indonesia. Dr Shiva also met with Indonesian activists in a Q and A hosted by WAHLI, Indonesian Friends of the Earth. A one hour television special 'Face2Face with Vandana Shiva', produced at our events by one of Indonesia's most respected journalists Desi Anwar, was broadcast in December 2014 and can be watched online (See: *https://www.youtube.com/watch?v=hS6Y-dkTC-8*).
Important to Our Seeds, Our Future's work was the building of strategic partnerships with organizations and individuals who can help enable and spread awareness and practices of seed freedom. In October 2014 we held a workshop on seed sovereignty at the Ubud Writers and Readers Festival in Bali, a lively regional form for debate and discussion.

Dr Shiva's visit to Indonesia helped shine a light on the importance of securing Indonesia's seed freedom and resulted in several ongoing initiatives, including the launch of several ongoing seed saving initiatives in Kediri “Lumbung Winih” and in Bali “Benih Bali”. Dr Shiva also visited and gave a speech to students and community at the Bali Green School, voted the greenest school on earth in 2012, where Bali Green School students have also taken an initiative, inspired by Dr Shiva's visit, to start saving seeds. Mantasa's own work since Dr Shiva's visit has included a joint campaign with Navdanya International against GMO banana biopiracy “No GMO Banana Republic” and a new awareness raising campaign on GMO soy consumption in Indonesia, with a new seed saving project “Tempeh Nation” to save Indonesia's disappearing non-GMO soy biodiversity and farming methods.

Dinner and discussion with Indonesia National Commission of Women

The launching of Our Seeds, Our Future in August 2014 was timely as the election of the new Indonesian President Joko Widodo focused many people's attention on what the new administration's environmental policies might be. Our Seeds, Our Future will continue in 2015 by leading an Indonesian delegation to Navdanya's research farm in India for one month training in September, with follow up events held in Bali, to forge ongoing links between Indonesia and India and to help create a group of change agents who can help realise an ecological biodiversity-based agriculture shift in Indonesia. (See: https://thepollinationproject.org/grants-awarded/hayu-patria-adam-breasley-our-seeds-our-future-a-journey-of-food-sovereignty-impact-grant-2014/)

In 2015 with our events in India and Bali we hope to link up movements from Hawaii to Bhutan for Making seed mandala from different kind of seeds, Ubud Writers and Readers Festival, 5 October 2014 the urgent transition to ecological agricultural systems based on biodiversity that the UN now agrees are needed to cool and feed the planet.

For both Our Seeds, Our Future 2014 and Our Seeds, Our Future 2015 we received and would like to acknowledge kind support in 'seed money' from ethical philanthropists the Pollination Project, who give out 1000USD to small projects everday of the year (we encourage organizations to apply! https://thepollinationproject.org/), and we would also like to thank Dr Vandana Shiva and Navdanya International for their kind support of our work. A number of ongoing initiatives for seed freedom that were launched through Our Seeds, Our Future are listed below.

Making seed mandala from different kind of seeds, Ubud Writers and Readers Festival, 5 October 2014

Lumbung Winih and its seed collections - Photo credit: KIBAR Kediri

Lumbung Winih (Seed Barn) KIBAR Kediri

This initiative begun when our local partners in Kediri, KIBAR, began giving advocacy to maize seed farmers in Kediri area in 2005. KIBAR then began developing more varieties of seeds as well as the quantity. Dr Vandana Shiva was invited to Kediri to share valuable experiences to Javanese activists and farmers of organic agriculture practices and local food movements . A garden was launched in December 2014 by conducting seed collection, seed documentation, and seed saving and distribution. During its development, KIBAR have been planting and developing seed for various local foods, which now has reached 60 varieties, consisting of 16 grains and starches, 18 vegetables, 12 fruits, 5 protein crops, 5 herbs and spices, and 4 drinks. The planting done in rural area applies animal and green manure as fertilizers by keeping chickens and sheep and collecting fallen leaves. In urban area, KIBAR supporters plant the seed by practicing verticulture and hydroponic in organic system.

On September 9, 2014, farmers in Kwadungan Village, where the event with Vandana Shiva had taken place in Kediri, have established Dhahasatata Organic Community (DOC). Perayaan Pangan Desa (Village Food Festival) which has encouraged the villagers to implement organic agriculture. They before were unfamiliar with organic matters, but now they prove that they can make it by strong motivation to live healthy and usefully. DOC activities consist of the cultivation of black local rice using SRI, fish farming, chicken & rabbit raising, and red ginger planting using organic method.

Benih Bali

Dr. Vandana Shiva's visit to Bali August 20-23 included fundraising dinner on Aug 21 and a half day seminar on Aug 22 locally organized by Slow Food Bali, with support from IDEP Foundation, which covered the traditional Balinese subak rice irrigation and water-sharing system. The Bali events also included the announcement of plan to initiate BENIH BALI, a local organic, open pollinated seed (OOP) program. On October 16 (UN World Food Day) the Official Launch of BENIH BALI was held. The launch event included representatives from Slow Food Bali, IDEP Foundation, Yayasan Mantasa, Permablitz Bali, and the Bali Green School. The BENIH BALI website was also launched: *www.benihbali.org*

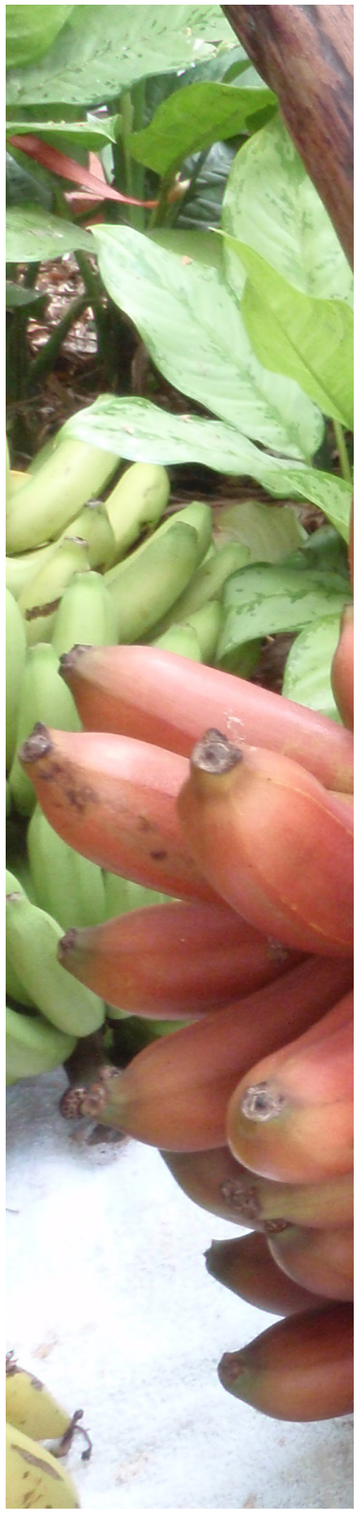
From October 2014 onwards, the following programs have been set up by BENIH BALI:
Initial BENIH BALI Seed Library setup, based on a collection of local OOP seed varieties, along with successfully adapted or recently imported OOP seeds.
Initial free distribution program of seeds to small scale farmers and home garden enthusiasts.
"Forgotten Grains" Program initiated, focusing on local sorghum, millet and amaranth, for cultivation in Bali. Three varieties of OOP sorghum from Flores (from eastern Indonesia), along with one variety of imported OOP white sweet sorghum have been planted on a small research scale in Bali, for comparative studies. Locally grown OOP sorghum and amaranth have been distributed for free to several small scale farmers and home garden enthusiasts for local productivity evaluation.

"The Story of Sorghum" Event is scheduled on Feb 28, in conjunction with Slow Food Bali. Maria Loretta (Ashoka Changemaker and respected activist) and Mary Jane Edleson (Program Coordinator for BENIH BALI, and Convivium Leader for Slow Food Bali) to present the sorghum program, including the history, culture, cultivation, nutritional value, and culinary opportunities of local sorghum. A special educational program followed by a lunch featuring a variety of sorghum recipes to be offered to Slow Food members and friends. A separate program to be presented at Udayana University, with an additional program to a farmer's group in Karangasem (northeast Bali).

BENIH BALI Seed Saving Workshops (with sessions in English and Indonesian) starting in March 2015, in conjunction with Slow Food Bali, IDEP Foundation, and Udayana University, to be repeated on a regular basis.

"Grow Your Own Dinner" Program established, in conjunction with Slow Food Bali. BENIH BALI to setup Seed Stewardship program within the program, encouraging a variety of small scale farmers to become seed "stewards" of a specific seed (or more).

The launch of BENIH BALI, Ubud, 16 October 2014



NO GMO Banana Republic

We do not usually think of bananas as having seeds, but that is only because the commercial banana monocultures of the Cavendish variety have had the seeds largely bred out. The centre of origin of banana biodiversity is the region through Indonesia, Melanesia and Mirconesia, where there are many seeded varieties as well as many nutritious local varieties. It is this biodiversity which those precarious commercial banana monocultures rely on for their continued existence. The same biodiversity has also become a target for bioprospectors like Dr James Dale of Australia's QUT who want to use GMOs to enter into commercial banana production.

After discovering that the GMO super-banana from QUT that is being funded by the Bill and Melinda Gates Foundation was based on biopiracy of traditional nutritious Fe'i bananas from Melanesia and Mirconesia, we have worked together with Navdanya International to raise awareness of this blatant act of cultural theft. The 'super-banana's high-vitamin A trait was bio-pirated from a Papua New Guinean banana.
The traditional knowledge of Fe'i bananas as a source of vitamin A comes from the State of Pohnpei in Federated States of Mirconesia which has a Fe'i banana variety that is known as the 'Karat' banana for this reason, which is featured on the state emblem and stamps. Dr Dale's disease-resistance genes with which the GMO banana project hopes to come to the rescue of commercial banana monocultures were taken from banana varieties from Maluku in Indonesia.

Our No GMO Banana Republic campaign was launched simultaneously in Bali and New Delhi on Gandhi's birthday anniversary on October 2, 2014 with a pledge of non-cooperation with the GMO 'super-banana' and its basis in biopiracy. We have used various literary references in our campaign to illustrate the multiple dimensions of the problem, as biopiracy is also a cultural and moral issue, including Chilean poet Pablo Neruda's poem La United Fruit Co and Columbian Gabriel Garcia Marquez' 100 Years of Solitude, which contains a fictionalised version of the 1928 Columbian banana massacre.
We also referred to artist Paul Gauguin's paintings of Tahiti, since they depict the Fe'i banana variety that has been biopirated to make the GMO 'super-banana'.

We also were kindly donated a theme song for the campaign by Charlie Mgee from the Australian permaculture music band Formidable Vegetable Sound System, who together with the participants of the BHOOMI Festival in Delhi, performing as Los Bananos, launched the campaign song "We Don't Want No Pirate Bananas'. The pirate banana song has been translated into English, Spanish, Bahasa Indonesia and Swahili. We invite you to help translate the song into your own languages.

Source: 30bananasaday.com

Seed Freedom Presents: We Don't Want No Pirate Banana

with Charlie Mgee from the Formidable Vegetable Sound System
http://formidablevegetable.com.au

Lyrics:

- English

Yes! we have many Bananas,
we have many bananas today.
We don't want your Pirate Bananas.
Take your pirate bananas away

- Spanish

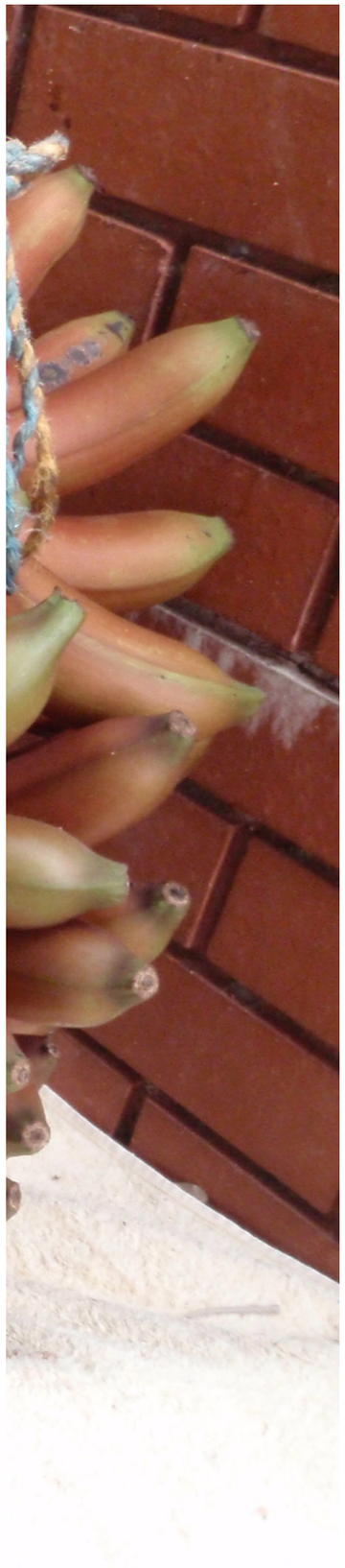
¡No queremos piratas bananos!
¡Piratas Fuera de aqui!
¡No queremos piratas bananos!
¡Piratas Fuera de aqui!

- Swahili

Tuna aina nyingi za ndizi
Tuzilinde na kuzipanda
Hatutaki zilizobadilishwa nasaba
Tuna uhuru wa kuchagua

- Indonesian

Ya! Kami punya banyak pisang
Banyak pisang hari ini
Kami tidak mau pisang bajakanmu
Bawa pisang bajakanmu pergi



Cultural performance in Kediri, East Java, celebrating local farmers' seed freedom win. Photo: Kartikey Shiva.

Tempeh Nation

Indonesia for centuries has been the land of tempeh, the nutty and nutritious moulded soybean cake. In the mid-1990s Indonesia was self-sufficient in soy production and 87 per cent of soybeans were farmer's own saved seeds. However, unknown to most Indonesians is the fact that in the last decades, Indonesia's indigenous soy biodiversity has been largely replaced by GMO soybean imports which now make up almost all of the soy consumed in Indonesia, where soy in the form of tempeh and tofu is a staple food for millions of people.

In 2012 CNN Environment Hero Robin Lim of natural birthing clinic Bumi Sehat (Healthy Earth) in Bali questioned if the increase in placental and umbilical birth defects she was observing in the mothers she is working with was the result of Indonesians' consumption of GMO soy.
Hers has been almost a lone voice in Indonesia as the introduction and vast spread of GMO soy in Indonesia has happened virtually without any public debate or even awareness. This is something we are now working to change, working with local partners in Bali and Java, together with Mothers Against Genetic Engineering (MADGE) from Australia, who are concerned about the impact of GMOs and pesticides on mothers and children.

In addition to an awareness campaign on GMO soy consumption in Indonesia, we are also working with local partners to save and conserve the disappearing non-GMO Indonesian soybean varieties and to bring back non-GMO soybean farming across the world's largest archipelago.

Edible wild plants community garden

In 2015, Mantasa is committed to make several edible wild plants community gardens in different area in Indonesia.
The first one was established recently in Mendira village, Jombang, East Java. We have planted over 40 plant species and more than 200 seedlings and it will continue to grow. The plants we grow have cultural significance for local people and they are getting hard to obtain, so making a garden is our way to conserve plants and knowledges. The next garden we will make would be in Problinggo, East Java and Flores.

Making edible wild plants garden in Mendira village
Photo credit: Mantasa

An open letter to the Prime Minister of Thailand

BioThai Foundation, 30 October 2014

Source: *http://seedfreedom.info/an-open-letter-to-the-prime-minister-of-thailand/*

An open letter to the Prime Minister of Thailand from concerned scientists and academics around the world regarding the open-field testing and commercialisation of genetically modified crops in Thailand.

A recent attempt by the Thai government to consider allowing for an open-field testing and commercialisation of genetically modified (GM) seeds raises concerns from the Thai National Farmer Council and over thirteen civil society groups, including the Alternative Agriculture Network, the Confederation of Consumer Organisation, Thailand Organic Trade Association, Green Peace Southeast Asia, BioThai foundation, and many others. On the 30th of October 2014, this alliance of civil society groups submitted a letter to the Prime Minister of Thailand urging him to:

1. *stop the government from permitting open-field testing of GM seeds until Thailand passes a Biosafety law which enforces accountability in the case of genetic contamination;*
2. *establish a national committee under the Thai National Economic and Social Development Board (NESDB) to develop a national strategy to promote sustainable agriculture and organic farming, involving representatives from stakeholders, especially farmer networks, grass-root and non-profit organisations, as well as related parties in the private sector. On the same day farmer groups and their allies also submitted letters voicing the same concerns and demands to Provincial Governors in eleven other Provinces across the country: Chiang Mai, Mahasarakham, Khon Kaen, Yasothon, Surin, Nakhon Sawan, Supanburi, Chachoengsao, Chantaburi, Songkhla, and Pattalung.*

As concerned scientists and academics who specialise in the areas of biotechnology, agriculture, food, the environment and development, we support the campaign and urge the Thai government to consider accepting the two demands. Existing academic literature suggests that while it is unproven that genetically modified seeds are higher yielding, there are causes to be extremely concerned by genetically modified crops' negative ecological, social, health, and economic impact. Under the current intellectual property rights system which allows for monopoly control over genetically modified seeds, farmers may be forced to pay inflated-prices for these patent seeds, not to mention that Thailand risks losing export markets as there is a growing global consumer trend which rejects GM crops. The threat of negative environmental impact and risks of contamination also suggest that genetically modified crops will undermine Thailand's potential to further develop sustainable agricultural practices such as organic farming.

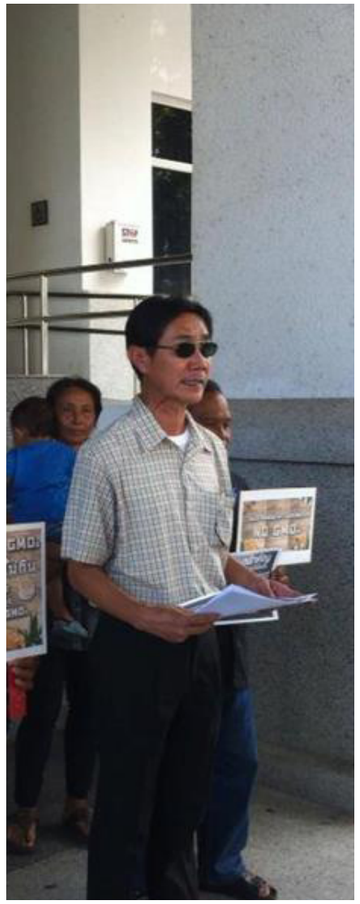
Source: Greenpeace Thailand

Since Thailand is a net-exporter of food and an extensive source of biodiversity, possible negative impact from the introduction of GM seeds is a serious concern shared by the global community.
We strongly urge the Thai government to withhold its endorsement of GM seeds, and to consider supporting other promising technologies such as marker-assisted plant breeding and agro-ecological production methods. Under the current global context of climate change and food security concerns, research and expansion of ecologically sustainable production should be encouraged by the state.
Yours sincerely,

- *Dr. Vandana Shiva: physicist, ecologist, winner of the Right Livelihood Award in 1993, founder of the Research Foundation for Science, Technology and Ecology and Navdanya*
- *Dr. Tony Weis: Associate Professor, Department of Geography, The University of Western Ontario, Canada, as well as author of The Global Food Economy: The Battle for the Future of Farming (Zed, 2007)*
- *Dr. Michel Pimbert: Director of the Centre for Agroecology, Water and Resilience, (CAWR), Coventry University, U*

Source: Greenpeace Thailand

- *Dr. Michael Antoniou: Head of the Gene Expression and Therapy Group, Faculty of Life Sciences, UK*
- *Dr. John Fagan: Professor of Molecular Biology, Department of Physiology and Health, Maharishi University of Management, Iowa, USA*
- *Dr. Carlo Leifert: Professor for Ecological Agriculture, Newcastle University, and Academic Director of Stockbridge Technology Centre, Cawood, Selby, UK*
- *Dr. Vyvyan Howard: Emeritus Professor of Nano Systems Biology, Centre for Molecular Bioscience, University of Ulster and Managing Director of QuanToxPath Ltd, Coleraine, UK*
- *Dr. Nora McKeon: Lecturer at Rome Three University, Italy. She ormerly held a position in the FAO, author of various books such asStrengthening Dialogue with People's Movements: UN experience with small farmer platforms and Indigenous Peoples (with Carol Kalafatic, UN NGLS 2009)*
- *Professor Peter Newell: Professor of International Relations at the University of Sussex, Director of Research and Knowledge Exchange (School of Global Studies), UK*
- *Dr. Thierry Vrain: former genetic engineer and soil biologist with Agriculture Canada and former supporter of GM crops who now promotes awareness of their possible danger*
- *Dr. Steffen Boehm: Director of the Essex Sustainability Institute, University of Essex, UK*



Source: Greenpeace Thailand

Source: Greenpeace Thailand

- *Dr. Robin Broad: Professor of International Development, School of International Service, American University, Washington, DC, USA*
- *Dr. Philip McMichael: Leading scholar in the field of global agricultural and food system and chair of the department of development sociology, College of Agriculture and Life Sciences, Cornell University, USA*
- *Lim Li Ching: Third World Network and Senior Fellow with the Oakland Institute, USA. Co-editor of the book Biosafety First and lead author in the East and South Asia and the Pacific (ESAP) sub-global report of the International Assessment on Agricultural Science, Technology and Knowledge for Development (IAASTD) (2009)*
- *Dr. Megan Blake: senior lecturer and director of the MA in Food Security and Food Justice programme, department of geography, University of Sheffield, UK*
- *Dr. Peter Drahos : Professor in Law and the Director of the Centre for the Governance of Knowledge and Development in the Regulatory Institutions Network (RegNet), College of Asia and the Pacific, at the Australian National University, Canberra. He also holds a chair in Intellectual Property at Queen Mary, University of London.*
- *Dr. Tushar Chakraborty : Member of Governing Body & EC, State Council of Biotechnolgy , Government of West Bengal and Principal Scientist & Molecular Geneticist, CSIR-Indian Institute of Chemical Biology, Kolkata, India*
- *Professor Terje Traavik : Special Consultant, GenØk-Centre for Biosafety, Norway and Professor Emeritus of Gene Ecology and of Virology, Faculty of Health Sciences, UiT – the Arctic University of Norway*
- *Dr. Frøydis Gillund : Researcher, GenØk – Centre for Biosafety, Norway*
- *Dr. Ben Richardson : Associate Professor in International Political Economy, Department of Politics and International Studies, University of Warwick, and author of Sugar: Refined Power in a Global Regime (Basingstoke: Palgrave Macmillan, 2009)*
- *Dr. Raj Patel, research professor at the Lyndon B Johnson School of Public Affairs at the University of Texas at Austin, USA, and author of various books including Stuffed and Starved: Markets, Power and the Hidden Battle for the World's Food System*
- *Prof. Dr. Joan Martinez-Alier : Professor of Economics and researcher at ICTA, Universitat Autonoma de Barcelona, Spain and author of Ecological Economics: Energy, Environment and Society (1990)*

* The names are chronologically ordered and the most updated list of names can be found at *www.biothai.org. It* should also be noted that the views expressed by these individuals do not necessarily reflect the views of their institutional affiliations.

Source: Greenpeace Thailand

Paul at seed event

Australia– Byron Hinterland Seed Savers

People's initiatives for seed conservation, responses to defend seed

BYRON HINTERLAND SEED SAVERS:
Local Seed Saving Group
Rasa Dover - Paul Crebar

Since seed companies became established in Australia (approximately 1887) the hybridizing of seeds has become more common and many of our old heirloom varieties have been discontinued and lost as a reliance on modern day supermarkets and corporate seeds grew.

This reliance has resulted in only selected varieties being sold and has historically led to a reduction of seed keeping and sharing throughout communities until the more recent times with the surging seed saving movement. This reliance that continues today is threatening the bio-diversity necessary for our future food security, and is prevalent throughout any modern day supermarket where food diversity is extremely limited and people's knowledge of food becoming alarmingly narrow.

This has now greedily grown to global corporations such as Monsanto and Nestle (to name a few) attempting to patent seeds that are not seed producing, sell them and know that more seed must be bought with each new season thus increasing their profits. This increases the costs of growing food for farmers and gardeners, which ends up costing the consumer more to eat which is selfish and negligent behaviour worthy of being charged as crimes against humanity. Breaking the natural life cycle in the name of profit is a reflection of the lack of integrity that such organisations hold and awareness of these actions must be known throughout the wider community.

It must be noted that in Australia, particular disgust is currently being expressed to the corporation Monsanto, who are viewed throughout communities with deep negativity for the crime's they are committing against humanity. It is becoming common knowledge of their actions of legal harrassment to farmers in rural India that has led to a huge amount of suicides. People are increasingly becoming aware that they are responsible for the crime of suicide seeds (sterile and non-seed producing), genetically engineered food producing seeds which are dentrimental to human health, and patenting seeds that are the birthright of human beings all over the world. There is an increasing awareness of genetically modified food and although there is lots more support needed, groups are forming to push for all GM Food to be labelled accordingly. Protest marches against Monsanto are common and growing in regularity.

This corprotisation of seeds has led to less saving of seeds and less diversity available for future generations which in opposition those currently joining the seed saving movement are now actively working against.

One of these groups the Byron Hinterland Seed Savers was founded in 1990 by Rasa Dover at her property in Goonengerry, N.S.W. Asked by the founders of the Seed Savers Network, Jude and Michel Fanton, Rasa established the local seed saving network, which today stands as one of over 100 currently operating in Australia under Michel and Jude's 'Seed Savers Network'. This provided Jude and Michel time to concentrate their efforts on creating documentaries and educational resources to assist farmers and gardners throughout the world to save seed and become aware of the danger posed from corporations selling seeds and our potential reliance on these corporations. This led most notably to concentrated efforts in Japan and Pacific Islands with the release of the film 'Our Seeds' which has inspired seed savers worldwide to keep this age old tradition of seed saving and sharing thriving. Today the movement is growing thanks to this message that is being spread far and wide across global communities.

Understanding the consequences of inaction regarding seed saving, Rasa honourably accepted the opportunity to establish a seed saving network in the area and became a passionate seed saver overnight. Her garden has since been a seed saving and sharing garden with multiple events held and seeds, cutting and plants shared throughout the community on a regular basis. She operates a thriving roadside stall which sells seeds and plants and this attracts many gardeners eager to learn to establish a home garden for themselves. Rasa's passion leads her towards sharing knowledge with visitors and the community about seed saving and optimal conditions to grow the plants she shares. This has seen many perennials become abundant throughout gardens within the community.

Paul Crebar joined Byron Hinterland Seed Savers as a co-leader after visiting Rasa's garden in March 2013. Paul has taken the responsibility of developing promotional communications and developing local partnerships with other aligned organisations who can assist to grow food security in the region. Paul further assists in expanding the scope of the local network with his passion for biodiversity by attracting families and youth through a range of activities and events in the community, including workshops for schools.

The group's drive is aimed at highlighting the precarious position that our seeds are in caused by a reliance on corporation seeds and the simple actions that can ensure future seed diversity. This will minimise any associated future food security problems that come with handing the responsibility of food production over to profit driven corporations. We realize the importance of retaining as many of the varieties of seeds that still exist, especially food seeds and getting these growing in as many gardens as possible. With the loss of variety in plants and seeds globally reaching an alarming rate importance is placed on the know-how and importance of saving seeds and planting locally adapted food sources in the community for the benefit of future generations.

Byron Hinterland Seed Savers

Rasa & Wheelbarrow «

SeedSavers_featured1 »

Paul & the children »

Seasonal events are held in different and diverse gardens where people of all ages are encouraged to bring plants, cuttings, tubors, and especially their extra seeds to freely share among those in the community. Extra attention is put on older thriving varieties that have become accustomed to the local environment and weather patterns. Included in these events in a communal picnic and short talks about the global seed saving movement with respects and acknowledgement paid to the work of global citizens such as Vandana Shiva, Helena Norberg Hodge and Jeffrey Smith to name a few. These actions we believe are leading to food security within our local community with increased biodiversity and more food grown in home gardens. These events are sharing knowledge and awareness about the actions both negative and positive happening on this planet so as a community we can act together in the interest of ourselves and the future inhabitants of this land.

Further promotion is undertaken via our Facebook page; Byron Hinterland Seed Savers which provides photo's and inspiration on seed saving, growing, drying, picking and storing of seeds. It further allows a place to form local community connections and inform the community about upcoming events. Byron Hinterland Seed Savers is just one group operating in the Byron Bay Shire (NSW) where there is a renaissance of people power pushing for local food production and security. There is a growing interest in biodynamics, organics, food diversity, sustainability, local production and local sourcing, and seed saving. More people are becoming aware that now is the time to act so that future generations of our community have control of an abundant and healthy food supply within their community. The aware people of the community do not want to form a reliance on negligent corporations who disregard both human and planet health in their profit driven actions based around seed and food production.

Looking forward the group hope to set up an online seed exchange allowing access and easability to save and share seed varieties throughout Australia. This in turn has the potential to create an abundance of local food throughout communities in Australia wherever they may be. This in turn allows people to have the basic right of access to clean, real and nutritious food not tarnished by the experiments and greed of corporate organisations.

Byron Hinterland Seed Savers
Home Garden: 186 Repentance Creek Road, Goonengerry NSW 2482 Australia.

Tel.: 02 6684 9498

Rasa Dover
Paul Crebar

Australia – Seed Freedom Food Festival

Introduction

Seed Freedom Food Festival was established with the aim to celebrate, inform and inspire South Australians about organic food, local food, growing your own food and the worldwide need to save seed.

The first Seed Freedom Food Festival took place in Adelaide city, South Australia on Saturday 27th September 2014 at The Market Shed on Holland St (an existing organic, local, ethical and sustainable market space) and was an immense success with over 1,000 people attending on the day.

Background

SFFF was founded by Keitha Young (née Haycock) following her studies of Organic Farming and Agroecology at Dr. Vandana Shiva's Earth University on Navdanya farm. With a core team of 3 others, Victoria Meyer, Amber Chapman and Leo Abello-Rode, and dozens of volunteers, they pulled off the not-for-profit festival with a lot of dedicated meetings and a spending budget of under $1000.

Objectives

As well as our mission statement to celebrate, inform and inspire South Australians about organic food, local food, growing your own food and the worldwide need to save seed, some of the organisational team's objectives that inspired the festival were:

- To empower South Australians with the knowledge and confidence of not just how, but why, to grow their own organic food and save seed.
- To create a culture of seed saving that is "as normal as brushing your teeth".
- To demystify and educate the public on the myths of organic that are predominant in mainstream media and to be a part of the process of making organic produce the norm again.
- To raise support and awareness for the bounty of local organic farms, farmers markets and organic businesses in South Australia.
- To highlight the importance of eating locally grown organic food.
- To encourage community within the city and greater Adelaide area - encouraging localised seed swap and food swap groups.

- *To share the joy of connecting with the earth and each other – to demonstrate that growing food organically and saving seeds is not only good for the health of the earth and its creatures, but also good for human health – physically, mentally & emotionally!*

- *To create a GM-Free event that educates on the issues surrounding GMOs in Australia and the world.*

The Festival

Seed Freedom Food Festival 2014 included:

1. A Speakers stage
   Featuring 15-25 minute talks by and on:
   - Dr. Vandana Shiva (via video address) on 'Why Seed Freedom, Food Sovereignty and Earth Democracy?'
   - Dr. Saamdu Chetri (via video address) Director of Bhutan's Gross National Happiness program, "GNH in Bhutan – a nation going 100% organic'
   - Jude & Michel Fanton, founders of Australia's National Seed Savers Network, "A global perspective on seed"
   - Lolo Houbein, author of One Magic Square 'grow your own food in one square metre'
   - Sarae Adampoulos, president of Organic Federation Australia SA
   - Ariella Helfgot, 'Sustainable Agriculture and Climate Change in Developing Countries'
   - Leo Abello-Rode & Ed Wilby, 'Intentional Communities in SA'
   - Jo Staniforth, 'Setting up and running community gardens in Adelaide'
   - Alistair Martin, creator of Ripe Near Me ap, 'Support local food from down the road'

2. Two Workshop areas
   With workshops by and on:
   - Jude & Michel Fanton, 'The Abundance of Seed – how to save your own seed'
   - Karen Montgomery, 'Principles of seed propogation using recycled materials'
   - Nadja Osterstock, 'Permaculture design for backyard gardens'
   - Simon Ardill, 'Traditional and Sustainable fruit tree pruning'
   - Nat Wiseman, 'Urban Farming in Adelaide – tools and techniques'
   - Adam Voysee, 'Herb extraction and steam distillation'
   - Remedy Bliss, 'The ancient art of fermentation'
   - Jessica Sanguesa, 'Introduction to preserving fruit and vegetables'
   - Niko Jah, 'The importance of growing fruit trees from seed'
   - Steven Hoepfner, 'How to make seed bombs'

3. Information stalls
   The following organisations and not-for-profits had stalls at the festival and all work towards raising awareness about food sovereignty, organics and GMOs in SA and Australia. They reported back positively with high levels of interest, petition signings and new recruited members from festival attendees on the causes they were sharing.
   - OFA: Organic Federation of Australia SA
   - SAGFIN: South Australia Gene and Food Information Network
   - AFSA: Australia Food Sovereignty Association
   - Fair Food Adelaide
   - Friends of the Earth Adelaide
   - March Against Monsanto, Adelaide
   - Transitions Film Festival Adelaide
   - Walyo Yerta Community Garden

4. Retail stalls
   Supporting local and organic farms and businesses such as Wagtail Urban Farm, Greenseeds certified organic seedlings, Beach Organics, Roseneath Organics and many more...

5. Food stalls
   10 food stalls with all organically sourced ingredients and GM Free.

6. Other
   - The Seed Swap and Food Swap tables were a surprisingly huge success with festival attendees encouraged via our Facebook page to bring along backyard homegrown produce to swap as well as their own saved seeds. A huge diversity of goods and seeds passed through on the day by the guidance of 'Seed Swap Australia' a grassroots local seed swap group.
   - A Raffle of organic food and gardening goods with 100% of money raised from it going to The Hummingbird Project's "Living Soil Saves Lives" project.
   - A Seed Mandala was created during the day by festival goers, and to close the festival it was ceremoniously dismantled with all the seed turning into seed bombs and/or given away for free to attendees.

Future Goals

Seed Freedom Food Festival will take place again this year, Saturday 26 September, with an aim to continue the high calibre of speakers and workshops on offer and long term plans are to expand the event out into the Adelaide parklands for even greater numbers. There are tentative plans to create an official website (there is only a Facebook page at present) and to potentially become a not-for-profit organisation. We will also join the Global Movement for Seed Freedom.

Seed Freedom Food Festival 2014

Conclusion

Seed Freedom Food Festival 2014 proved to all of us involved in its coordination that Adelaide was ready to "reclaim the food chain", to return to the land and organics, to localise their lifestyles and to create community. We viewed it as an immense success and we're hopeful for the future of seed freedom and food sovereignty in SA and Australia. We hope to continue to celebrate, inspire and inform so that the ripples of good food and good farming may continue on rejuvenating the older generations and teaching the younger ones.

Seed Freedom Food Festival
Adelaide, South Australia.
Established Saturday 27th
September, 2014
www.facebook.com/
seedfreedomfestivaladelaide

Seed Freedom in Asia - Pacific

Right for Seed and Water – A Campaign for Alternative Development Model in Srilanka

Seeds, which farmers over the ages grew in their own backyard or farmlands, are now the core of a debate over a proposed new Seed Act in Sri Lanka which farmers say would force them to import seeds from powerful seed companies in the world like Monsanto, Bayer or DuPont. Dr. Shiva called for a rejection of the Seed Act and a campaign for an alternative development model in Srilanka. Thousands of farmers marched in June 2014 against the proposed Seed Act, which would rob farmers of their seed freedom. The struggle against the Seed Act has been strengthened and continues today. A direct outcome of the Seed Freedom tour in Srilanka has been that 2 key farmers' representatives from Srilanka were sent to India for one month in September to learn and share knowledge on agro ecological methods at the A-Z of Agro Ecology and take part in the Seed Freedom Strategy meeting at Navdanya. The farmers' organizations also came to learn how to set up a People's University on Agro ecology based on the model of the Earth University at Navdanya.

Vandana Shiva visits Sri Lanka – Videos and Articles
http://seedfreedom.in/dr-vandana-shiva-visits-sri-lanka/

Source: Mantasa

Our Seeds Our Future: Strengthening Indonesia's Food Sovereignty – August 2014

At the request of local communities and farmers, the Seed Freedom Movement through Dr. Vandana Shiva was invited to Indonesia to strengthen the movement Food Sovereignty in Indonesia and to counter the increasing monopolization of the food system by a small group of corporations.

In collaboration with grassroots Indonesian communities and organizations such as Mantasa, Kehati Foundation, KBAR KEDRI and Slow Food Bali, Navdanya International has launched a collaborative project OUR SEEDS, OUR FUTURE, which seeks to embrace the involvement of a diverse range of society, starting with the support of farmers, women's groups, fishermen, indigenous people, local food producers, along with the informed general public who are concerned about the future of food in Indonesia and who want to strengthen and preserve food sovereignty and security in Indonesia.

An outcome of the upcoming OUR SEEDS, OUR FUTURE program in Bali has been the creation of a local seed initiative, entitled BENIH BALI which will encompass a public awareness and education pro- gram about the importance of local seed production, with responsible supporting programs in Bali for improved seed conservation, adaptation & innovation programs, including an island- wide seed network, seed library, and seed bank. BENIH BALI will represent a "next step" in developing more programs initiated by and on going by IDEP, with collaborative support from numerous other organizations.

Source: Mantasa

Educational Gardens - Dr. Vandana Shiva Visits Green School

http://tulisan.greenschool.org/2014/08/27/dr-vandana-shiva-visits-green-school/

Educational Gardens - Green School

Launch of Campaign in Indonesia and Australia against GMO Banana Biopiracy

http://seedfreedom.info/campaign/no-gmo-banana-campaign/

Educational Gardens - Green School

INDIA - Mumbai Rooftop Garden - Session on "Soil, Seeds, & You", December 2014

Report and Photos: *http://seedfreedom.info/mumbai-rooftop-garden/*

Source: The Hummingbird project

Source: The Hummingbird project

INDIA - Sugarcane and Gur Festival Inauguration, January 2015

Report and Photos:
http://seedfreedom.info/sugarcane-and-gur-festival-inauguration-photos-articles/

Navdanya

KURANDA, AUSTRALIA

Sprouts Seedsavers gathering and Seed-Declaration sharing, with Real Food Network – Call to Action 2014:
http://seedfreedom.in/events/kuranda-sprouts-seedsavers-gathering-and-seed-declaration-sharing-2/

Source: Real Food Network

NIMBIM, AUSTRALIA

Seed Saving Strategies (for the local Nimbin Bioregion), with Nimbin Farms & Food Security Hub – Call to Action 2014:
http://seedfreedom.info/events/seed-saving-strategies-for-the-local-nimbin-bioregion-4/

Source: Nimbin Farms & Food Security Hub

ADELAIDE, AUSTRALIA

'Soulful Seed Saving' - Workshop with Jude & Michel Fanton, organised by Seed Freedom Food Festival – Call to Action 2014:
http://seedfreedom.info/events/soulful-seed-saving-workshop-with-jude-michel-fanton/

Source: Seed Freedom Food Festiva

Canada – Jodi Koberinski*

Source: Gem Corn

State of Seeds in Canada 2014: Federal Agriculture Policy Overhaul Seeks to Entrench Monocultures

Canada's Harper Government has undertaken a massive overhaul of agricultural regulation over the past few years, including the introduction of 2 omnibus bills- an approach foreign to our country's long standing parliamentary democracy- to "modernize" our regulatory environment.

These changes will exacerbate the already declining access Canada's farmers have to open pollinated varieties. Bill C-18 was adopted in 2014 and ushers in the UPOV 91 era in Canada. The Safe Food For Canadians Act (SFFCA) takes 14 separate agriculture and food Acts, including Canada's organic regime, and brings them together under one piece of legislation. Simultaneously, the Seed Act is undergoing a separate overhaul as it is being folded into the SFFCA. Canada's agroecological movement is taking steps to address policy barriers by building alternate markets, cultures and approaches to seed sovereignty.

The Context

In Canada, the Canadian Seed Growers Association represents the commercial growers with a $2.7M a year budget for the organization. CSGA represents 130 certified seed growers whose market is $5.6B annually. The acreage for pedigreed seed in Canada, at 1.3M acres, is essentially the same as it was in 1994. Soy, wheat, and to a lesser degree canola acreage has gone up over the past 15 years, while barley and peas have declined[1]. This trend shows a move toward soy and wheat acreage and away from food crops.

The Canada Organic Trade Association (COTA) completed an Ecological Seed Market Study in late 2014. The paper did not distinguish between open pollinated (OP) and hybrid (F1) seeds and value of OP in the market. Many organic vegetable growers use hybrid seeds in Canada, though the availability of OP varieties is increasing and the number of small seed companies serving Canadian farmers and gardeners is also increasing[2] .
The study found that organic growers purchase $9 million in vegetable seeds per year, while ecological growers purchase $19 million, for a total estimated vegetable seed market of $28 million annually. Organic and ecological field crop growers use a great deal of saved seed, upwards of 60%, varying by crop. The organic and ecological field crop seeds market is worth $20.06 million annually, and another $30.09 million value in saved seed

planted. If organic field crop growers were to purchase only organic seed while maintaining their seed-saving practices, the market for organic seed would increase 300%.
In Canada, producers can save and replant seed protected under the Canadian Pant Breeders' Rights Act (PBR) if it is for their own use only. Producers cannot save and re-sell seed protected by PBR, according to the CSTA. Such policies have favoured hybrid development and biotechnology over open pollination and public breeding approaches. Under the new C-18 rules, saving and trading seeds becomes even more problematic. Much of Canada's production is not covered by PBR, though efforts are underway to increase the number of species governed by PBR.

Four plant species –wheat, maize, rice and potato– account for 60% of Canadian caloric intake. The average Canadian potato lost 100 per cent of its vitaminA content, 57 per cent of its vitaminC and iron, and 28 per cent of calcium over the last 60 years[3], a trend attributable to a loss in diversity and breeding for processing uniformity.
Canada's once rich crop genetic diversity has been decimated, with only a fraction still available to farmers. About 86% of the 7,098 apple varieties documented as having been in use between 1804 and 1904 have been lost, along with 95% of the cabbage, 91% of the field corn, 94% of the pea, and 81% of the tomato varieties which no longer exist[4].

While the fastest growing market in agriculture is organic, 95 per cent of the seeds that grow Canada's major food crops are bred for uniformity, "high performance" conditions, and routine application of synthetic inputs rather than for agroecological production. Most often, these seeds are hybrid, and in soy, corn, canola and sugar beets, they are also genetically modified for RoundUp tolerance and prophylactic bT expression. Canadian organic farmers too often must work with seeds that are bred for chemical fertilizers, crop "protection" or agri-toxins, and large-scale mechanical planting and harvesting. They also face contamination from GMO crops in seed sources, as evidenced in the past with canola and flax.

Photo by Roberta Rossini

Sisters of Providence Greenhouse (2014 photo)

Regulatory changes: more of the same

Canada's government continued consultations in 2014 on proposed changes to varietal registration (VR) in Canada. The government's declared agenda is an "emphasis on innovation, competitiveness and market development". The current VR system is designed to prevent fraud, support seed certification, foster international trade, and enable tracking in the marketplace. The renewed mandate for the "modernized, streamlined VR system" being implemented in 2016 is to "promote innovation in variety development, improve competitiveness, and facilitate producers' timely access to new varieties"[5], according to the government's consultation documents. Gone is the language of farmer protection.

Changes to the Seeds Act are also underway as part of the government's regulatory harmonization efforts. The new focus on "market driven" registration in combination with the loss of merit in assessing new registrations means that lines of value to farmers that aren't as profitable will disappear at a much higher rate under the proposed VR systems than the alarming rate at which varieties are disappearing.

VR and the changes to the Seed Act will encourage investment in more, not less, hybridization and biotechnology, and will do nothing to support development of open pollinated varieties or varieties adapted to local, agroecological conditions. The Canadian government issued a directive in 2013 that expressly prohibits Agriculture Canada scientists from taking a plant through to the Varietal Registration level- which means the public will continue to pay for the germoplasm development efforts at our few remaining research stations, and the promising strains go to the private sector to commercialize. This not only removes one mechanism for our public breeding to pay for itself (in royalties back to Agriculture Canada for its AC varieties), it is a massive transfer of the public commons to private ownership.

Publicly funded plant breeding at the Cereals Research Centre in Manitoba (CRC) has historically produced most of Canada's cereal crop varieties, which are the foundation for Canada's multibilliondollar grain industry. Roughly 50 percent of wheat and oat acreage in Canada is seeded to varieties developed at the CRC, with a farm gate value of close to $2.5 billion, according to Industry Canada's statistics.

The Harper Government closed the CRC in 2014, and is eliminating all public funding for spring wheat breeding to pave the way for private sector investment. Agriculture Canada will no longer support new breeding nor allow the current work to proceed to the final stage of producing varieties farmers can buy. It is a paper exchange piracy. And yet research has also shown that private breeding is less economically efficient: $25 million in annual public investment in wheat produces can generate the same yield increases produced by $80 million in private money in canola breeding.[6]
If the changes to variety registration rules proposed in 2013 are adopted, companies will be able to deregister older varieties that no longer provide them with royalties. This will force farmers to choose among fewer and more expensive varieties.

With public breeders out of the equation, the rate at which less profitable OP varieties come to market will undoubtedly decline in favour of IP supported hybrid and biotech registrations. Canada's highlyregulated seed system is constructed of policies that impact research and development, production, distribution, and sale. In 2014, The Bauta Family Initiative on Canadian Seed Security's Policy Working Group published its review of four key frameworks governing vegetable and field crop seed: the Seeds Act; Organic Products Regulations; intellectual property regulations; and, the International Treaty on Plant Genetic Resources for Food and Agriculture. The Working Group prepared a detailed analysis of the impacts of these frameworks on biodiversity, ecological production, and public access to seed.

Their analysis revealed that the regulations governing seed in Canada is oriented towards largescale conventional production. Proprietary research and development meets the needs of some producers and markets, yet there are troubling impacts on the development of agroecological seeds.

The Seeds Act, a fundamental piece of legislation, was implemented to safeguard farmers and the food industry against the circulation of poor quality seed. Some believe these regulations remain critical to ensure seed quality. However, others contend that the system favours large-scale conventional farming, limits biodiversity and under-serves organic producers. Similarly, laws designed to protect plant breeders' rights and reward investments in developing seed varieties that perform well in conventional farming operations, can create the conditions for narrowing biodiversity and limiting farmers' capacity to save seed. These impacts go against the aims of The International Treaty on Plant Genetic Resources for Food and Agriculture, to which Canada is a signatory. As such, Canada has two pieces of legislation that have conflicting objectives[7].
Canada's current policy direction for VR and the Seed Act are barriers to seed sovereignty. Many heritage cereals grown by ecological farmers do not fit the definition of a "variety" (i.e. distinct, homogeneous, uniform, and stable). Recommending committees in the variety registration process have not involved the organic sector, and the evaluations don't include indicators for ecological farming. Performance trials are almost exclusively conducted under conventional conditions. Data from merit assessments under these conditions is not particularly useful for ecological growers.
Farmers are concerned that the trend towards deregulation, loosening the standards of the variety registration system, and permitting the deregistration of older varieties, would remove the checks and balances that provide farmers with good quality seed[8].

*Jodi Koberinski is known as an unflagging source of innovation, an activist who tirelessly helps others and furthers the cause of food sovereignty. She is a global leader on this issue and is recognized for her vital work transforming - not just reforming - agriculture to provide sustainable, safe, and secure food systems around the world" - from the Oak Institute website: http://www.colby.edu/oakinstitute/2015-oak-human-rights-fellow-jodi-koberinski/

It seems to me that when our agricultural system isn't working for most farmers we should be looking for something different to fix it, but Bill C-18 is more of the same. It increases the power of large corporations in relation to family farms. It increasingly ties Canadian agriculture into a globalized, price-based commodity market. It encourages the long-term trend toward bigger farms and fewer farmers.

I don't think the sky will fall if Bill C-18 is passed, but it will be one more incremental step in a policy march that I think is failing Canadian agriculture.

What is the alternative? Bill C-18 is called the agricultural growth act. Imagine for a minute if each of you, as a member of this committee, sat down in your constituency with a group of farmers and people interested in food policy and said to them, "The government wants to write an agricultural growth act. What do you think should be in it?" Do you honestly think that anyone would speak up and say to bring Canadian law into conformity with UPOV 91? Would someone put up their hand and say, "Why don't we make it easier for foreign corporations to access farm credit programs underwritten by Canadian taxpayers?" It seems unlikely.

I can think of many things the Canadian government could do to promote agricultural growth, none of which are in Bill C-18. Why not look at ways to grow the number of farmers?

Brent Preston, The New Farm, testimony to the Standing Committee on Agriculture, October 28, 2014

Overall, the tone of this bill politicizes control over seed, and we see that as a concern. The need to protect global food security and biodiversity requires us to enshrine farmers' rights in more than a small exception to this legislation.

Jennifer Pfenning, Chair, Organic Council of Ontario, testimony to the Standing Committee on Agriculture, October 28, 2014

Canada's ecological and family farmers expressed concerns in 2014 in opposition to Bill C 18, the Agriculture Growth Act, including extending the terms of protection of plant varieties from 15 to 20 years; expanding the scope of protection so that royalties collected on IPRs could be applied not only at the sale of seed, but elsewhere in the value chain; permitting breeders to apply for protection for "essentially derived varieties"; that is, varieties that are derived from and retain the essential characteristics of protected varieties; and inclusion of language in UPOV '91 for the farmer's privilege to be revoked or adjusted at the discretion of national governments[9].
The Discussion Paper concludes:

"Be it through patenting, PBR, or another framework, IPR systems essentially encourage the development of proprietary seeds. These seeds, which are increasingly GE/GM, are most profitable to seed companies supplying large-scale, low-diversity, capital-intensive farming operations...

"The regulatory frameworks for seed production and distribution in Canada are multifaceted and, at times, at odds with each other. In an effort to deliver quality assurance for farmers, the Seeds Act limits biodiversity and can under-serve organic producers. Similarly, as a signatory to The Treaty, Canada engages to take action to preserve biodiversity, increase in situ conservation, and protect the rights of farmers to save seed. However, the pending adoption of UPOV '91 may undermine this engagement by promoting proprietary plant breeding and limiting farmers' capacity to save seed."[10]

As elsewhere in the world, Canadians are organizing around unjust laws and creating ways to reclaim our commons.

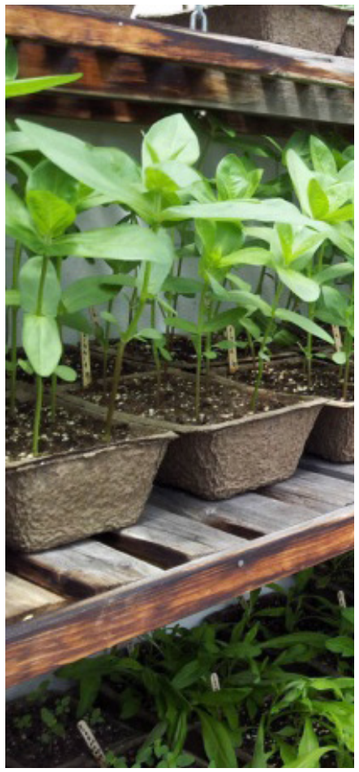
Seed Banks

In addition to the few remaining public seed banks managed by Canadian governments or institutions, a growing number of citizen-run, collective, and cooperative seed banks are springing up across Canada in the wake of the renewed attention to seeds. Independent projects like the Populuxe Seed Bank[11] in Alberta start with a handful of varieties of seeds, and grow to over 200 heirloom and open pollinated varieties. Populuxe's model of exponential growth occurs as other dedicated growers donate their seeds for preservation to online and place-based banks.

BC Seed Sanctuary houses a large and diverse seed collection for most kinds of food and herbs protected in a proper storage building. The project relies on many plant "custodians" across the country who tell us how the varieties do in their particular climates. With over 900 varieties in their living gene bank and the project in its 11th year, the Sanctuary is featured in the films "Gardens of Destiny" and "Tableland".

The Sisters of Providence of St. Vincent de Paul, located in Ontario, also run a Seed Sanctuary. The order operates a monthly seed saver group with access to their glass greenhouse to propagate seedlings, gardens, and part of a barn refurbished for seed sorting, storage and activities. Carol and Robert Mouck began working to establish the Heirloom Seed Sanctuary with the Sisters in 1999. They worked with about 400 seed varieties they saved from Foxfire Farm in Napanee, Ontario since 1974. Recently the Heirloom Seed Sanctuary has joined the CRAFT (Collaborative Regional Alliance for Farmer Training) Kingston network to offer an internship to a young person interested in learning about seed saving[12].

Sisters of Providence Cate Henderson, Sister Alda Brady with Kate Green from USC Canada (2012 photo)



Seed Libraries

The Toronto Seed Library (TSL) was initiated in November 2012 by the Occupy Gardens Toronto collective and students from the University of Toronto and York University. Together a growing cooperative of individuals and organizations, seed savers, gardeners, farmers, educators, librarians, policy makers and food lovers of all varieties are creating a free, selfperpetuating seed library system. In 2013 TSL established 6 branches, attended dozens of events, collected, processed and shared thousands of packs of seeds and seed saving knowledge.

In 2014 TSL expanded to 14 branches and have attended over 50 community events, including 'literaseed' workshops inside the Toronto Public Library, a 'how to start a seed library' Webinar with the Ontario Library Association.

TSL has inspired countless seed libraries near and far, while distributing over 50 000 seed packs to thousands of gardeners across Toronto, Canada, and around the world.

Educational Resources on Seed and School Outreach

The seed savers in Canada are working with gardeners' groups, school garden programs, and community gardens to infuse the neo urban gardening culture with seed saving at its roots. Groups range from traditional organic/gardener outreach organizations like the Canada Organic Growers to the Permaculture GTA group of Toronto area urban youth focused on community development as a precondition to farming and gardening in the city.

Canadian Catholic Organization for Development and Peace is a long standing supporter of international efforts in food sovereignty. The 2014 campaign, Sow Much Love, draws attention to the similarities the global south and Canadians share when it comes to the food system. The group has developed curriculum-ready materials for Canadian schools, and has engaged in the conversations on UPOV 91.
A number of training videos and books authored by and for Canadian seed savers are populating the internet, seedy Saturdays (seed exchanges), and farmers' markets across the country. Organic sector groups have developed an online seed sourcing databases[13].

Sisters of Providence Greenhouse (2014 photo)

Bauta Family Initiative on Seed Security

This $4 million dollar, multi-year project of USC Canada is a civic engagement project funded by a family foundation created from profits generated within Canada's food system. This groundbreaking initiative is helping fund dozens of projects in communities across Canada that are seeding the agroecological seed movement through grant making, skills sharing, and primary research and development.

Civil Society organizes in opposition to C18 and UPOV 91

Bill C 18 united the food systems movements in opposition of the corporate take over of our seed supply, and put seeds "on the map" for many groups whose mandates are extensive but whose resources are not. Food Secure Canada took a lead role alongside the National Farmers' Union to educate Canadians and organize opposition to the Bill. FSC joined the Organic Council of Ontario, Canada Organic Growers Association, the Canada Organic Trade Association, and select farmers in presenting to the Canadian Senate hearings on the Bill and its impacts on Canada's farmers and our seed sovereignty. Countless civil society organizations stepped up to support comments on the proposed legislation.

Seed Research in Manitoba for the Bauta Initiative, 2014

Eastern Canada Organic Seed Growers Network and the BC Seeds Gathering 2014

These biannual conferences took place in the fall of 2014 in support of regional networking and training for seed growers, community leaders, and farmers from eastern Canada and from across BC respectively. The Eastern Canada and west coast events both showcase innovative practices in seed cultivation, harvesting and storage to an educated audience.

Note

[1] Canada Seed Growers Association AGM 2014 Director's Report

[2] The Market for Ecological and Organic Seed in Canada: Trends and Opportunities 2014, Marie-Eve Levert, Canada Organic Trade Association 2014. COTA's initial environmental scan brought to light a severe shortage of data on organic and ecological seed in Canada. The scarcity of information constrained this study and its results.

[3] Discussion Paper on Seed Policy, Policy Working Group, Bauta Family Initiative on Canadian Seed Security, March 2014, USC Canada.

[4] Seeds of Diversity, USC Canada web publication 2014

[5] Government of Canada presentation at the Canadian Seed Trade Association AGM November, 2014, http://cdnseed.org/wp-content/uploads/2014/11/English-Variety-Registration.pdf

[6] Glen Tait, Push to private plant breeding shameful, Western Producer April 17, 2014

[7] The context and issues within each of the four regulatory frameworks and a full analysis, please see www.seedsecurity.ca

[8] Discussion Paper, Seed Policy in Canada, Policy Working Group, Bauta Family Initiative on Canadian Seed Security, March 2014

[9] National Farmers' Union documents on Bill C-18, press releases www.nfu.ca, 2014

[10] Discussion Paper, Seed Policy in Canada, March 2014

[11] http://www.theseedbank.net/

[12] CRAFT offers extension supports, internships and staff positions to new farmers throughout Ontario.

[13] http://www.seeds.ca/seedfinder and http://findorganicseed.ca/index.php/en

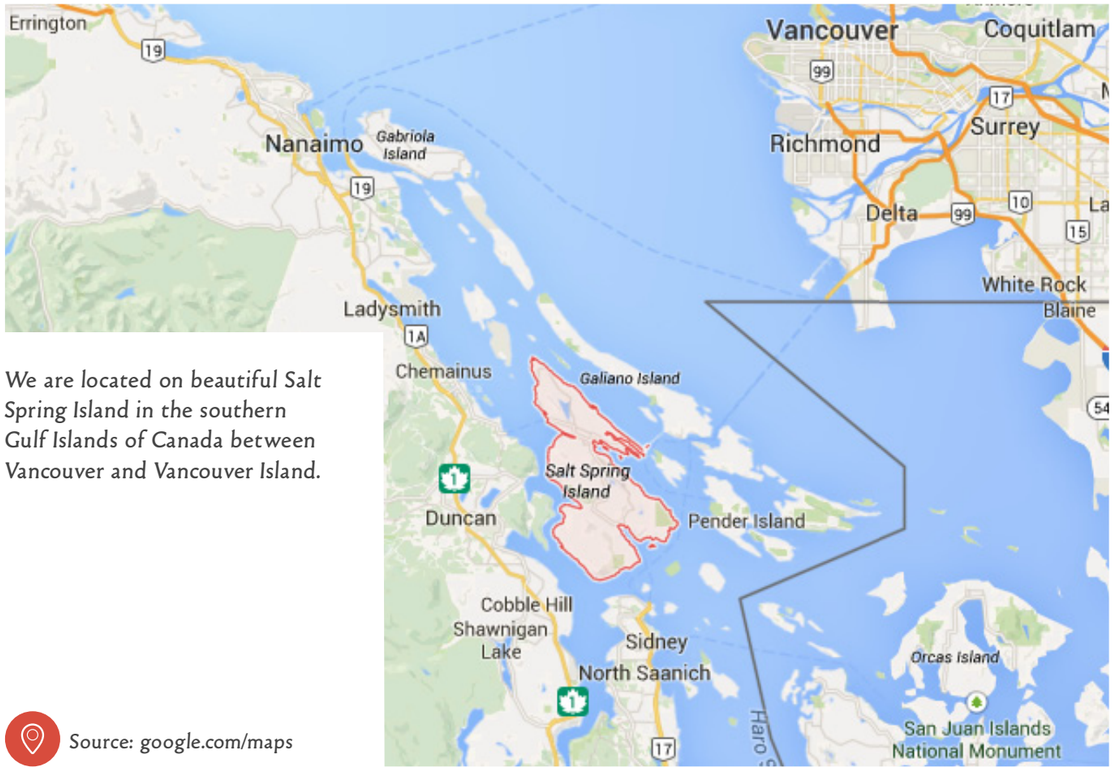
Canada – Salt Spring Sanctuary Society

The Salt Spring Sanctuary Society was formed in 2003, becoming a charitable organization dedicated to the health and vitality of the earth through the preservation and promotion of heritage seeds. It is committed to maintaining, evaluating and keeping databases for all the edible, medicinal and useful crops that can be grown in Canada.

We are a volunteer-run board mostly consisting of farmers and community folks interested in seeds.

salt spring seed sanctuary

Source: ybertaud9.wordpress.com/organic-propagation/



We are located on beautiful Salt Spring Island in the southern Gulf Islands of Canada between Vancouver and Vancouver Island.

Source: google.com/maps

What we do:

1. *We work to increase awareness of food security issues including endangered seeds, biodiversity, GMOs and resilient communities.*
2. *We offer educational opportunities such as seed saving workshops.*
3. *We operate a seed library in our community.*
4. *We assist other communities in starting seeds banks and libraries.*
5. *We recruit seed growers across the country.*
6. *We recruit lifetime members for only $20!*
7. *We share seeds with our members and ask for some in return (Bulk Me Up program).*
8. *We publish an annual newsletter for 500 members and 3600 people on our mailing list.*

USA – OSGATA (Organic Seed Growers And Trade Association)

Protecting Organic Seed and Organic Farmers, Organic Seed Growers and Trade Association (OSGATA)

Protecting Organic Seed Integrity

Genetically engineered (GE) crops have quickly become a major feature in the American landscape since the deregulation and commercial acceptance of the first GE crop in 1994. The biology of gene flow is undeniable: pollen and seeds move beyond farmers' fields, via natural and human-aided processes. There is no exception for crops that are genetically engineered.

Since that first approval, eight GE crops have been deregulated by the USDA and subsequently adopted within commercial agriculture: alfalfa, canola, corn, cotton, papaya, soybean, sugarbeet, and squash (Cucurbita pepo); GE potatoes and apples have also been recently deregulated by the USDA, but it remains to be seen if they will be embraced by the marketplace.

Most of these GE crops contain genes that provide the individual plant with resistance to pests or herbicides, but hundreds of other novel GE traits, from drought tolerance to higher vitamin concentrations, are in the laboratory and field test stages. Prior to commercialization in the U.S., GE crops are typically field tested for several years in open environments, allowing for additional opportunities for cross-pollination and/or seed mixing. Concerned organic seed growers wishing to buffer their crops from potential contamination sources are further disadvantaged here, as many of the GE crops in the trial stage are considered confidential business information.

GE contamination within the organic seed sector is especially harmful to the organic industry. For that matter, GE contamination in conventional seed, which may be allowed in organic operations, is equally damaging. Pure uncontaminated seed is the base of the global food supply.

Once the integrity of organic seed has been compromised, the integrity of the entire organic system will follow. Furthermore, the reproductive nature of seed negates the concept of low-level contamination.

Plants grown from contaminated seed continue to act as avenues for release of contaminated genes.

Genetic engineering is an excluded method under the National Organic Program (NOP), as outlined in section 205.105. However, unlike other defined seed contaminants (for example, presence of weed seed) there are currently no definite thresholds for GE presence in organic and non-GE seed.

Testing requirements to ensure that organic seed is free of genetic contaminants also do not exist. Rather, the NOP dictates production standards for certified organic crops rather than certifying the end product.

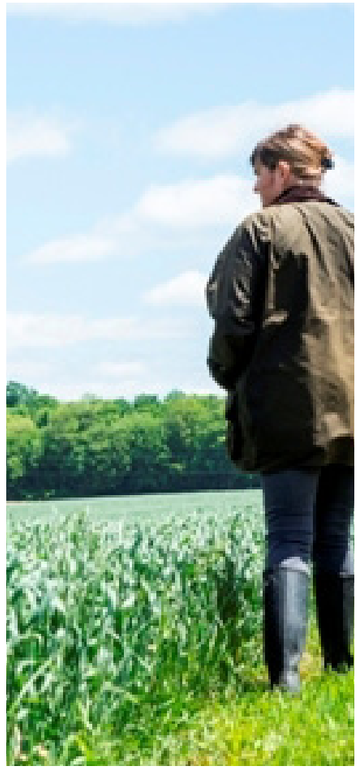
Complicating the issue, organic seed integrity does not reside within the boundaries of any single nation. The global nature of the seed and food commodity trade ensures worldwide travel of GE traits. An international response is needed to adequately address the threat of potential continued GE contamination. While there is presently no labeling or tolerance laws within the U.S., several countries have set tolerance levels pertaining to GE contamination of non-GE, including organic, foods. For example, the European Union has a 0.9% threshold for approved varieties and zero tolerance for non-approved varieties; Japan rejects food products with GE content above 5%.

Our lack of in-country tolerance thresholds for GE works against the ability of organic farmers in the U.S. to compete in the current international marketplace.

If farmers attempt to market crops that are not approved for export, or have adventitious presence above allowable levels, they face entire shipments being rejected by import countries.

Contamination of non-engineered seed stocks in the U.S. has further global implications, beyond complicating our trade relationships. GE contamination can affect the seed resources and agricultural systems of developing countries. When we export contaminated seed to these nations, as either seeds for planting or as bulk products comprised of viable seeds, we run the risk of contributing to the spread of GE contamination.

OSGATA
Organic Seed Growers and Trade Association



This is especially of concern in centers of crop diversity like Mexico, the ancestral home of corn. Loss of regionally adapted varieties to GE contamination constitutes a monumental and irreplaceable loss of unique genetic diversity.

How do we mitigate future contamination in order to protect our shared genetic resources?

OSGATA's policy on seed purity is designed to be consistent with the expectations of genetic purity within the organic seed market, while also aiming to protect our genetic heritage for generations to come. OSGATA's Policy on Organic Seed Contaminated by Genetically Engineered Seed, ratified by the membership, states that GE contamination of organic seed constitutes irreparable harm to the organic seed industry and undermines the integrity of organic seed: Any detectable level is unacceptable.

Some companies and governments are considering, or have considered, higher allowable thresholds of contamination. Such considerations are harmful to the organic markets.

International controversy over GE food, the increasing demand and continued growth in the organic market sector, and variable regulatory regimes across the globe beg for reliable sources of pure seed now and in the future.

To meet this increasing market demand, we must acknowledge that avoidance of GE contamination is a shared responsibility between growers of organic crops, non-GE conventional crops, and GE crops, as well as the GE seed technology owners. Best management practices designed to reduce the risk of contamination should be embraced by all agricultural sectors in order to ensure the integrity of organic seed.

In 2014, the Organic Seed Growers and Trade Association (OSGATA) produced the first comprehensive, peer-reviewed resource on mitigating contamination, Protecting Organic Seed Integrity: The Organic Farmer's Handbook to GE Avoidance and Testing.

The handbook offers pertinent guidance on seed contamination avoidance and testing protocols for the following at-risk crops (those with USDA-approved GE counterparts which are currently in commercial production): corn, soy, cotton, alfalfa, papaya, canola, sugarbeet, and squash (Cucurbita pepo). The handbook is free to organic farmers as a hard copy and digital download available on *www.osgata.org*

Source: osgata.org

The Costs of GE Contamination

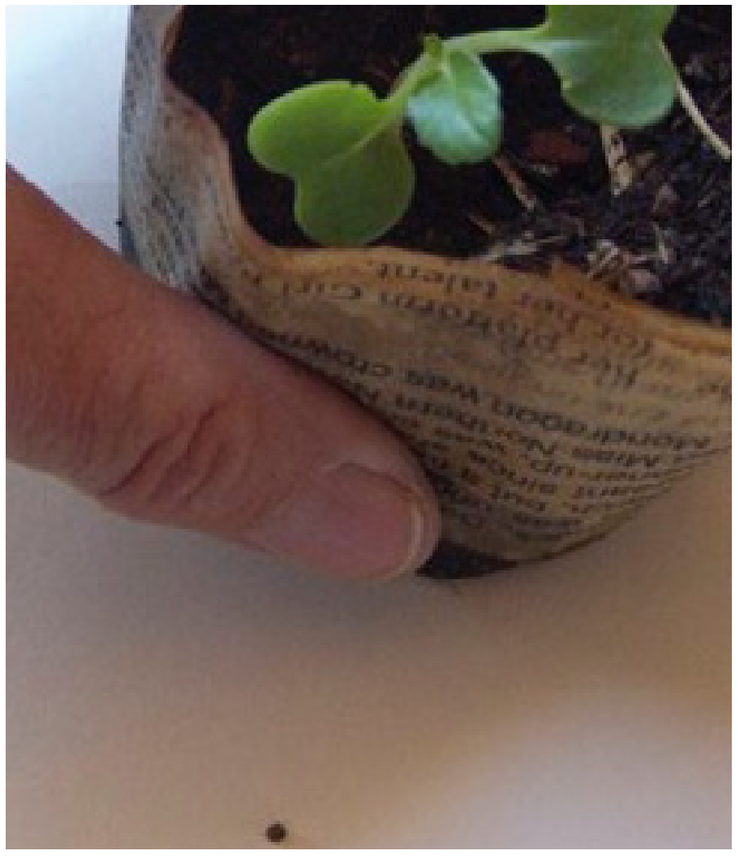
It must be noted that the ease in which GE contamination can infiltrate the traditional seed supply puts unfair social responsibilities and unreasonable economic burdens on farmers wishing to avoid GE technology.
When GE contamination does occur, organic farmers do not have access to an established system to recoup financial losses.
Issues surrounding who is liable for contamination and the subsequent economic losses cloud the potential for recourse. In the meantime, organic farmers unfairly bear the burden of seed and crop contamination by GE sources.
Avoidance measures and testing costs are part of the organic farmer's damages. Frequent testing to ensure seed integrity, as well as the loss of seed to testing, and any discarding of contaminated seed lots is an unfair cost for organic farmers to shoulder. Additional costs have been borne and will continue to apply to preemptive confinement measures to avoid GE contamination within organic seed production systems. Measures such as geographic isolation for seed crops, vigilance in removing at-risk volunteers, and using dedicated equipment contribute to additional time and labor.
Organic farmers also face diminished prices and marketing turmoil if they are forced to reroute contaminated crops from their intended organic markets. Furthermore they run the risk of straightout blanket market rejections, especially on an international scale in dealing with more sensitive markets. This could mean loss of income, and even loss of their entire livelihood. Loss of consumer confidence, either on an individual basis or industry-wide, is another possible repercussion in light of GE contamination of organic crops.
Another difficult-to-calculate cost accrued is the potential loss of the genetic integrity of seed stocks upon which farmers are dependent. The permanent loss of choice in growing, as well as eating, organic and non-GE foods is virtually impossible to quantify in terms of economics.
This is in addition to the risks of legal liability these growers face.

Source: osgata.org

Liability in the Face of Contamination

Another burden that organic growers face is the risk of legal liability for patent infringement if their crops become contaminated by GE crops. To protect farmers, a lawsuit -Organic Seed Growers & Trade Association et al. v. Monsanto- was filed in 2011 on behalf of 83 individual American and Canadian family farmers, independent seed companies and agricultural organizations whose combined memberships total over one million citizens, including many non-GE farmers and over 25% of North America's certified organic farmers.
Plaintiff-farmers had sought Court protection under the Declaratory Judgment Act that should they become the innocent victims of contamination by Monsanto's patented gene-splice technology they could not be sued for patent infringement.
Following an oral hearing in January of 2012, Judge Naomi Buchwald, of the federal district court in Manhattan, NY, sided with Monsanto in honoring their motion to dismiss. On July 5, 2012 the plaintiff group filed a brief with the United States Court of Appeals for the Federal Circuit in Washington, D.C., asking the appellate court to reverse the lower court's decision dismissing protective legal action against agricultural giant Monsanto's patents on GE seed.
The oral argument was heard on January 10, 2013, and a ruling was issued on June 10, 2013.
Ultimately, American farmers were handed a partial victory in the OSGATA et al. v. Monsanto lawsuit. The three-justice panel presiding over the Court of Appeals for the Federal Circuit in Washington, D.C., issued a complicated ruling ordering Monsanto not to sue American farmers whose fields were contaminated with trace amounts of patented material, which the Court defined as 1%.
On September 5, 2013, the plaintiffs appealed to the U.S. Supreme Court in order to attain full protection for American farmers. On January 13, 2013, the U.S. Supreme Court issued a decision in OSGATA et al. v. Monsanto. Farmers were denied the right to argue their case in court and gain protection from potential abuse by the agrichemical and genetic engineering giant, Monsanto.

Source: osgata.org



USA – Seed Broadcast

People and seeds have long been intertwined in a complex field of relations. Throughout history plants have cycled from seed to seed and humans have interjected their desire to be a part of this process, selecting, storing, and growing out these plants year after year for millennia. This relationship was fed with an intention towards care and resiliency, to nurture not only people, but also a polyculture community of the familiar and an intentional community of plants, animals, humans, among the earth. Relatively recently this intention has shifted towards engineering botanical processes to build mono-agricultural empires, create populations of dependent passivity, and dominate the more than human.

Source: seedbroadcast.org

Since 2011, SeedBroadcast has been examining these territories through performative engagements as artists, farmers, gardeners, teachers, and collective operatives, while rethinking the term agri-Culture. Project concepts and methodologies are founded in a space of the grassroots, where culture, creativity, collaboration, and agency are coupled with open/free-source processes, seeds, agroecology, rhizomatic networks, and most importantly the relationships and stories that bring these all together.

During 2014 programming, SeedBroadcast initiated Seed Story Workshops and SWAP. These two new projects grew with local, regional, and national partners to extend the reach of Seed Story Broadcasting potential, while facilitating the active participation of communities from the inside out.

SeedBroadcast also continued to engage local and regional agri-Culture and seeds through the Mobile Seed Story Broadcasting Station (MSSBS) as it traveled across New Mexico and Southern Colorado. The SeedBroadcast agri-Culture Journal grew tremendously in 2014, with Spring and Autumn editions which brought together seed wisdom from backyards, gardens, and farms locally and globally. It was a year of wisdom, support, and action, globa-locally!

The Mobile Seed Story Broadcasting Station (MSSBS) spent 2014 in partnership with regional seed libraries, farmers, gardeners, schools, and at public events recording and broadcasting seed stories, sharing resources, pollinating open-source seed networks, and blogging from the field. The blogging is instrumental in reporting these events and honoring the efforts of these communities and individuals in their food and seed sovereignty efforts. This is also the first platform for broadcasting Seed Stories. Mobile Seed Story Broadcasting Station (MSSBS) Blog can be found at: *http://seedbroadcast.blogspot.com*

The 2014 regional MSSBS tour took us to seed exchanges, seed libraries, agri-Cultural gatherings, and out to peoples' farms and gardens across New Mexico and Southern Colorado. We partnered with organizations and individuals to present the Mobile Seed Story Broadcasting Station where we distributed open-pollinated seeds, recorded seed stories, and broadcast seed stories. Locations included, our home base of Anton Chico, as well as, Mora, Albuquerque, Santa Fe, Tucson, Mancos, Dolores, Ridgway, Telluride, and Westcliff. Throughout these travels, we met people from all walks of life and all ages excited about the creative capacity of seed stories and interested in cultivating seed stories in their own lives and communities. Here are some images and seed stories from our 2014 Mobile Seed Story Broadcasting Station Tour.

SeedBroadcast van

Here are some selected Seed Stories from the Mobile Seed Story Broadcasting 2014 Tour.

You can also find complete 2014 Seed Stories online at:
https://soundcloud.com/seedbroadcast

Camillo, a Santa Fe Public School Student from the Schools Special Planting Day at New Mexico Land Office:
https://soundcloud.com/seedbroadcast/camillo-shares-his-story-of-sunflower-seeds-and-the-wind

Sylvie Ortega, gardener and seed saver from Mora, NM:
https://soundcloud.com/seedbroadcast/sylvia-ortega-shares-her-story

Brita Sauer, ABC Seed Library founder and librarian at Juan Tabo Public Library in Albuquerque, NM:
https://soundcloud.com/seedbroadcast/librarian-brita-sauer-talks

Michael Gorospe, a South Valley farmer from Erda Gardens, Albuquerque, NM:
https://soundcloud.com/seedbroadcast/michael-gorospe-tells-a-seed-story-remembering-his-father-saving-seeds

Renee Apodaca, Albuquerque BioPark Volunteer in Albuquerque, NM.
https://soundcloud.com/seedbroadcast/renee-apodaca-shares-her-dream-of-taking-over-the-family-farm

Kukunaokala Begay, a farm intern at Tomten Farm in Telluride, CO:
https://soundcloud.com/seedbroadcast/kukunaokala-begay-shares-his-seed-story-of-belief-prayer-and-corn

In early 2014, we were invited to present SeedBroadcast at Luna Community College in Las Vegas, NM. This opportunity allowed us to explore yet another collaborative and generative Seed Story process where we cultivated group conversations around seeds and seed stories. This led to the fruition of Seed Story Workshops. We were invited by New Mexico Land Office and Santa Fe Public Schools, the Santa Fe Children's Museum, Institute of American Indian Arts, and Native Seed/SEARCH to lead Seed Story Workshops with their students and programs.

Seed Story workshops are an expansive frame for building capacity through collaboration and solidarity, while enabling others to learn how to reach out into their communities to support seed stories. During these workshops we share the SeedBroadcast video, Letter from a SeedBroadcaster, and Seed Stories we have recorded. We then circle round for conversations about Seed Stories. After this, we have participants go through a series of creative exercises, writing, drawing, and telling stories. Then at the end, participants record each others' stories and share them back with the group.

This very simple, yet profound work has led to several expansive collaborations across the country and world, from New Mexico to Arizona, and Cleveland, Ohio to India. It has also opened up a deep partnership with the Institute of American Indian Arts to assist in the creation of their community Seed Story Library.

Source: seedbroadcast.org

Here is a Seed Story of Listening and Thanks by Elizabeth Pantoha from our Seed Story Workshop at Native Seed/SEARCH:
https://soundcloud.com/seedbroadcast/elizabeth-pantoha-shares-her-seed-story-of-listening-and-thanks

Another of SeedBroadcast's various dispersal, broadcasting, and collaborative tactics is the bi-annual SeedBroadcast agri-Culture Journal, a newspaper we cultivate, print, and distribute throughout the year. The intention of this journal is to activate a forum of exchange to intensify the discourse around seeds, food, and grassroots action. Contributors include farmers, gardeners, activists, artists, cooks, educators, and others concerned with the state of seeds and food. In 2014 we printed 7000 copies of the Spring and Autumn editions and distributed these freely around New Mexico, through the MSSBS and through contributors. We also share these as downloadable pdf's on our website at:
http://www.seedbroadcast.org/SeedBroadcast/SeedBroadcast_agriCulture_Journal.html

Finding ways to build collaborative partnerships beyond our region has led us to a new experimental platform called SWAP. The kick-off for this project occurred in the heart of corn country, in Iowa.
It was in partnership with an organization called Exuberant Politics and directed by local farmer and artist, Carolyn Scherf. SWAP shared the technological Mobile Seed Story Broadcasting Station structure as an experimental pop-up "grow-kit" to interrogate agri-Culture and local issues. Local community members used it to record seed stories, bring awareness to issues of GMO, pesticide drift, seed saving, and help inspire local open-source networks. Events took place in Iowa City, 94 Decorah, Ely, and Cedar Rapids. Carolyn blogged from the SeedBroadcast social media network and she sent raw Seed Story recordings back to us in New Mexico to edit and broadcast.

Here is one of the Seed Stories from Iowa Farmer, Laura Krause talking about the challenges of producing open-pollinated, organic corn seed in GMO laden cornbelt.
https://soundcloud.com/seedbroadcast/laura-krouse-talks-about-open
SeedBroadcast web platforms, with lots of information about our activities, project photos, Seed Stories, videos, partners, and resources:
http://www.seedbroadcast.org
http://seedbroadcast.blogspot.com
https://soundcloud.com/seedbroadcast
https://www.facebook.com/seedshare

SeedBroadcast
Anton Chico, New Mexico, USA
www.seedbroadcast.org

USA – The Hummingbird Project/Cleveland Seed Bank

Saving Seeds in the American Midwest For us, it began in India. Specifically, it began at Navdanya. We had traveled there on behalf of our international permaculture non-profit, The Hummingbird Project, and were collaborating with Dr. Vandana Shiva to teach local farmers about soil health and the benefits of organic agriculture. It was during this collaboration that we learned about the 100+ seed banks Dr. Shiva had founded throughout India, and were able to witness, firsthand, the importance of seeds. As we continued to work with the local farmers, we saw that not only were they suffering from degraded soil and all its attendant issues, but that they had also, to devastating effect, lost control of their seed supply.

The Cleveland Seed Bank was directly inspired by these experiences. Upon our return to Ohio we couldn't stop thinking about India's lack of access to quality, open-pollinated seeds – only to realize before long that a similar system was developing here at home. The urban farm movement was growing, but plants were rarely, if ever, grown from locally sourced seed. In fact, there was no reliable source of locally adapted seeds anywhere in the Cleveland region. This was deeply troubling and needed to be addressed. A new arm of our organization, dedicated to seeds, became necessary.

Cleveland was an ideal environment for a project of this sort. The city boasted a vibrant local food movement with more urban farms and markets each year, but no one seemed to have linked "local food" to "local seed." Carlo Petrini's comment in the 2012 Seed Freedom Report summed up the mindset, "It seems that public opinion, which is generally not very interested in anything related to agriculture but instead very interested in everything related to food, does not consider the two issues as being connected."

We needed to tap into that interest, that enthusiasm, and use it to bridge the gap between food and its source. Between food and seed.

The seed bank was officially founded in the summer of 2013, with the goal of inspiring, educating, and growing a community network of seed savers. Such a network would, over time, develop the regionally adapted seed supply that Cleveland so desperately needed. That was our starting point, and as we moved forward from there, it became obvious that to develop this fledgling community we needed to provide three things: 1) an initial supply of open-pollinated seeds 2) the knowledge needed to save them and 3) a space in which to exchange them.

McHugh and Kennedy work with rural Indian farmers to create viable agricultural practices. Photo credit The Hummingbird Project

After receiving donations from various seed companies (all signers of the Safe Seed Pledge) our next step was to develop a forum for exchange that would make those seeds available to the community. A partnership with the Cleveland Public Library soon arose, and the "Seed Library at Cleveland Public Library" was born.

In addition to this traditional seed library, we wanted to establish a digital, independent exchange space online. We imagined a "members area" where local growers could post offers and share or swap seeds on their own terms. No existing web program provided this function, but one of the people working with us on our website was self-proclaimed "cyber hacktivist" Meitar Moscovitz. He wrote a new, open-source WordPress plug-in that enabled community members to join the seed bank and post offers just as we had envisioned. Moreover, his free open-source program has had a positive ripple effect far beyond Cleveland – it has been downloaded over 600 times and been translated into 3 different languages!

Our focus since then has been on education and community building. We host seed saving workshops to expand know-how, as well as seed swaps and film screenings to spread awareness, including the Cleveland premiere of Open Sesame: The Story of Seeds. The community's respons has been highly enthusiastic, and the range of people getting involved with the movement has been very encouraging. In addition to older gardeners (for whom seed saving was once a way of life), we are seeing an encouraging degree of interest from younger generations. It seems that, as soon as Clevelanders are old enough to own gardens, they are old enough to care about them. It is our hope that such a diverse community will secure the project's stability for the present and help ensure its resilience over time.

We have good reason for optimism. The "Seed Library at the Cleveland Public Library" already extends over 5 separate branch locations and the online seed exchange currently has over 250 members. We view this response as a testament to the passion and engagement of the people of Cleveland. Urban farmers, gardeners and all sorts of growers are getting involved in the movement. It is deeply encouraging. Are there challenges to be reckoned with? Absolutely. In the summer of 2014, news broke that the Simpson Seed Library in Mechanicsburg, PA had been shut down by the Pennsylvania Department of Agriculture for violating the state's Seed Act of 2004.

CLEVELAND SEED BANK

Cleveland Seed Library - Source: WKYC-TV

The Seed Act was commercial in nature, and, as the library was not selling seeds, it had not seemed applicable. Nonetheless, the library was told, there were concerns about mislabeling, as well as the potential for cross-pollination and the growth of invasive species. The term "Agri-terrorism" was even used, and the seed library was closed.

Since that time, several other states have followed Pennsylvania's example, and the crack down on seed libraries through the misapplication of commercial seed laws has accelerated. The awareness that this issue could potentially spread to Ohio has loomed over us for months.

But we are not sitting idly by. Instead, we have been working to overcome the problem before it even occurs. We have signed the petition to legalize seeds, and have spread awareness of the issue at all of our events, and through all our social media channels. Moreover, and most importantly, we have arranged a meeting with the Ohio Department of Agriculture to amend seed legislation in our state. This meeting will occur at the end of February 2015, and by the time this report goes to print, we hope to be well on our way towards establishing seed legislation in Ohio that is both just and rational.

Such an accomplishment would not be without precedent.

In mid-January a bill called SF 132 was introduced to the Minnesota State Legislature.

If passed, it would exempt certain organizations, such as seed libraries, from Minnesota seed law. This is a move in the right direction, and we feel that there is much to be hoped for – in Minnesota, in Ohio, and across the United States.

USA - Hawaii Home Rule – Center for Food Safety

Source: *http://www.centerforfoodsafety.org/video/2519/cfs-videos/cfs-hawaii/3689/hawaii-home-rule*

What's Happening?

Hawaii is ground zero for the outdoor experimentation of pesticide-promoting plant technologies, genetically engineered to withstand heavy spraying of toxic chemicals.

On Oahu, Kauai, Maui, and Molokai, chemical and biotechnology companies like Monsanto, Syngenta, Dupont, Dow Chemical, Bayer, and BASF are using prime agricultural land, taking advantage of Hawaii's isolation and year-round growing season, in order to field test crops that have been genetically engineered to withstand greater applications of pesticides.

Despite public health concerns and contamination of natural resources, the State of Hawaii has taken no action to regulate the activities of biotechnology companies performing open-air testing on genetically engineered seed and synthetic pesticides.

So, What's Home Rule?

Kauai, Maui and Hawaii Counties have asserted their county's authority to create policies that address these issues and protect the safety and health of their residents and land. Otherwise known as "Home Rule," Hawaii has shown the world just how important this kind of political power is in the movement to create more safe and sovereign food systems.

Source: Center for Food Safety

How have the Chemical Companies Fought Back?

Source: Center for Food Safety

On Kauai, residents organized to pass Ordinance 960, a measure that requires large argichemical companies to disclose the pesticides they are spraying and observe buffer zones around schools, homes, and hospitals. The chemical companies responded by suing the county rather than telling the community what they are doing.

The citizens of Hawaii Island passed a law prohibiting new GE crop production to protect the island's biodiversity and local farmers from genetic drift. The chemical companies are suing Hawaii County.

On Maui, residents passed a citizen's ballot initiative at the polls – calling for a temporary moratorium on GE crop production until human and environmental health impact assessments are completed. The chemical companies are now suing Maui County.

Read more – Take Action: *http://www.centerforfoodsafety.org/video/2519/cfs-videos/cfs-hawaii/3689/hawaii-home-rule*

USA - Hudson Valley Seed Freedom Initiative

Hudson Valley Seed Library, 29 October 2014

Source: *http://www.seedlibrary.org/blog/declaration-on-seed-freedom/*

This weekend, thanks to the Omega Institute, many of us in the Hudson Valley had the opportunity to hear world-renowned scientist, environmentalist, and seed activist Dr. Vandana Shiva speak. The conference theme, "Building the Collaborative Commons", brought together many individuals and organizations with a stake in the commons including concerned citizens, business leaders, educators, students, politicians, environmentalists and activists.
I'm so grateful to Omega for extending an invitation to the Hudson Valley Seed Library so that we could learn from the many speakers and participate in the discussion. For me, meeting Dr. Shiva in person was a touching honor. After a decade of working on seed issues for our region, I felt reinvigorated to continue our work preserving, developing, and celebrating seed diversity.

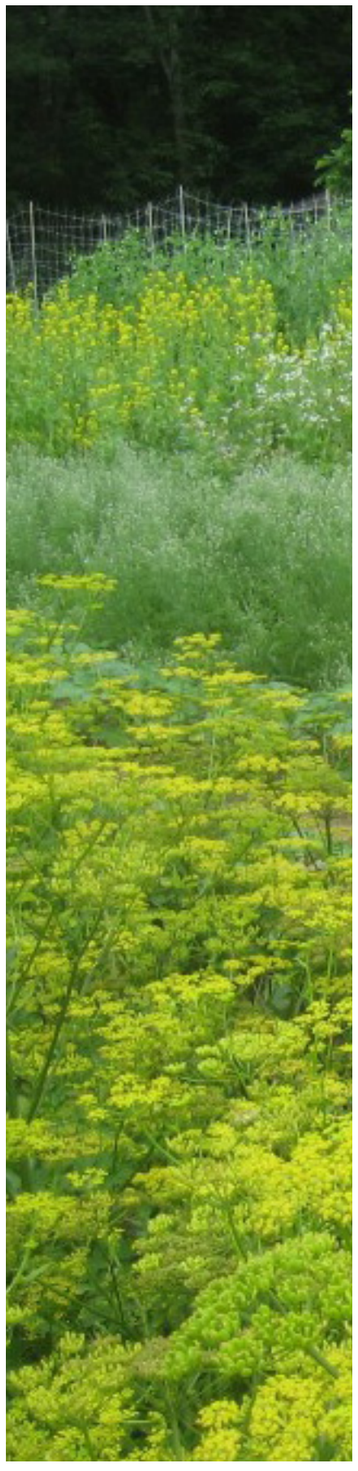
As part of her presentation, Dr. Shiva encouraged everyone to get involved in the Seed Library and challenged us all with the idea of creating a Hudson Valley Seed Freedom Zone. We're here to champion this initiative along with you.

Another activist participating, Premilla Dixit Nag, asked Dr. Shiva if she would meet with farmers in our region before she traveled on to her next event. Premilla and Omega organized an impromptu gathering for growers and farm activists in the Hudson Valley. I was honored to be asked to present alongside Dr. Shiva to lend local perspective on the global issues of corporate seed consolidation, Genetic Engineering, and the patenting of life.

Out of this gathering of more than 30 farmers, gardeners, and food activists came the question, "What does Seed Freedom mean for the Hudson Valley?"

This is a question we've been addressing for the last 10 years. Despite being told by big industry "professionals" and seed "experts" from both public and corporate seed entities that it was "impossible" to have seed sovereignty in our region, we have persevered. What to them is an impossibility because of the mass-industrial corporate model, to us is a necessary challenge worth taking on.

We have developed the skills, built low-tech infrastructure, grown a catalog of diversity for our region, and connected with a devoted following of gardeners and farmers growing with our local seeds.



A corner of the seed farm with arugula, radishes, peas, Chinese cabbage, garden cress, lettuce, and parsnips going to seed. (Source: seedlibrary.org)

Meeting Vandana Shiva- a seed-saver's dream come true! (Source: seedlibrary.org)

What we still need to cultivate is a community of growers with the skills and dedication to help us maintain and increase the diversity of seeds adapted to our region.

Out of our inspiring time with Dr. Shiva we agreed that the first step would be to create a Declaration of Seed Freedom for the Hudson Valley. The Hudson Valley Seed Library signed Vandana Shiva's Declaration on Seed Freedom years ago. As a collective I'd like us to review the declaration and see if there is anything we'd like to add, change, or clarify to make it as regionally adapted as the seeds we grow.

You can find a link to the Declaration on Seed Freedom here: *http://seedfreedom.info/declaration-on-seed-freedom/*

Please leave your thoughts and suggestions in the comments. We'll put them together and work on any changes to send back out to the group. With this in place and agreed on, our next steps will be to share the skills necessary to create a network of seed stewards. Kota, Vandana's son who also spoke at the gathering, has invited the Hudson Valley Seed Library to collaborate with the Seed Freedom website (*http://seedfreedom.info/*) and network to create a series of skill-share videos demonstration low-tech seed saving. We'd like all of you to take part!

Thank you to Omega for bringing us all together and to Dr. Shiva for being a powerful global voice against the corporate takeover of food and a continuing inspiration for local movements like ours.

To get involved, please fill out the Seed Freedom sign-up form at this link (page bottom): *http://www.seedlibrary.org/blog/declaration-on-seed-freedom/* and share this with anyone you think would be interested in helping to rebuild our regional seed commons.

If you would like to receive updates on the Hudson Valley Seed Freedom initiative, please sign up at this link (page bottom): *http://www.seedlibrary.org/blog/declaration-on-seed-freedom/* This email list will only be used for this group. If you would like to receive emails about Hudson Valley Seed Library events, workshops, seed catalog offerings, calls for artists, and seed-saving articles, please sign up through *seedlibrary.org*.

Source : *http://www.seedlibrary.org/blog/declaration-on-seed-freedom/*

More information: *http://www.shareable.net/blog/interviewed-ken-greene-of-hudson-valley-seed-library*

Hudson Valley SEED LIBRARY

Seed saving workshop at the HV Seed Library (Source: seedlibrary.org)

Jars of seeds at the Seed Library (Source: seedlibrary.org)

Source: Grupo Semillas Colombia

Latin America – Javier Carrera

Translated by Harriett Barham

SEEDS OF IDENTITY AND RESISTANCE
Autonomous experiences in Latin America

Javier Carrera
Red de Guardianes de Semillas (Network of Seed Guardians)

Welcome to this brief and by virtue of necessity, incomplete tour of the seeds of Latin America. From the North to the South of the continent one can observe two of the most important centres of plant domestication on the planet: Mesoamerica and the Andes. The legacy of agricultural diversity left by the farmers of these zones is so high that it is only comparable to one other place on earth - Southeast Asia.

Long before the European invasion the American people had far reaching and well travelled trade routes, which favoured the expansion of crop areas and the adaptation of plant species to varying local conditions, thereby creating new varieties. In addition to the incredible continental biodiversity that resulted from this process, species from Asia, Africa and Europe were added to the mix following the multiple invasions of the region.

American agriculture suffered massive deterioration from the 15th century onwards due to the destruction and abandonment of the local systems of food production. These systems had evolved locally over the course of thousands of years, and many were exemplary in terms of levels of food production, sustainability and resilience. Replacing these ancestral techniques with European methods resulted in the majority of cases in the gradual loss of land, aquifers, wild flora and fauna, forest cover, and the genetic diversity of the crops. This then led to poorly adapted systems that are profoundly inefficient and very rarely emulate the productivity of the cultures in the European glacial plains, which remain the unattainable model of these systems.

The abandonment of native foodstuffs was gradual, and only became complete for many regions in the last two decades of the 20th century. Prior to this time they coexisted and mixed with newer products brought over by immigrants from the 'old world, creating a sort of hybrid culinary culture of high nutritional value, commonly known as 'Creole cuisine' in many Latin American countries. Not all ancestral products became part of this colonial diet, and were therefore relegated for the consumption of the poorer classes and indigenous groups. These foods were often easy to produce and of high nutritional value; grown either in small gardens alongside houses and maintained by the women, or on marginal land such as small enclosures, roadsides, or fallow land. Some non-native products introduced by African slaves and immigrants of Moorish descent also became part of popular sustenance. Their consumption by the middle and higher classes remained low as they were often considered to be "indians' food" or "the food of the poor". Foods such as grain amaranth, tomatillos (husk tomato), mung beans and oca were often considered as such; however, other native foodstuffs like corn, the common bean and Zapallo pumpkins (squash) were equally appreciated in the kitchens of the gentry.

From the mid 20th century onwards, with the arrival of the so-called Green Revolution and the introduction of the new agro industrial model, there was a profound change in the way food and diet was approached in the region, with a move towards emulating the 'global diet' imposed by the United States of America. This new diet was seen as a cultural identifier of the higher social classes and the white population, which in turn led indigenous and rural families to leave behind their traditional diets in favour of this new model. In an attempt to demonstrate their changing social status and modernity even the Creole cuisine of the upper classes was abandoned, first in favour of French cuisine, and later the agro industrial diet. In the 70's the genetic erosion and loss of agro-biodiversity was already high and this loss only continued to accelerate in the decades that followed. The 80's and 90's were particularly detrimental in the region as there were no movements fighting to protect agricultural diversity, the subject went unmentioned in the media and the public was yet to become conscious of the problem at hand.

Towards the end of the 90's, social movements across the continent became extremely active, achieving change in various domains and pushing a significant percentage of the population to become more politically active. They put value back into 'the indigenous', rewrote history and questioned the prevailing development models in search of a

way to reconstruct social identity. Slowly but surely, food and its production methods became an important aspect of this struggle. This new Latin American identity that was being created had food at its heart, and its impact was multi-faceted, from historic identity and gastronomy to adequate nutrition, agro-ecological production methods, food-sovereignty and land and water rights.

It was in the midst of all this that civil society movements specifically concerned with the future of seeds were seen to spring up in each and every country. Seeds that are laden with significance: they are the first link in the food chain - a visible and living example of cultural heritage - they represent the gift of life and the promise of a future. So linked are they to the production, preparation and consumption of food that seeds always draw attention and provoke an emotional response in Latin American cultures. As seed are the bearers of such powerful symbolic value, many movements around the continent seek the political protection of both seeds and food diversity, especially in the face of the renewed assault of the Green Revolution which since the 90's has resulted in the massive introduction of a new generation of agrochemicals and genetically modified seeds. The increasing public awareness surrounding food has clashed with the expansion of the agro-industrial model and led to intense confrontations. These clashes have since overflowed from the agricultural domain and become involved in a much larger debate concerning two very different views in relation to: ways of life, development models, supply chains, economic systems and what the ultimate goal of society is meant to be. Agro-ecology and Buen Vivir (Good Living) have sprung up as two broad political ideologies, impossible to encapsulate in a singular definition and under constant development . Despite being decentralised, these new ideas have deeply rooted identities and have managed to expand across the continent, finding advocates and defenders in each and every country and even becoming the focal point for the new national constitutions in the cases of Ecuador and Bolivia.

Agro-industry has been undertaking its own fight to promote the image of the benefits of industrial capitalist progress through continuous media campaigns and alongside permanent lobbying and the infiltration of government. Their businesslike tactics are often illegitimate but have allowed for their continued expansion into the fields and kitchens of the continent. The concentration of economic and political power, land grabbing, water privatisation, the aggressive introduction of mining and heightened state repression are but some of the characteristics of a political atmosphere which favours large corporations (often built on foreign capital invested into the country either directly or through local entrepreneurs); seeds are but another of these related issues.

Not all Latin American countries signed the international treaty UPOV 91 relating to the intellectual property rights over plant varieties. However, in practice, all governments on the continent are attempting or have achieved the implementation of laws which follow the basic principles of said treaty:

- Grant intellectual property rights covering seeds.
- Create a national list of approved seeds following a list of criteria that favours industrial seeds.
- Ban or limit the circulation of seeds that do not appear in said listing, in other words all non industrial seeds.

Due to social protest in various countries over the course of the past few years, state policies have grown to allow for the limited circulation of peasant seeds, also known as Creole or even folkloric seeds. However such policies have shown to be inadequate in slowing genetic erosion and continue to favour industrial seeds.

In the majority of cases the introduction of genetically modified (GM) crops goes hand in hand with the implementation of these guidelines, as part of a comprehensive model designed to replace peasant seeds with industrial seeds.
In the last 20 years political activism and the protection of free seeds has been carried out by two types of actors:

- Peasant and indigenous organisations with wide appeal and social presence.
- Non Governmental organisations and individuals, scientists, chefs (cooks), experts and activists that counsel social organisations and speak publicly about the issue.

The struggle has centred mainly around the issue of transgenic crops: to stop them entering regions they have yet to be legally allowed into (Ecuador, Peru, the altiplano of Bolivia), and to denounce their effects and attempt to remove them from regions where they have already become established (Costa Rica, Mexico, Colombia, Argentina, Brazil and Chile). The struggle surrounding the UPOV 91 treaty and its serious long term effects on agro-biodiversity has received less emphasis thus far, partly due to the fact that the short term effects have yet to be visible, except in a few cases such as that of Colombia where uncertified seeds are being destroyed by police forces.

The other front line in the fight for seeds is more practical: the work to recover, multiply and increase the circulation of free seeds.

From the 60's onwards, state run agrarian or mixed research institutes have been up and running in all the countries of the continent, with dedicated seed programs. They tend to be similar in many ways, from their names (INIAP, INDA, INA) to their origins and objectives. From their beginnings they have had a double mandate: to collect, catalogue and store specimens of national agricultural diversity (and send them to the global north) and also to create local hybrid varieties of certain commercially interesting crops that would work within the agro industrial model of the green revolution. The creation of said institutes was largely driven and financed by the Rockefeller Foundation, with the backing of the Ford Foundation and the IDA, as part of a North American strategy to expand a model based on monoculture, agrochemicals and mechanisation which relied on seeds specifically adapted to said system.

Thanks to these institutes, germplasm banks in the United States have been able to get their hands on an enormous variety of seeds from Latin América; unfortunately the same cannot be said for the people of the countries from which they originate. In many cases, access to the guarded collections in these germplasm banks has been difficult if not impossible for local producers, as programs for the return of germplasms are limited where they do exist at all. The financing of these centers is uncertain, hovering between government aid or control and self-financing through the sale of seeds and other services. In practice this constitutes a risk to the collections, some of which have been irretrievably lost due to a lack of resources.

This leaves no answer to the growing demand for free and organic seeds on behalf of the population. To respond to said demand, seed groups have been organising across the continent, generally made up of autonomous networks, founded and coordinated by ordinary citizens, that bring together families of independent seed producers. These families are called Semilleristas (Seedists), Cuidadores de Semillas (Seed Caretakers) or Guardianas de Semillas (Seed Guardians). These networks tend to be based around decentralised and horizontal organisational models, with a particular emphasis on communication and group meetings; although some have chosen to take the route to become registered charities along with the bureaucratic load that that implies.

A sacred, 1800 year old Arrayán Huila tree in Tola Chica indigenous comunity. Gives seeds avery 4 years, seeds remain 48 hours active. Indigenous knowledge is essential to keep native seeds (©Red de Guardianes de Semillas) «

The autonomous networks don't receive permanent financing but base their work on consistent volunteering efforts by their members to maintain the production and distributions of seeds. By keeping their administrative body to a minimum their bureaucratic requirements are almost nonexistent, yet despite this, in some cases they have achieved impressive results not only in recovering, reproducing and distributing seeds but also through their positive influence on society. The scarcity of access to resources has meant that each individual network has developed their own strategies, striving for the best possible efficiency to achieve their objectives.

For the purpose of this report we have undertaken case-studies of five Latin American networks if this type, through interviews with the local coordinators. All of these national networks are part of a growing continental network. We began with two very broad questions:

1. Which strategies have been the most successful in promoting the freedom of seeds and the use of free seeds?

2. What concrete threats has seed freedom faced in your country?

Let us allow for these voices to express themselves, from the North to the South of Latin America:

Chile

Valentina Vives Granella, National coordinator, Red de Semillas Libres de Chile (RSLChile, Chilean Network for Free Seeds)

http://semillaslibres.cl/

RSLChile began as recently as 2011, however in that short time its growth has been rapid, thanks in part to the high level of interest surrounding seeds and ecological production in Chile.

1. Which strategies have been the most successful in promoting the freedom of seeds and the use of free seeds?

The network is currently made up of seven regional groups: the 5th region (Valparaíso), the metropolitan region (Santiago), Maipo, Biobío, Wallmapu, Willi Mapu and Chiloé, all differing in many aspects. Some have implemented formalized policies whilst others remain more informal, but all are part of both the national and continental network. The activities of each individual network depend on the interests and duties of its members and coordinators. The Wallmapu network for example has strong ties to the Mapuche culture and the international Slow Food movement, and many of its activities are linked to foodstuffs with a cultural and territorial identity. The Biobío network is more technical and based around educational aspects whereas in Valparaíso there are fewer protocols and structures and their activities are focused on production practices and permaculture. For example the "Movimiento Cerealero" (Cereal Movement), where producers come together towork in partnerships to save ancient varieties of seeds, which unites the entire chain of production all the way through to the commercialisation of the final product. The national network is nourished and sustained by this diversity of actions and interests. Until now local efforts have remained informal, but the hope is to begin formalising them in January 2015.

Members of these networks are natural people (in legal terms), whose very participation is a vote of confidence in our work, and who devote their time, energy and work to the network. It is difficult to ascertain exactly how many people are currently members; there are approximately 60 active members whilst around 100 more identify as 'seed friends' and participate in a more peripheral manner. RSLChile enjoys a diverse membership - in terms of age, position and daily tasks - all united by a commitment to seeds as the source of the food from which human beings flourish (physically, spiritually, socially, culturally, etc.). As of yet there is no formal membership, although the hope is to implement this in 2015.
The main and most effective act of RSLChile has been the organization of Seasonal Meetings (Encuentro Estacionales). Since being introduced in 2012 they have taken place approximately once every three months, in a different locality or region each time and with a wide variety of attendees, attracting crowds of between 25 and 150 participants.

Other activities also take place within these meeting spaces, such as seed exchanges, workshops, exhibitions and discussions. These events retain a very human and informal feeling with a line-up subject to change at a moment's notice, people gather in circles with the simple goal of sharing experiences and visions, learning and immersing the collective in love and kindness for seeds and the Earth. The meetings are generally organised on the basis of petitions from the people of a specific region, and many of the local networks grew in this way, thanks to the enthusiasm generated by such meetings. They are the catalysts of the movement.

RSLChile doesn't have banks or houses of organised seeds to fall back on, there is one in Copequén in the 6th region, but its reach remains only local. The central coordination office currently has a collection of low profile seeds which is open to the public, and members of the network are aiming to organise their own seed houses once the local outposts have been formalised, hopefully in 2015.

It is very difficult to quantify the quantity and variety of seeds that are being worked with, there is no plan to create a national registry of seeds - each local network is considered responsible for their own records and expected to coordinate their work with others free seed centers around the country.

RED SEMILLAS LIBRES CHILE

Oca, an ancient root from the andes (©Red de Guardianes de Semillas)

Highest in demand are horticultural seeds, followed by medicinal seeds and then native tree varieties. At times requests come in for provisions of seeds by the kilo: mostly for legumes, cereals and fodder crops.
The recovery strategy for seeds has been the promotion of native and creole (local) varieties, the network avoids importation when producing in large quantities. They work to adapt foreign seeds to local conditions before promoting their use. Another essential strategy has been constant communication, through both email newsletters and social networking sites.

Their relationship with public organisations and NGO's has been very important: spokespeople and coordinators from the networks give talks and participate in forums at schools, universities, communities and local government. They achieve political advocacy through participating in the creation of proposals at a civil society level.

Finally, RSLChile has decided to legalise an administrative body which would be able to provide services, collect financial funding and build formal alliances with other institutions. This would be in the form of a Service Cooperative going by the name of Semilla Austral (Southern Seed). In the medium to long term, the hope is that it would support the formation of cooperatives within each local (or bioregional) network.

The impact RSLChile has had within the country has been enormous, finding their own space within important spheres of political debate and generating an increasing level of interest within the population, especially with young and indigenous peoples.

2. What concrete threats has seed freedom faced in your country?

Currently our greatest worry is the Law on Plant Breeders Rights and the Protection of Seeds and Traditional Practices (Ley de Derechos de Obtentores Vegetales y de Protección de las Semillas y Prácticas Tradicionales) which is under review to bring it in line with the international treaty UPOV 91. The aim is to reorganise the entire public system in relation to seeds in accordance with the application of this treaty, which would be a national catastrophe in terms of germplasm and traditional agricultural practices. We consider this to mask the true nature of the reforms, although the law does make some simple strategic concessions to include peasant seeds, ultimately it is but another implementation of the UPOV 91 and the Codex Alimentarius.
Another issue up for debate is certification. In Chile, a participatory organic certification does legally exist; however its application is messy and bureaucratic, and doesn't work well in practice. It is for this reason that we maintain that there are no certification systems in place that truly belong (and include cultural identity) and that are easy to use.

Equally at issue is the inherent contradiction that exists between what is being said by the Chilean government on the one hand, and its actions on the other. It declared this year dedicated to Familial and Peasant Agriculture and the government has called for panels and committees to promote organic agriculture, yet in practice the entire public apparatus only increases the use of synthetic packages, which leads in turn to the use of industrial seeds and agrochemicals. A vicious cycle of dependency is being promoted, which has already caused untold damage (cultural and biological erosion, land loss, water contamination and much more).

On a wider level the state is abandoning the agricultural credit sector and handing it over to private banking. This only makes the conditions of indebtedness that much harder for rural populations and farmers, and ultimately favours land grabbing.

The Chilean state has yet to end its aggressive push towards an agro exportation model. The strategy most in vogue currently is to link (or for want of a better word, chain) rural workers to this model through 'clusters' and 'clubs' of producers, who act as intermediaries for contracts with large companies and supermarkets, which in reality imposes increasingly tough and unjust conditions upon the producers.

Overall however, the greatest threat is without a doubt the social apathy which seems to characterise our society, the lack of collective action which in itself is a product of the social repression our people experienced during the very long dictatorship years - the wounds of which are far from having healed.

Red de Guardianes de Semillas
Sembrando para el futuro

Ecuador

Javier Carrera, Red de Guardianes de Semillas (Seed Guardians Network)

www.redsemillas.org

The Seed Guardians Network (RGS) was founded in November 2002, although plans for its creation were in the pipeline from 2000 but still in search of funding. Resources were hard to come by as the issue had yet to gain as much recognition as it has today, so four friends declared the network founded after an afternoon spent talking shop in a small cafe in the village of Tumbaco, Ecuador, with no economic support at all.

Throughout its history the RGS has maintained certain essential characteristics: independence in its decision making, horizontal organisation and hierarchy in its governance, and an emphasis on practical and radical agro-ecological work.

Source: Red de Guardianes de Semillas Ecuador

1. Which strategies have been the most successful in promoting the freedom of seeds and the use of free seeds?

At the top of that list would have to be the governance model of the network, which differs from a more traditional organisational model. The main decision making body which fulfills legislative functions and general planning, is the Assembly of the network which comes together once a year. All members have a voice in this space, including the most recently joined, however only members who have been recognised as Seed Guardians - for their knowledge, honesty, commitment and outreach work - have the right to vote. There are currently around 100 Guardian members at this time, but on average only half of these members are able to attend the yearly meeting. 60% of them are women, and only 30% of members have completed a degree in higher education. In any case, it is very rare for the Assembly to call a vote as the majority of decisions are made by consensus, following a discussion around a seated circle.

Since 2012, the Assembly decides upon which lines of work to pursue, which are then put into practice over the course of the year by coordinating committees. These come together as and when needed, and are staffed by members who have a particular interest in the subject (interest groups). There is a Counsel tasked with protecting the good name of the network, promoting respectful relationships amongst members and generally upholding the network's culture. A culture which is recognised for its ecological radicalism, the excellence of its work and the human quality of its members and social processes.

The members of the network are natural persons (in legal terms), although they may represent families, organisations or communities. Each member has complete autonomy: the network is simply a space for meeting, exchanging and for the coordination of projects involving several members. The network continually strives to promote the identity and work of its members, empowering them at both a local and national level; the individuals are the key actors, the stars of the show.

These organisational characteristics are important, as it is thanks to them that the RGS has achieved such incredible results with such minimal economic resources. There is no central planning, the network acts more like a river into which smaller streams converge, bringing with them the interests and autonomous actions of their members. A river which flows slowly or speeds up depending on the prevailing conditions, which overcomes obstacles in its path in often unexpected ways and whose course is rewritten with each and every step. But most importantly, a river which never fails to move forward towards its ultimate goal: the construction of a more just and fair society in harmony with Nature.

In terms of the seeds themselves, the most relevant and successful strategies have been:

- Seed exchanges at national and regional meetings.
- Group trips to the estates of Guardian members, which promote a deeper unity within the group.
- The dynamic distribution of seeds: The National Centre for the Coordination of Seeds (the seed house for the network) maintains a catalogued collection of seeds, the main objective of which is not to act as a reserve but to get the collected seeds back into circulation fast, as we believe that the best seed bank is the earth itself. The catalogue is published on the network's website. The centre receives requests for all kinds of seeds, and in cases where they are unable to immediately respond from their own stock, they search out other members who may be able to step in. Members can obtain seeds following the seed credit model, by which they commit to returning 300% of what they originally took without other cost. To allow for the seed bank's collection to continue to grow the returned seeds don't necessarily have to be of the same species. The general public can also buy or exchange seeds and in some cases donations are made. The centre cares for its collections through germination tests and uses specially adapted storage and cataloguing techniques which are overseen by one or two permanent staff members and up to five volunteers.
- Seed recovery campaigns: each year one endangered native species in need of rapid multiplication is chosen and seeds are sought out amongst members of the network. These are then multiplied in the vegetable gardens and larger plantations of the members to be later distributed to the public, ensuring that those who receive the seeds are equally committed to multiplying and distributing them even further. Alongside the seeds themselves, information is also distributed concerning the growth characteristics and use of the species. So far there have been recovery campaigns for the Jícama or Yacón (Smallanthus sonchifolius), the Mauka (Mirabilis expansa), the ancient Manabí maize of the tropical lowlands and the Jatunzara of the, and a three bean locally known as Porotón (Erythrina edulis). 2015 is the year of the Penco (Agave americana). Since 2013 the Recovery Campaigns have been linked to the Slow Food movement's 'Ark of Taste', as members of the network are also part of its national committee.
- The production of guaranteed quality seeds for sale: In the past two years we have been actively working on a system which includes: the creation and implementation of a Participatory Guarantee System designed specifically for the production of organic seeds, the development of adapted production protocols for seed species which are in high demand, and the training of specialised personnel for the production of seeds of guaranteed quality within said system. We hope to be able to supply organic producers around the country with a selection of high quality and locally adapted seeds in the near future.
- To facilitate connections: both our members and the general public frequently write to us in search of a specific seed, the advice of an expert, or a particular piece of information. The network's social coordination forwards such demands to all members, collecting and redirecting all answers as well. Thanks to this, the network acts as an enormous bank of knowledge, products and services, all interconnected for the common good of the Ecuadorian people, and time and again it has proved its worth. For example, we recently compiled a database of experts in native bees and located a lesser-known native plant (the Ratania), all with the help of the network.

Beyond their practical work with seeds the RSG has developed complementary strategies to further broadcast their message, which with time have become permanent processes forming part of their own direct lines of action:

- Education: The network allows its members the possibility to broadcast and co-organise all types of educational events relative to practical ecology and somehow related to seeds. They have previously organised certified courses in permaculture, urban gardens, edible forests, ancient agroecology, food history, alpaca fibre uses and patrimonial cooking, amongst others. The educational branch of the RGS is called the Ecoversity of the Equatorial Andes (Ecoversidad de los Andes Ecuatoriales, www.ecoversidad.redsemillas.org) and works semi autonomously although it continues to act under supervision from the network's Council. Ecoversity events must all meet a high standard in terms of the issues they cover and their methodology, whilst also being practical and fun. Education within the agroecology sector is essential for the development of new models to allow free seeds to continue to evolve.
- Commerce: Through the management of various small markets and shops, the RGS has been acting as a living laboratory since 2011 - developing methods, evaluating proposals and getting to know products - in a solidarity-based market culture directly controlled by its members, both as producers and consumers. The logic behind this tactic is that free seeds won't blossom much further from the tiny niche within which they are barely surviving at the moment, if the public doesn't considerably increase the consumption of their fruits. So far they have developed their own accounting methods, customer service culture and product management model, although without a doubt their most widely recognised achievement was the creation of the Participatory Guarantee System "Ecological Flower" (Flor Ecológica). A simple visual system easily understood by the public, it promotes unity between the producers themselves and also in their relationship with consumers. We consider that the seed producers who invest so much time in their professional development and in the selection of their seeds for optimum quality, deserve to have their work supported by the public through the purchase of their seeds. To be a Seed Guardian is to be a craftsman of the highest level. Furthermore, we believe that the current economic problems don't stem from economic exchange as such, which is both necessary and sacred, but from the manner in which the economy has been seized and continues to be controlled by groups of power. We believe that it is our duty to take back such spaces.
- Consultancy and outreach: members of the RSG have been providing consultancy services for more than a decade, concerning anything from practical issues to social and political concerns for individuals as well as private enterprises, rural organisations and state agencies. They also openly participate in the public media, often through interviews and always with the aim of promoting the issue of seeds and environmental awareness.

Mexico Corn (©Red de Guardianes de Semillas)

Publications: the RGS formerly published a magazine, called Allpa (earth in Kichwa) but printing stopped after number 9. It was well regarded in Latin America for the quality of its content and graphics, which were within reach of and well received by the general public. In 2015 it has returned as a digital magazine, hoping to reach a wider audience in the spanish speaking world. Previous copies can be read and downloaded for free at www.allpa.redsemillas.org and the digital magazine is hosted at *www.allpachaski.com.*

2. What concrete threats has seed freedom faced in your country?

The greatest threat at the moment is the possibility of the Ecuadorian state implementing a new seed law along the lines of the UPOV 91 treaty, although Ecuador didn't actually sign the treaty itself. A couple of years ago a similar proposal was made by the Minister for Agriculture Livestock and Fishing, centering around support for the industrial seed industry and only leaving a minimal window of action for free seeds that fall under the "folkloric seeds" denomination. This proposal was in competition with four others from various different state agencies, including one put forward by a civil society participatory committee made up of over 2000 people belonging to social organisations. Known as the COPISA law, this last proposal protected free seeds in a variety of ways, including limiting the field of action of industrial seeds, making clear the dangerous exception that these seeds represent and the need to control them. None of the proposals were accepted by the National Assembly, which has yet to comment on the matter, but it is suspected that they will draw up a law combining elements from the different proposals, but probably favouring the agro-industrial model. The often heard discourse from the government remains the same: that to be competitive and increase productivity the certification of seeds is essential, as if low agricultural productivity was entirely due to low quality seeds, when in reality depleted soils and inadequate production systems are to blame. They talk of allowing participatory guarantee systems to exist, but designed and controlled by one or more state agencies. Furthermore, during a state visit to the European Union, the President of the Republic offered to remove the current constitutional ban on the patenting of ancestral knowledge.
The implementation of this model worries us because it could render the work that the Network of Seed Guardians currently does, illegal, or at best impose a bureaucratic burden which would make our work much harder. The current government has given the State excessive amounts of control over the processes of civil society.

The other great concern is the possible legalisation of GM crops. The government has on various occasions shown its support for such crops and the need to change the constitution to allow them, as in its current state (approved by 80% of the population in 2008) transgenics are only allowed to be planted in the country in case of emergency and after approval from the National Assembly. On more than one occasion the debate has reached the media, who unfortunately also support the agro-industrial model, as does the country's scientific community. But the opposition has been strong, from social organisations to scientists and cooks, and at the moment the topic is largely dormant.

Source: Bloque Verde

Costa Rica

Fabián Pacheco, Bloque Verde (1) (Green Bloc)

http://bloqueverde.blogspot.com/

The Green Bloc (Bloque Verde) is an organisation made up of students, academics, farmers, and citizens in general who all self identify as ecologists. Their actions have been fundamental not only in slowing the advances of transgenic crops in Costa Rica, but also in promoting the use of free seeds, agroecology and food-sovereignty.

1. Which strategies have been the most successful in promoting the freedom of seeds and the use of free seeds?

The most important strategy has been the organisation of Festivals. They unite culinary art grounded in local agro-biodiversity with cultural identity and traditions. The aim is to revalue traditional knowledge, recover seeds and the cultural information they carry, and to return said seeds to their ancestral territorial origins. The Festivals, which happen on a bimonthly basis, also serve to revitalise local economies and since 2005 more than 30 have taken place.

Secondly, and on a more practical level, we organise technical training courses within communities. As well as the chosen discussion topics other knowledge is shared, concerning best practices following seed harvesting, reproduction tips and techniques, and basic plant genetics for seed producers.

Thirdly, and partly as a result of the previous two processes, we have been working on the creation of seed Houses. Three of these centres are already well established and work to protect and distribute collections of seeds. Currently many people linked to the movement are dedicating parts of their gardens to the production of seeds, which then supply these Houses.

Moving on to our political agenda, in the past few years there has been much work on the Declaration of GMO Free Territories (Declaratoria de Territorios Libres de Transgénicos) which has successfully collected signatures from 75 municipal councils declaring themselves Free From GMO's (this represents 92% of municipal councils in the country). The Festivals were an important platform for the promotion of this proposal, linking it to the enjoyment and pleasure of food, autonomy and cultural identity. The anti-transgenic movement was first launched in 2005.

As well as signing the Free From GMO declarations, there is also a push for zones which have representative populations of important seeds to declare themselves as Sanctuary Districts for Farmer's Seeds (Cantones Santuarios de Semillas Campesinas). These sanctuaries can then develop their own agendas for activities.

The most notable example is the Municipality of Talamanca, an important territory due to the presence of indigenous communities and because 70% of the land remains covered in native forest. They celebrate the Talamancan day of the Rural Seed, a large festival which has received national recognition.

Ultimately, what has helped us most in this campaign is having understood the art of how to capture people's attention and win their solidarity: the colours and enjoyment of food, music, and the pleasure of communal activities. Happiness. This is what has roused such enthusiastic participation from the population, creating such a rich network of activists focused on ecology and social justice.

2. What concrete threats has seed freedom faced in your country?

The approval of the UPOV 91 law is of great concern to us, it came within a larger framework, including other complementary laws, as part of the free trade treaty with the USA in 2011. Another worrying issue in the introduction of genetically modified corn as a grain to be used for animal feed and in the production of industrial foodstuffs. There is no control over the use of this grain, which renders our bio-security vulnerable as they could be being planted.
Monsanto attempted to have genetically modified corn recognised as a seed, but was unsuccessful thanks to the citizen marches which took place, and in which we took part.

Costa Rica produces genetically modified cotton seeds and soy for the export market, but they are not authorised for use within the country. However, this remains a permanent concern. There are also experimental transgenic crops of maize, pineapples, bananas, rice and tannia (locally known as Tiquisque; Xanthosoma sagittifolium). To date there have been no requests to sow these genetically modified crops for their commercial use within the country.

The total area covered by transgenic crops, both experimental and for export, stood at a little over 630 acres in 2013.

Phytosanitary Protection Law n.° 7664 which allows for the growing of genetically modified organisms in the country has had two amparo applications filed against it before the Constitutional Chamber. One of them was presented by members of the civil sector (farmers, ecologists and a deputy from the Legislative Assembly) in December 2012, and the other was brought forward by the Ombudsman's office in May 2013. Basically, both appeals maintain that the law is unconstitutional as it doesn't take into account any environmental impact studies and because it restricts civil society's access to technical information. According to the Constitutional Chamber, the state won't be able to give authorisations for the introduction of GM varieties until the appeals in question have been resolved, and until that moment all new requests for the sowing of such seeds will remain paralysed.

Seed exchange in Laguna Verde, Chile (©Red de Guardianes de Semillas)

1. In the writing of this article two sources were used: one direct interview with Fabián Pacheco, and the article "Situación de los cultivos transgénicos en Costa Rica" (the Situation of GM Crops in Costa Rica) by Fabián Pacheco and Jaime E. García González, published in Acta Académica 54 (May 2014): pp 29-60, reproduced with the authorisation of the author.

Guatemala

Ronaldo Lec Ajcot, Instituto Mesoamericano de Permacultura (IMAP) (Mesoamerican Permaculture Institute)

https://imapermacultura.wordpress.com/

The IMAP was founded in 2000 to act as an incentive for Guatemalan society to construct sustainable ways of life, emphasising work with seeds as one of their main lines of work.

1. Which strategies have been the most successful in promoting the freedom of seeds and the use of free seeds?

We have worked hard to promote seeds in various ways:
For years we have been giving workshops and classes on the creation of community seed banks, including the necessary production techniques. There aren't many organisations working on this issue in the country.

We have our own seed bank. Our aim is not to store seeds there, but to channel and redistribute them. We consider the land itself to be the best place to store seeds. In the seed bank seeds can be bought, sold or exchanged, we even give seed credit and make donations (particularly to schools).
We have been criticised for selling seeds, with people having argued that seeds belong to everyone, but we realized that when something belongs to everyone, unfortunately nobody truly takes care of it. We have struggled for many years now with how to attach economic value to native and Creole seeds, as a way to incentivise farmers and peasants in their production. We

Source: IMAP

came to the conclusion that the best way was through their sale. This way producers who enjoy working with seeds can earn a living choosing quality seeds. The other interest we have is in responding to the demand from the organic and alternative agriculture movement, who had no source of seeds from within the country until we began our work.

The IMAP seed bank is supplied by around fifty members, woven into a network. It is currently economically self sufficient, although it needs more producers to respond to the increase in demand.

As a result of the workshops that we provide, six new seeds banks have sprung up across the country. They are linked to both the IMAP and the Network for Guatemalan Food Sovereignty and Security (REDSSAG, Red de Seguridad y Soberanía Alimentaria de Guatemala), a collective that brings together agroecology movements across the country. The largest is the Cachualón Seed Bank which gathers 200 producers.

Another important field of work is the cultural appreciation of the seed, of the knowledge tied to the seeds themselves, the identity, the history and the cuisine. We continually organise workshops to teach about the preparation of native plants for cooking, especially the highly nutritive varieties such as chaya (Tree spinach), amaranth, chia and cacao.
Lastly, we take part in markets and agricultural fairs organised by the REDSSAG.

Source: IMAP

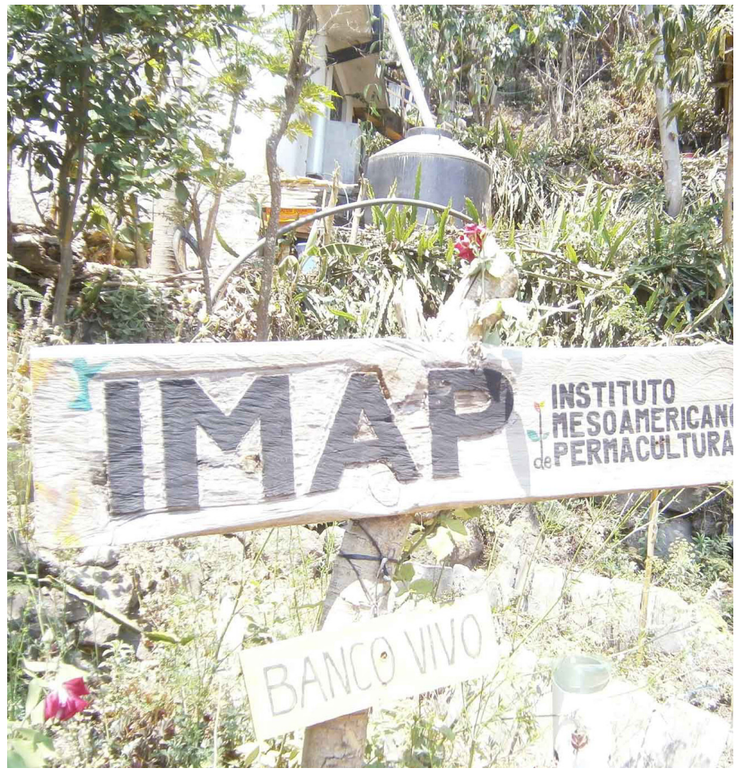
IMAP
Instituto Mesoamericano de Permacultura

2. What concrete threats has seed freedom faced in your country?

Native and creole plants are often devalued. This is part of an environment of loss of culture and local identity which we have been experiencing for decades now.
The model of the green revolution, oriented towards export agriculture, is being imposed and promoted by the state along with universities, cooperation agencies and the large capital business sector.

The established trade laws and the free trade agreement with the United States (TLC) have caused a complete loss of food-sovereignty in the country. Despite this, maize, the nation's main sustenance crop, has not been heavily affected by the model as most of the maize destined for human consumption is produced by rural families.

One serious problem caused by the TLC is that Guatemala can only produce 10% of the seeds that it needs without being sanctioned for unfair competition. Monsanto produces many of the country's seeds (information from the ICTA, http://www.icta.gob.gt/). Guatemala voted against the law which enforced the UPOV treaty guidelines (http://seedmap.org/guatemala-say-no-to-upov/) but in practice the law will come into effect if the country wishes to remain part of the TLC and not pay sanctions. Currently the law has been temporarily repealed, although not entirely withdrawn, and the pressure for it to be applied is surely mounting. We hope to be able to negotiate as Costa Rica did, to allow for some protection of small scale producers.



There is an increasing monopolization of the seed sector with Monsanto buying up seed businesses and there are even rumours circulating that the Agricultural Science and Technology Institute of Guatemala (Instituto de Ciencia y Tecnología Agrícola de Guatemala) may be privatised, and that Monsanto hopes to buy it.

The farming of GM crops is not legally approved in the country, although there have already been trials with commercial crops, so far without permission.

In Guatemala land distribution is very inequitable, one of the worst cases in the hemisphere, which directly impacts food-sovereignty.

Lastly, we are suffering the effects of climate change and this will have a tremendous effect on seeds.

Source: IMAP

México

Adelita San Vicente Tello, Seeds of Life Foundation (Fundación Semillas de Vida)

http://www.semillasdevida.org.mx/

The Seeds of Life Foundation is a civil association founded in 2007, it focuses on the quality of seeds and the knowledge linked to them, in particular relating to Mexican maize and the plants associated with its growth.

1. Which strategies have been the most successful in promoting the freedom of seeds and the use of free seeds?

In Mexico we have found it very helpful to ground our work in rural history, which dates back at least 8000 years. For the countrymen who have inherited from this long tradition, it seems only logical for seeds to be free, as they have worked closely with them for such a large part of their history. It is for this reason that despite the impulse given to the green revolution in the country, less than 25% of the maize sown today is hybrid. To that, we can add the climatic diversity of the country, which has made it harder to standardise production with uniform seed types.

Our work has centered around our support for rural organisations in their different seed-linked activities. Generally we help them to identify and find the varieties of seed which would be best suited to their local environment, through a diagnostic test based on the different types of maize and their associated plants in the ancestral model of mixed crop system known as "Millpa". It is necessary to understand that in Mexico maize is by far the most important crop, our ancestors developed the plant from its wild relatives and still today not only is it eaten here in Mexico, but we still speak and think of food production in terms of maize.

We also support rural plant breeding processes. For example, in certain zones there has been a massal selection of the maize, a process which looks at the whole plant in the context of its growth.

Another essential strategy is the organisation of Seed Fairs, of which there are around 65 every year. At these fairs seeds can be exchanged and sold, and it is up to the farmers to decide what they wish to sell or exchange. This autonomy concerning their economic decisions is an essential aspect of keeping the flow of seeds in their hands and under their control. We have also worked to recover the cultural identity and the traditions associated with seeds. A good example being the blessing rituals of the seeds, community activities in which syncretism is achieved between christianity and ancestral spirituality, a balance between the pre hispanic, colonial and modern.

We continually chat with other organisations about the issue of seeds, covering all aspects of the issue: practical, social, cultural and political. It is interesting to observe how seeds can trigger other processes.

We are also working with vegetable seeds, which are important in Mexico because they are currently dominated by corporations. There have been successful examples of rural production of these seeds, but only on a small scale.

Mexico is the only country whose gastronomy has been declared a Heritage of Humanity. We are capitalising on this event to push forth the issue of culture, the association of the seed with our food heritage, as well as singling out rural seeds as an essential part of the search for better nutrition. As part of our political agenda we have joined the Sin Maiz no hay País campaign (No Maize, No Country) (*http://www.sinmaiznohaypais.org/*).

Although many of us who work here at Seeds of Life were not born in the countryside, as peasants or farmers, we have become accustomed to growing part of our own food from seeds, as part of a personal transformation on the way to achieving global change.

One very positive aspect of Mexico is that over 50% of the territory is in the hands of social partners: communities and ejidos, as a result of the agrarian reform initiated during the Mexican Revolution. This brings us great hope, as to have a rural population that owns and is settled on its land is a requisite for the successful conservation of rural seeds, with the goal of achieving Food Sovereignty. Perhaps thanks to this fact, when the National Council for the Knowledge and Use of Biodiversity (Consejo Nacional para el Conocimiento y Uso de la Biodiversidad) organised a national collection of maize, they found today a greater diversity than was seen in the 60's at the very beginning of the green revolution.

The next meeting of the global Committee for Biological Diversity will take place in Mexico in 2016.

2. What concrete threats has seed freedom faced in your country?

Mexico has been one of the largest development centres of the green revolution since its very beginnings as many Mexican agronomists, now in their seventies, all studied under this ideological framework in the USA.

Source: Sin Maiz no Hay Pais

State institutions have been shut down by the state, and there is now a strong campaign on behalf of transnational corporations to introduce hybrid seeds across the country, including in zones with climates that would be unsuited to said crops.
The biggest lasting damage came from shock of the arrival of the transnational corporations 20 odd years ago, with the Free Trade Agreement with North America. Since then our government has been worn down by said transnational corporations, seeking to help them prosper and benefit, often to the detriment of the Mexican population.

The contamination from GMO's in Mexican maize is a very real issue, but for now the damage remains reversible. The production of GM crops is not currently legal in the country, and from the 5th July 2013 by legal order, the Mexican government has been unable to grant such permissions. For now it is only a precautionary measure for the duration of a trial which was initiated by the Collective Action group (Acción Colectiva) and to which 53 social groups, including 20 rural and indigenous organisations, have joined fighting against the government agencies and transnational organisations (Monsanto, Pioneer, Dow, Syngenta, Dupont) who are responsible for the expansion of GMO's in the country.

Seed Guardians (©Red de Guardianes de Semillas)

Conclusions

Latin American cultures have a profound respect for seeds and a natural inclination to defend their freedom, a character trait inherited from their agricultural ancestors and their long history of struggles for their own freedoms, well being and justice - struggles which have left an indelible mark on society across the continent.

The strategies developed by the different movements are diverse, and although they all respond to the realities of a specific nation or cultural region, without a doubt this cross-pollination of ideas and experiences will be of great benefit to all. On the other hand the strategies used by the agricultural industry are uniform. The threats identified in the different interviews all point to a single strategy that is being used to introduce industrial seeds on the continent, although it may present some local variations it is in essence the same:

- the appropriation of ancestral knowledge and of biodiversity
- a seed registry and a ban or restriction on the use and circulation of free seeds
- massive introduction of GMO's
- monopolised domination of the seed sector by well know transnational corporations in the field, through lobbying and infiltration of the government as well as a mediatic assault of the population to further their interests.

The future of seeds on the continent depends on a variety of actors: governments, rural and indigenous organisations, business groups, intellectuals, academics, agronomists and politicians. But without a doubt it also depends on a host of new actors, such as the independent networks of Caretakers and Seed Guardians, who have been able to adapt, recover and promote seeds, winning the heart of the people in the process and who continue to fight tirelessly for our food and the future wellbeing of humanity, one seed at a time.

Source: Red Semillas Libres Chile

Source:
geografiade5proffaustto.
blogspot.com

Argentina - Campaña No a la Ley Monsanto de Semillas en Argentina

Don't patent our lives.

A campaign against seed privatization in Argentina.

A new threat from agro-biotech corporations looms ahead of us: the proposed amendment to the current legislation on seeds. A draft bill lobbied for by large agribusiness corporations proposes to amend the Seeds and Phytogenetic Creations Act [Ley de Semillas y Creaciones Fitogenéticas] (Law Nº 20,247 from 1973). Its preliminary version is undergoing final review by the Executive Branch before being submitted to Congress for legislative debate.

In a context marked by the aggressive attack of neoliberalism with its impact on the production and trade of food (now transformed into a commodity) on a global scale, the expansion of agricultural extractivism, a slackening of environmental regulations and the disappearance of small farms all constitute part of a strategic corporate offensive which we hereby denounce.

The proposed amendment of the Seeds Act is part of this set of policies. In recent years different strategies aimed at patenting seeds have been attempted throughout Latin America and the Caribbean. In many cases, those initiatives, promoted by the governments of the day and transnational corporations like Monsanto, have been thwarted by social resistance.

In spite of the economic crisis and climate change, the soy-dependent economic model –a paradigm of agricultural extractivism– has continued to expand in Argentina. By devaluating the Argentine peso earlier this year, the Argentine Government allowed the agro-export complex to (once again) pocket exorbitant profits. Soybean farmers recently celebrated the fact that, for the first time in history, the area planted with GM soy surpassed 50 million acres. At the same time, agribusiness corporations and their partners speculate with profiting from further devaluation measures. These could be motivated, to a large degree, by the international financial crisis, current foreign exchange policies and inflation affecting mainly the incomes of the lower classes.

As this paradigm expands, its devastating social and environmental consequences aggravate. The so-called "economic growth" of recent years, celebrated by government and corporations alike, represents the "friendly face" of an agro-mineral export model based on sacrificing people, taking over their territories, and devastating nature.

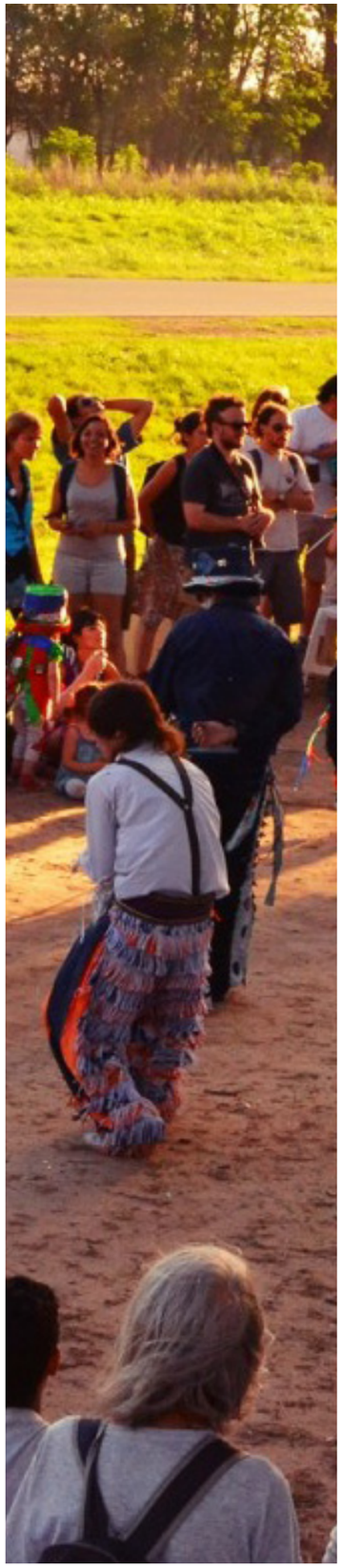
Suffice it to say that in recent years, the expansion of the agricultural frontier has led to deforesting over 6 million acres of native forests; massive agrotoxic spraying, having serious consequences for human health (including cancer and deformities), topped 300 million liters per year; soil depletion is aggravated still further as a consequence of monoculture and no-till farming with its associated technological package (including the use of glyphosate). All of this leads to the forced relocation of rural populations, which stems from the expansion of the agricultural frontier, a further eroding of local economies, the destruction of ancient cultures and uprooting of communities, forcing millions out of their hometowns and into the cities in search of new sources of income to support their families, where they swell the overcrowded and poverty-stricken slums of large cities.

In spite of such a scenario, the criticism levelled at the agro-mineral export model and evidence of its negative consequences, the national government continues to consolidate the agribusiness model, with the acquiescence of a large proportion of the opposition. Thus, the progressive implementation of the 2020 Strategic Agricultural Food and Agro Industrial Program [Plan Estratégico Agroalimentario y Agroindustrial 2020, PEAA 2020], designed by the Ministry of Agriculture, establishes as one of its main goals to raise grain production (mostly soybeans) to 160 million tons within 6 (six) years. This implies a dramatic increase in crop acreage from the current 84 million acres to 103 million acres.

Such a dramatic expansion would only aggravate the current social and environmental consequences of a production system which is part of the set of extractivist models which are widespread in Latin America.

A number of other facts illustrate the position adopted by the Argentine government in pursuing its goal of consolidating the agribusiness model: ever since Roundup Ready soybeans were approved for use in Argentina in 1996, the Argentine State–through the National Agricultural Biotechnology Commission, CONABIA–granted trading permits for 30 transgenic events (namely soybeans, corn and cotton) to Monsanto, Syngenta, Bayer, Dow AgroSciences, Pioneer, AgrEvo, Basf, Nidera, Novartis and Ciba-Geigy. Most strikingly, of the total transgenic events, 23 were approved between 2003 and 2014 under Nestor Kirchner and Cristina Fernandez administrations. These events were approved by simple ministerial decisions, bypassing controls, sidestepping public debate and in complete disregard of the Precautionary Principle. Furthermore, the health and environmental assessments of those transgenic events continue to be based on studies provided by the companies themselves.

Within this general context, after approving the new soybean and corn transgenic seeds developed by Monsanto, the Argentine government apparently seeks to amend the seeds act to pave the way for biotech companies to take complete control of food production and agrofood chains.



The draft bill proposing to amend the Seeds Act

The Argentine government and agro-biotech corporations seek to reach a common ground on the issue of seeds, patents and royalties. Thus, they have reached an agreement on a draft bill which harmonizes the expectations of the agribusiness interest groups seeking to amend the current Seeds and Phytogenetic Creations Act in order to bring it in line with international standards that regulate the protection of vegetable varieties (i.e. seeds) pursuant to the establishment of intellectual property systems.

Two intellectual propety systems are in place in Argentina: (1) the protection of the property of vegetable creations via Breeders' Rights under the current Seeds act; and (2) the Patents and Utility Models system (established under Act No. 24,572). The latter expressly excludes the protection of plants. Regard must be had to the fact that Breeders' Rights also apply to any newly discovered varieties, as they do not require that a plant variety be invented. Pursuant to this system, anyone who discovers or invents a new variety can assert a claim over it without depriving farmers of the right to store part of the seeds harvested from their crops for their own use as seed.

This would radically change if the patent system proposed, almost in a concealed manner, in the draft bill amending the seeds act, is adopted. Farmers' use rights could be severly restricted, and age-old practices such as seed saving, selection, reproduction, improvement, preservation and exchange would be curtailed or, even worse, penalized.

Additionally, the draft bill proposes to establish registration and control systems (allowing, for instance, the exchange of seeds only between users registered with the State), and to implement a penalization system for those who fail to meet the required standards. Furthermore, the draft bill seeks to enhance the enforcement mechanisms to facilitate the seizing of seeds, suspensions, bans, etc. It would also bar other breeders from reproducing new plant varieties.

It should be highlighted that patent policies are among the government's top priorities with regards to production, which accounts for the fact that several government agencies have been, in recent years, promoting initiatives for the appropriation and privatization of traditional practices and seeds. This is exemplified by the fact that agro-biotech corporations have developed their own joint patents in crony-style association with State agencies. Such is the case of HB4 draught-resistant soybean, a joint development by the CONICET; the Universidad Nacional del Litoral; and Bioceres, an agro-biotech corporation whose board of directors is staffed by Víctor Trucco and Gustavo Grobocopatel, who have played decisive roles in the development of the soybean-based model in Argentina. That transgenic event, which has been declared by the Argentine Senate to be of strategic importance and which is scheduled to be launched in 2015, will be an intellectual property business in which the patent holders will receive joint royalties.

Source: ecoscordoba.com.ar

Given these scenarios, it should be remembered that, ever since the emergence of agriculture 10,000 years ago, farmers have reproduced their own seeds and, in some cases, have tended to try new forms of genetic improvement by cross-breeding different seeds of the same species. This has given rise to the widespread world wide agreement that the farmers' potential, and thus, their existence as such, should be defended. Indeed, proposals have been launched to recognize a prerogative for farmers to reproduce their own seeds, and it was agreed that seeds should be considered as world heritage. Until the 1930s, most commercial seed traders were small family businesses. Genetic research was carried out by State agencies and other institutions such as cooperatives. The main goal of seed trade companies was to multiply and trade existing seed varieties in the public domain.

The first initiative to provide for legal protection of plant varieties in Argentina was established in 1936. As early as the 1930s in many developed countries, over 80% of farmers' seeds requirements were supplied by farm-saved seeds or seeds obtained through non-official channels. Legislation has been passed ever since restricting that form of seed supply and inducing farmers to get their seeds from private seed traders year after year. Hence in recent years, particularly after hybrid and GM seeds emerged, large transnational seed traders have gained a dominant position in world markets, combining seed production and distribution with associated agrochemicals provided by those same transnationals.

Source: grain.org

"Coexistence" of agribusiness and family farming

Another feature of the draft bill is the proposal to integrate agribusiness with local, small farming (including peasants, indigenous peoples, vegetable growers, smallholders and other rural dwellers). In this way, two paradigms, two opposite world-views, two models hardly compatible with each other from a social, cultural, territorial and environmental standpoint will be merged if the proposed bill is enacted.

Calls for coexistence between agribusiness and "family farming" are part of the strategy adopted by the Argentine government and corporations to legitimize the agro-biotech-based model. This strategy is made explicit in the draft bill amending the current seeds act, and it most prominently takes the form of a tax "exemption" granted to "family farmers", a very broad category confusingly defined on a case-by-case basis including such diverse players as "chacareros" (small farmers) and "landless labourers". In any case, the "exemption" seems to have been included in the draft bill as a sort of concession granted by the State in order to give the bill the appearance that it protects those who have been, so far, together with the Indigenous Peoples, the main victims of the expansion of agribusiness. It is worth remembering that the State and private individuals have murdered several peasants and members of the indigenous communities who had been ensnared in order to push those communities out of their lands.

The so called "coexistence" encouraged the main players to establish a "dialoguing framework" or "Roundtable" called by the government (through the Family Farming Department) in order to bring together agribusiness corporations with some of the leading peasant organizations (including the Movimiento Nacional Campesino Indígena) and Church representatives. The gathering was the outcome of a new cultural and political scene which seeks a "consensus" and "pacification" via talks–between players with very different economic and political power.

History is rife with examples that show that such pacifying encounters are impossible when what is at stake is land that is limited, on the one hand, and large profits and rents, on the other.

This new culture that is emerging throughout the world of agribusiness (and, unfortunately, amidst some social organizations) is expressed internationally and seeks to integrate peasant-and small-farme based agriculture within the agribusiness model. A fact should not be overlooked is that the FAO has declared 2014 as the "Year of Family Farming" and has suddenly recognized the "importance of peasant-based agriculture" on a similar basis as the other agriculture that follows the logic of the market. This became ever more apparent with the cooperation between Vía Campesina and the FAO in Rome, in October 2013. Thus, the "social responsibility" and "earth-friendly" requirements o f concentrated agribusiness capital were met through an understanding that seemed impossible until only recently. Via Campesina's own documents used to denounce the FAO as acting en bloc together with the International Monetary Fund and the World Trade Organization in implementing the necessary economic measures for agribusiness to expand worldwide. All that seems to be now a matter of the past. These international directives are articulated on a domestic level through the new roles assumed by the institutions concerned: state-run universities, scientific agencies, the INTA [Argentine Farming Technology Institute] etcétera.

Conclusion

If the bill here considered were enacted, this would mean that opportunities for debate over agriculture, food and lifestyles would be shut off. It would also signify a defeat for Latin America, where many countries have managed to stop these initiatives. The expansion of soybean crops represents the territorial counterpart of a general extractivist offensive on a local level and throughout Latin America. Thus, Argentina, with its traditional political parties acting as agents of a colonial economic model, encourages extractive activities in every possible form: the Andes mountains continue to be depleted by polluting mega-mining activities; large urban centers swell, driven by real estate speculation; forestry monoculture and pulp and paper manufacturing companies swarm, and the fishing industry continues to deplete our seas.

Furthermore, the Argentine government, despite the pressing need to establish an alternative energy mix–in the face of the unforseen consequences of climate change–irresponsibly prioritizes hydroelectric and nuclear energy in response to the energy crisis. The government is even fostering non-conventional hydrocarbons through fracking, whose legal framework and strategic orientation is set out in the agreement signed between state oil company YPF and transnational oil company Chevron in 2013.

Fortunately however, it's not all bad news. Throughout the continent, resistance is burgeoning from peoples who stand up for their dignity and defend their territories and common goods from capitalism's neocolonial pillage. The fierce resistance from Andean assemblies against open-pit mining corporations; the anti-spray campaigns; the native people's resistance defending their territories against the soybean farming pressing need for land; the world standard set by the Mothers of Ituzaingó, the Assembly in the town of Malvinas Argentinas and the social organizations that prevented the construction of a Monsanto plant in the Argentine province of Córdoba; the unyielding struggle of the Assembly in Gualeguaychú against transnational pulp and paper manufacturing companies; the emergence of new critical voices among academics, inspired by the legacy of Dr. Andrés Carrasco to denounce the colonization of the scientific system by corporations; the younger generations that struggle to go back to the countryside to build new rural lifestyles based on the attachment to the land and to recover the freedom to grow their own food; are all factors that provide inspiration to continue resisting in spite of the adversities involved, in the hopes that a new society can be built on the basis of equality and deeply connected with nature.

Therefore, in the face of this scenario, we say:

- *No to the privatization of seeds. Seeds belong to the peoples of the Earth, and they represent knowledges and cultures. Life should not be patented.*
- *No to agribusiness, and in particular to all versions of the draft bill proposing to amend the current Seeds Act.*
- *No to the deceitful, political manoeuvre proposing the "coexistence of family farming with agribusiness".*
- *We call for an alternative model free from agribusiness, mega-mining, fracking, irrational urbanization, nuclear energy, hydroelectric dams, maritime depredation, artificial forests and paper manufacturing plants.*
- *There can be no Food Sovereignty with GMOs. We call for a ban on the genetic engineering of food. We call for the repopulation of the rural areas currently controlled by agribusiness; the recovery of ecosystems; and the production of healthy food for the people.*
- *Over and above any law it is the people's responsibility securing Food Sovereignty for themselves and for future generations.*

We hereby make a plural, unitary and widely based call to all social, environmental, trade, student and political organizations who agree on the main aspects of this document to mount a vigorous nation-wide campaign to stop agribusiness and capitalist extractivism in Argentina. We place ourselves in a state of alert and mobilization, and call for a demonstration at the Argentine Congress when the draft bill described above is sent to the legislature for debate.

Sofia Gatica, environmental activist and mother of 3 children, is once again receiving death threats due to her fight against the installation of a Monsanto plant in Malvinas, Argentina.

Colombia – Red de Semillas Libres de Colombia

Seeds and Collective Action in Colombia

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9th meeting of the Red de Guardianes de Semillas de Vida. Piendamó, Cauca, Colombia. September, 2014

Currently, the biggest threat to seeds worldwide is privatization and monopolistic control of agro-biodiversity and related traditional knowledge. This threat is propelled by diverse interests via laws, conventions and free trade agreements. As these types of pressures increase in Colombia, resistance spearheaded by local communities and social organizations is also gaining force.

I. Seed laws in Colombia

I.1. State of the art

All seed laws in Colombia are based on the UPOV Convention, protecting breeders' rights over new plant varieties, approved by the Andean Decision 345 of 1993[2]. In 2006, law 1032 was issued, amending Article 306 of the Penal Code on theft of plant breeders' rights and on seeds considered "similarly mistakable to a legally protected variety"[3].

In July of 2014, a ruling of the Constitutional Court eliminated the phrase "similarly mistakable" from the national judicial framework regarding seeds, deeming it broad, lacking clarity, and that it could involve the use of figures prohibited by the National Constitution in criminal matters.

Additionally, the Colombian Agricultural and Livestock Institute (ICA) issued Resolution 970 of 2010, controlling seed production, use and commercialization. This law is an instrument to control seed quality and seed health in the country, based on the false premise that native seeds, in the hands of traditional farmers, lack quality. For that reason, the law dictates that only certified and registered seeds are permitted to circulate in Colombia. The law demands that any person that produces seeds to be commercialized or turned over to third parties must be registered and certified by the ICA. In this manner, since 2010 and with the support of the National Police Force, the ICA has confiscated seeds and penalized farmers that it considers in violation of the Resolution 970. Currently the ICA, in response to national outrage, is claiming to issue a new law to replace Resolution 970, but in reality isn't seeking changes that permit the protection of farmers' seeds, but merely to disguise the most critiqued aspects of the law.

According to official ICA information, from 2010 to 2013, 4,167,255 kilograms of seeds were confiscated throughout the country. Colombian farmers and the "Red de Semillas Libres de Colombia"- RSLC network[4]- denounces these acts as illegal violations of farmers' rights outlined in the International Treaty on Plant Genetic Resources for Food and Agriculture, and also as a violation of the consuetudinary rights of ethnic and indigenous communities granted by the Colombian Constitution. The resulting national indignation led to the Agrarian Strike of late 2013 and early 2014, which resulted in the issue being placed on the negotiation agenda of the National Government and the "Cumbre Agraria", a place of assembly for the social and rural movements responsible for the Agrarian Strike.

Finally, in 2012, the Law 1518, implementing the UPOV91 Convention, was passed in Colombia. As the law implied Colombia's ratification of an international treaty, the Constitutional Court proceeded to revise it, inaugurating a citizen-wide intervention period to gather testimony in regards to the law's legality. Many individuals and organizations, national and international, sent documents about the law's damaging effects to the country and to local communities. More than 7000 signatures were collected declaring the law unconstitutional. Although the Court's primary reason for declaring UPOV91 unconstitutional[5] was "lack of prior consultation" on the part of Afro-Colombian and indigenous populations (a fundamental right of said ethnic minorities), a clear linkage was made between the prior consultation and the protection of those ethnic communities' cultural identity. In its ruling, the court broadly sustained that UPOV91 directly regulated aspects of significant concern to those communities, considering them plant breeders with protected intellectual property on varieties that are part of their ancestral knowledge.

The Court considered the imposition of intellectual property restrictions on new varieties as a possible limit to the development of biodiversity in the specific ethnic, cultural and ecosystem conditions of their territories.

I.2. What is civil society doing to confront seed laws?

The RSLC and the indigenous, farmer and Afro-Colombian organizations in the "Cumbre Agraria", argue that, in order to truly protect seeds as the people's heritage, both the Government and social organizations must:

1. *Repeal all laws on intellectual property on seeds, and laws controlling and penalizing their free production, use and commercialization, including UPOV78, UPOV91, article 306 and Resolution 970.*

2. *The Government must regulate transnational companies owning certified, patented and transgenic seeds by controlling the quality and health of those seeds, in order to avoid harming Colombian national agricultural production and especially local native seeds.*

3. *Public agricultural and seed policies must promote and protect seeds that are free for use and commercialization. They must support agro-ecological production, and local participative research on quality and healthy seeds controlled by communities, considering local environmental and socio-economic conditions.*

II. Transgenic crops

Transgenic crops started in Colombia in 2002, with the ICA's authorization of transgenic commercial cotton crops. To date, the country has approved commercial planting of six varieties of transgenic Bt and Herbicide-Tolerant –HT cotton. In 2007, the ICA authorized commercial planting of 3 varieties of GM corn, and by 2013, 10 varieties of commercial crops of Bt, HT and double technology –Bt+HT- corn were approved. In 2010, commercial crops of RR soy were approved in the Orinoquia region.

II.1. Transgenic Cotton

After Bt Cotton crops were introduced in 2002, two thousand hectares were grown in the regions of Cordoba and Tolima. However, from 2011 to 2013, transgenic cotton fields decreased from 49,334Ha to 26,913Ha, a 45% drop (Agrobio, 2014[6]). After 13 years of Bt, RR, and joint technology cotton crops being permitted, most of the farmers from these regions have suffered: in Tolima during 2008, 3,902 hectares of GM cotton –DP455, BG/RR (Bt+RR)- were grown, resulting in a production loss of 50% to 70%. In Cordoba in 2009, more than 20 thousand hectares of Monsanto's DP164-Bt+RR cotton were grown. In both regions, farmers' losses were over US$17 million[7]. This raised multiple public complaints, pushing the ICA to fine Monsanto US$125,000 for false advertising. Nothing has been paid to date. In the 2012-2013 cotton campaign in Cordoba, 83% of the cotton area was registered as GM. These seeds were proved a failure when more than four thousand families and entrepreneurs suffered approximately US$36 million in losses.

This pushed farmers to try to avoid using GM seeds, albeit in vain, since Monsanto controls most of the commercial seed market. The company's strategy has been to grab non-GM seeds (like the Delta Opal 90 variety) from the markets, eliminating the availability of conventional seeds better-adapted to the regions. Thus, transgenic cotton crops in Colombia have been a complete failure. As farmers confront bankruptcy, no company, nor the ICA nor any bio-safety authority has responded for their losses. The Government must resume research on non-GM cotton seeds adapted to different regions, and farmers should pursue the development of different technologic options that allow them to rebuild their crops, GMO-free.

Agroecological seed breeding, Cartago, Nariño region.

Seed Fair at the Nariño University, Pasto, Nariño region 2011.

II.2. Transgenic Corn

In terms of area, GM corn crops in Colombia have increased from 6 thousand hectares in 2007 to 75 thousand in 2013, mainly in the regions of Tolima, Cordoba, Meta and Valle del Cauca. GM corn seeds are reflected in the following technologies: Herculex I, Herculex I x RR, from Dupont; and Yieldgard, Yieldgard x RR, Roundup Ready y Bt11 from Monsanto (Agrobio, 2014). While these crops have not yet spread throughout the country, they already cover a significant area in some regions. Nevertheless, farmers also plant seeds saved or bought in non-official markets outside of the ICA's control, making it possible that an area larger than that officially reported is actually planted with GM corn. This presents the danger that many native varieties are being genetically contaminated. Colombia is one of the countries with the highest number of reported native corn varieties. Close to 23 types of corn have been identified[8], and from each one of those, indigenous, Afro-Colombian and small farmer communities have developed, saved, and used hundreds of varieties adapted to the diverse cultural and environmental regional conditions. Genetic contamination of native varieties can originate from imported corn delivered to farmers through agricultural or food aid programs, as well as seed exchanges from different origins.

In 2013 close to eight thousand hectares of transgenic corn were grown in Tolima. In the town of Espinal, Bt and Roundup Ready double technology were grown, as well as white and yellow corn from Pioneer-Dupont (30F32WHR and 30F32YHR varieties), and Monsanto (DK7088 varieties). During the March 2014 harvest, most Tolima farmers experienced losses due to the bad quality of those seeds.

That year, more than 180 farmers from Espinal and Guamo[9] lost between US$1200 to US$1400 per hectare. Since 2008, when farmers began growing GM corn in the region, they have reported positive results due mainly to the diminishing costs of controlling weeds. However, in the last 2 years, they started having serious problems:

- Double technologies of yellow and white varieties have shown bad germination rates and a fall of 40% to 60% in the number of grains per cob.

- Bt technology has not controlled some pests like Spodoptera sp. and Diatrea sp., while new pests have appeared that did not exist in these crops before. As a result, farmers have been forced to apply additional amounts of pesticides, and the same has occurred with other formerly uncommon diseases.

- Due to excessive herbicide use in the region, many Glyphosate-resistant weeds have appeared, leading to a constant increase in herbicide use.

Numerous complaints were made by farmers to Pioneer (Dupont) and Monsanto, with no answer. These companies, together with the ICA, blame "environmental and climate factors" or even farmers for supposed incorrect use of technologies. As compensation, the companies offer farmers the same amount of seeds that they bought; however, it is the same variety that created the problem. The ICA has not made comments or fined these companies.

In many regions throughout the country, indigenous, Afro-Colombian, and small farmers' organizations; NGOs; and social and environmental movements have criticized transgenic seeds and implemented actions to confront them, such as:

- Food sovereignty campaigns and alliances; local exchange, recuperation and use of native seeds; agro-ecological and traditional productive systems free of GM seeds.

- Lawsuits against the introduction of GM crops, such as Monsanto's Bt YieldGard corn and HerculexI corn from Dupont; as well as an action for annulment of the decree 4525 of 2005, that regulates the Cartagena Protocol on Biodiversity in Colombia, and two actions of annulment of the corn Bt YieldGard of Monsanto and the corn Herculex I of Dupont. Currently, these lawsuits are being studied by the State Council.

- Rejection of agricultural and food aid programs that promote or use GM seeds and food.

Native corn from Don Jorge Tapia, seed keeper, Santa Cruz de Guachavés, Nariño region.

III. Seed Networks and Seed Houses

Seed Networks and Seed Houses promote native, local seeds, free of intellectual property, genetic modification, and chemical inputs.

Networks for native seed production, exchange and commercialization in Colombia have become innovative initiatives. Formerly, social organizations such as cooperatives, agro-ecological schools and associations merely acted at the family level. There was no action for local and native seed provisioning providing farmers with stable access to quality seeds. This new network dynamic has focused on identifying and valuing the work of seed savers, called "Seed Guardians". The network "Red de Guardianes de Semillas de Vida" of the Nariño region has been crucial. It was born as a branch of the "Red de Guardianes de Semillas de Ecuador", which has spread to the Colombian regions of Putumayo, Cauca, Valle, Cundinamarca and Antioquia. More than 200 seed guardians get together every year to exchange seeds and knowledge, and send to the Seed Center significant quantities of seeds for sale, which supports their economic sustainability. The network "Red de Custodios de Semillas" of the Cañamomo-Lomaprieta indigenous community, was born out of this process of territorial defense, food sovereignty and native seeds. Both this community and San Andrés de Sotavento have been declared "GMO-free Territories", aiming to become self-provisioning through Community Seed Houses.

These networks of seed savers, "Redes de Custodios y Guardianes de Semillas", have grown throughout the country: in Cordoba and Sucre, the "Red Agroecológica del Caribe" RECAR; in Santander, the Agroecology Schools of "García Rovira" and "Agrovida"; in Sucre, the "Red de Productores de los Palmitos"; in Antioquia, the "Red Colombiana de Agricultura Biológica" RECAB; in Caldas, the "Red de Custodios de Semillas de Cañamomo-Lomaprieta; in Risaralda, the "Red de Custodios de Semillas"; in Cundinamarca, the "Casa de Semillas de Zipaquirá"; in Quindío, the "Red de Familias Custodias"; in Valle del Cauca, the "Escuelas Agroecológicas de Tuluá" and "Red de Mercados Agroecológicos del Valle"; in Cauca the "Fondo Paez" and "Cabildo de Guambía"; in Nariño, the "Red de Guardianes de Semillas de Vida", the "Asociación para el Desarrollo Campesino" and "Asociación SHAQUIÑAN de los Pastos"; in Putumayo and Caquetá, the "Vicaría del Sur"; in Huila the "Fundación Viracocha" and the "Consejo Regional Indígena del Huila CRIHU"; in Tolima the "Escuela Agroecológica Quintín Lame".

Bean seedlings, Velma Echavarría, seed keeper, Riosucio, Caldas region.

Seed Fairs are other key activities for valuing local agro-biodiversity. Examples are the "Pueblos y Semillas" in La Vega, Cauca; "Ecovida" in the city of Manizales; the "Encuentro de Expresiones Rurales y Urbanas" in Santander; and the "Encuentro de Agroecología en Bogotá Región" organized by the Bogotá Botanical Garden. In the last two years, the "Sahkellus" in Cauca has gained importance: this event represents an ancient cultural practice of the Nasa people, with seeds at the core of the rituals. At a national level the articulation of most of these initiatives has been possible through the RSLC. The common vision has been that, in the face of any law that goes against the consuetudinary right to produce, exchange, give and sell native seeds, civil disobedience is valid.

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60 Años
Mutisia clematis L.f.

RED DE SEMILLAS LIBRES COLOMBIA

SWISSAID
Una ayuda valiosa.

Workshop-Seminar on agroecological conservation of soils and seeds.

Note: Germplasm Banks and actions for the liberation of seeds

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The fact that a biological resource such as a seed is stored in a germplasm bank is no guarantee it can be considered a genetic resource. In order to be considered such, it would have to be incorporated into national development programs and be of free access to those who request it. The fact that farmers donate these seeds, later stored in collections, does not guarantee that their siblings will be able to access the seeds should they need them.

It is difficult to request corn varieties from the Germplasm Bank of the Nation (run by CORPOICA) as an individual, since it requires a permit from the National Bank Committee. This committee is composed of two members of the ICA, one member of the Environment Ministry, two members of CORPOICA, and one member of the Agriculture Ministry.
A response to this type of request can take two to three years. If the request is approved, the individual must agree to (1) the use of the requested material only for research; (2) not to turn over the material to third parties; (3) no patenting; (4) return the same amount of material.

Semillas de Identidad
Colombia

The "Corporación Custodios de Semillas" completed a request in 2010, with the objective of recuperation instead of research. As there was no response, legal action was undertaken, with no result to date. In 2013, the organization accompanied the indigenous community of San Andrés de Sotavento, "Resguardo Indígena Zenú", to request the re-introduction of native corn varieties claiming cultural reasons, with no answer to date.

A first positive result, showing the potential of these types of actions, was achieved with the initiative for the liberation of bean seeds. The CIAT, through the Genetic Resources Program, allows access to their database and free requests and transfers of material, which is allowed since their headquarters are in Colombia. The "Corporación Custodios de Semillas" designed a guide for the RSLC detailing how to request accessions of beans, yucca and forage from the CIAT, aiming at returning them to the hands of rural communities. The "Red de Guardianes de Semillas de Vida", "Plataforma Rural", the indigenous communities of Cañamomo-Lomaprieta, the town of Silvia in Cauca, students from the course on Use and Conservation of Native Seeds[10], and other farmers' organizations in the network have submitted requests and received affirmative responses: 25 accessions of high-altitude yucca, close to a thousand accessions of Colombian origin beans.

Source: upload.wikimedia.org/wikipedia/commons/6/68/CottonPlant.JPG

Note

[1] Compilation and edition: Ricardo de la Pava y Stefan Ortiz, researchers at the program on Sociocultural Aspects on the transformation of ecosystems, Jardín Botánico de Bogotá José Celestino Mutis. - Translation: Natasha Louise Raisch

[2] Decision N° 345 on the Common Regime on the Protection of the Rights of Breeders of New Plant Varieties. Andean Community of Nations, October 29th of 1993.

[3] Article 306. (Modified by the art. 4° of the law 1032 of 2006). Encroachment of the breeders' rights. Those who, fraudulently, encroaches the breeders' rights on a new plant variety, legally protected or similarly mistakable ("similarmente confundibles") to a legally protected variety, shall be liable to a prison sentence of 4 to 8 years, and a fine of 26.66 thousand and 500 legal minimum wages.

[4] The RSLC is the Colombian branch of a Latin American network that promotes seed freedom: http://www.redsemillaslibres.org

[5] The sentence C-1051/12 of the Constitutional Court declares the Unconstitutionality of the law 1518 of the 13th of april 2012, which approves the 1991 International Convention on New Plant Varieties.

[6] http://www.agrobio.org/

[7] Exchange rate (February 2015): 1US$ = 2500 Colombian peso.

[8] Roberts, L., Grant, U., Ramírez, R., Hatheway W. y Smith, D. 1957. Razas de maíz en Colombia. Boletín Técnico (2). Ministerio de Agricultura de Colombia. Departamento de Investigación agropecuaria. Bogotá, Colombia.

[9] http://www.elnuevodia.com.co/nuevodia/tolima/regional/211273-maiceros-de-espinal-y-guamo-avecinan-quiebra
http://contextoganadero.com/agricultura/denuncia-8000-millones-han-perdido-maiceros-por-semilla-que-certifico-el-ica

[10] Course designed by the RSLC in the Agrarian Sciences Department of the National University of Colombia, at Bogotá

Costa Rica – Bloque Verde

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Current Situation for Transgenic Crops in Costa Rica[1]

Fabián Pacheco Rodríguez[2] y Jaime E. García González[3]

Summary: a description is made of the transgenic crops that have been authorized in Costa Rica since 1991 to this date, including the ones related to the investigation and agronomic evaluation, mentioning the public and private entities involved in these activities. Also mentioned is the Costa Rican legal norm related to this subject, as well as the possible unconstitutionality of some of the articles of the Phytosanitary Law no. 7664 related to this material. Furthermore, reference is made to the agreements of the declarations of territories that are free of transgenic crops by 92% of the municipal councils of the country, as well as the relevant involved actors with the subject of the transgenic crops. Also, the known cases of food chain contamination in the country are cited. And lastly, the activities and achievements of the national campaign "Pure Life without Transgenics" are described, finalizing with a mention of the future panorama going forward by the involved organizations in this campaign.

Key words: transgenic crops, Costa Rica, legislation, Pure Life without Transgenics campaign, genetically modified organisms, food chain contamination.

Abstract: GMO culture situation in Costa Rica. It gives a description of every GMO culture ever authorized in Costa Rica from 1991 to this day, including those limited to research and agronomic evaluation, naming which public and private entities have been involved in such activities. It then refers to the Costa Rican legal norms that relate to this topic, as well as the possible unconstitutionality of determined articles of Phytosanitary Law no. 7664 in relation to this matter. It goes on with the agreement on GMO-free territories as declared by 92% of all municipal councils in the country and the relevant actors in the topic of transgenic cultures. It also cites the known cases of Agro-alimentary chain contamination in the country. Lastly, it describes the activities and success obtained by the «Pura Vida sin Transgénicos» campaign, finishing with the forward panorama as perceived by the organizations involved in this campaign.

Key words: transgenic cultures, Costa Rica, legal norms, campaign "Pura Vida sin Transgénicos", genetically modified organisms (GMO), Agro-alimentary contamination.

Authorized Crops

The transgenic crops authorized in Costa Rica are the ones that are planted to reproduce seeds for exportation (cotton and soy), and those of experimental type (corn, pineapple, banana, plantain, rice and yam). To this date, no requests have been presented for the sowing of these transgenic crops for their commercialization in the country.

The consumption and sale of these products in the national food chain have been done by importation, especially from grains from transgenic origin by the agro industrial sector, such as: corn and soy (to feed animals or make industrial foods). This violates the biosecurity, as there is risk that farmers that use these transgenic grains as seed, exists. This type of transgenic enters the country without any control, under the tariff of a grain and not a seed. The entries of these are made mainly through the Caldera Port (Puntarenas).

Authorization for the planting of the transgenic crops

As you can see in the attached chart, the planting of these crops in Costa Rica initiated in 1991, when there was still no regulation or mayor information on this subject, so these first sowings went unnoticed by environmentalists and peasant farmers.

Areas with transgenic crops in Costa Rica, 1991-2013 (hectares)

Period	Tipo de Cultivo								
	Cotton	Soya	Corn	Tiquisque	Plantain	Rice	Banana	Pineappre	Total
1991-1992		3,00	40 m²						3,00
1992-1993	3,60		0,50						4,10
1993-1994									0,00
1994-1995		25,60							25,60
1995-1996		223,00	0,10						223,10
1996-1997	3,60	56,40							60,00
1997-1998	2,90	158,10					1,00		162,00
1998-1999	96,30	69,60	1,50	0,10					167,50
1999-2000	99,20	12,10	1,60						112,90
2000-2001	102,40	7,20	2,10						111,70
2001-2002	277,00	22,10							299,10
2002-2003	567,00	17,00					0,80		584,80
2003-2004	609,00	17,20			0,20	0,50	0,80		627,70
2004-2005	1.412,31	30,51			0,10	0,50	0,50		1.443,92
2005-2006	951,91	15,88			0,02	0,60	0,50	1,00	969,91
2006-2007	1.202,50	81,49					4,50	0,75	1.289,24
2007-2008	1.694,50	1,90					1,50	1,00	1.698,90
2008-2009	1.667,59	25,00					4,50	0,75	1.697,84
2009-2010	320,80	87,60					1,00	3,20	412,60
2010-2011	394,35	44,60					1,00	3,20	443,15
2011-2012	281,12	2,51					1,00	5,21	289,84
2012-2013	237,00	0,74			1,00			17,10	255,84
Total	9.923,08	901,53			1,32	1,60	17,10	32,21	10.882,74

Source: Elaborated based on data provided by MAG (2013) The official data concerning the issue of GMOs in CR are available, although usually outdated, on the site of BHC (2014a).

Photo by Alberto Font/The Tico Times

Transgenic crops authorization for investigation and agronomic evaluation

- **Rose Pineapple**

Since 2005, the company LM Veintiuno (a legal business group) does experiments with this type of transgenic pineapple to evaluate the growth of carotenoid and lycopene. These crops were planted in the south of the country (Buenos Aires of Puntarenas) in lands of Pindeco (Pineapple Development Company), a subsidiary company of the North American Transnational Corporation Del Monte. In November of 2010 LM Veintiuno began the formal procedures to free the environment of eight to ten types of transgenic pineapples as "semi-commercial " crops, and in areas of 10 to 20 hectares per type. The experimental area of this crop increased from less than a hectare in the beginning to just over 17 hectares in 2013. To this moment, the sale of this transgenic pineapple in Costa Rica has not been authorized. According to reports from the auditors in biosafety, the material obtained is subsequently destroyed in huge autoclaves. Notably, the Department of Agriculture in the United States (USDA for its acronym in English) approved this transgenic variety of pineapple for eventual commercialization in the US, despite still being in a stage of experimentation (Ettinger, 2013). The above reveals the intention of Del Monte in Costa Rica to convert into a future exporter of transgenic pineapple.

- **Bananas and plantains (Musa spp)**

The Corporación Bananera Nacional, Corbana (2003-2005), the Compañía Bananera Atlántica Limitada (2013), UNIPO G.V. S.A. (1997-2012), the Centro Agronómico Tropical de Investigación y Enseñanza, Catie (2003-2006) y Agrosoil International S.A. (2007-2009), have performed field studies to assess tolerance to fungal disease of black sigatoka, as well as evaluating promoters of marker genes. Experimental sowing areas for these crops authorized varied between 0.02 and 4.5 hectares.

- **Rice, corn and White Yam (Xanthosoma sagittifolium)**

Developed in the University of Costa Rica (UCR). The transgenic rice has resistance to the herbicide glufosinate ammonium and white sheet virus. In the period 2003-2006 it was grown experimentally on three occasions in areas smaller than 6000 m2, in Liberia and Nandayure of Guanacaste. Transgenic corn is resistant to the virus developed thin striped, irrelevant disease in the country. It was grown in a confined area of 1000 m2 on the college campus (Montes de Oca, San José) in 1995-1996. The yam was worked on the development of a genetic transformation system with the intention of finding the tolerance to the “evil dry” disease (Pythium myriotylum), and they are cultivated experimentally under conditions confined to an area of 1000 m2 during the period of 1998-1999 at the same university. To this date, no contribution is highlighted in this research in the Costa Rican society.

- **Other crops:**

The UCR has in perspective the generation of varieties of transgenic coffee and beans resistant to diseases and pests from investigations initiated in 2002 and 2004, respectively (Valdez et al., 2002; Valdez and Solis, 2004).

Reproduction of transgenic seeds of cotton, soybeans and corn for exportation

These are the crops to be grown in larger areas. The cotton growing areas ranged from 2.9 (1997-1998) and 1694.5 hectares (2007-2008) in the period from 1992 to 2013, and planted in the provinces of Guanacaste (Abangares, Bagaces, Cañas, Liberia) and Puntarenas (Chomes and Garabito). Since 2010, the area of this crop has not exceeded 400 hectares. In the case of soybeans, between 1991 and 2013, they were sown between 0.74 (2012-2013) and 223 hectares (1995-1996) in the provinces of Alajuela (Upala), Guanacaste (Bagaces, Cañas, Liberia, Abangares) and Puntarenas (Garabito). From 2010, soybean-planting areas declined sharply from 87.6 to 0.74 hectares. The events of transgenic soybean and cotton varieties released in CR can be found at BCH (2014b).

These are transgenic varieties with characteristics of tolerance to glyphosate herbicide (cotton and soybeans) and bromoxynil (cotton) and lepidopteran larvae (cotton). As for varieties of transgenic corn (glyphosate tolerant and insect larvae), these were grown in five occasions in the period 1991-2001 in areas of 40 m2 to 2.10 hectares. The period 2007-2008 stands out as the year when the largest planting area of transgenic crops for seed propagation was recorded (1696.4 hectares), with cotton (1694.5 hectares). From this period planting areas with transgenic cotton and soybeans have decreased to 237.7 hectares in 2013. To this date, the only year that no crop planting in CR was recorded, nor for seed reproduction or for experimentation, was in the period 1993-1994.

Involved corporations

The companies involved in the reproduction of transgenic seeds for exportation in Costa Rica are: Delta & PL Semillas Limitada (1997-2013), Semillas del Trópico S.A. (2003-2012), Semillas Olson S.A. (1999-2012), Dekalb Genetics Corporation (1998-2001), Los Gansos S.A. (1991-1999) and A & J Seed Farms S.A. (2013). Semillas Olson S.A., which is now A & J Seed Farms S.A. These companies have produced seeds for transnational corporations Monsanto, Bayer and Calgene. Furthermore, it is interesting to note that several of these companies do not fulfill their obligations to the Costa Rican Social Security. For example, the companies Semillas Olson SA, Semillas del Tropico SA and Dekalb Genetic Corporation, owe the Social Security system a little over 100 million colones (CCSS, 2014).

Illegal Introduction of transgenic seeds

No reported cases of illegal introductions of transgenic seeds into the country are known, but there are no studies that field-monitoring rule out the possibility that they are being given.

Legal Regulations

The main laws, regulations, agreements and guidelines that relate to the issue of regulation of transgenics in the country are: Cartagena Protocol on Biosafety of the Convention on Biological Diversity (Law No. 8537), Phytosanitary Protection Law (Law no. 7664, art. 5, item q, 41, 42, 73) and its regulations (Decree no. 26921 -MAG, art. 102, 111-134), Regulation of the Organizational Structure of the State Phytosanitary Service (Decree no. 36801 -MAG, art. 6 -point 7, paragraph VII, 37 and 38), Regulation of the Organizational Structure, Technical and Administration of the State Phytosanitary Service (Decree no. 30111 -MAG , recital 5 , art. 13 -item 17-, 18), General Law of the National Animal Health Service (Law no. 8495, art. 3, 5 , 6 -items b, f, g, h, i-, subsection 68 f, 78 subsection u) Regulation of Agricultural Biosafety Audits of the Ministry of Agriculture (Decree no. 32486 -MAG), Regulation of Organic Agriculture (Decree no. 29782 -MAG, chap. I, paragraph 15; art. 7 paragraphs 8 and 21; art. 24 and 40; Annexes C and D), Law Development, Promotion and Development of Organic Farming Activity (Law no. 8591, art. 5 -items a, g-, 21, 22, 31, 33) and its regulations (Decree no. 35242 -MAG -H -MEIC, art. 4 -items a, g, m, 53-55, 57) , Protection Law of New Varieties of Plants (Law no. 8631), Biodiversity Law (Law no. 7788, Chapter III, Article 44-48); on the establishment of the National Biosafety Technical Commission (Agreement no. 008-2013-MAG and Decree no. 37588 -MAG-MS-MICIT-MINAET). In compilation to García (2014b), which you may consult, the texts of the legal regulations cited therein.

The law allowing the planting of transgenic crops in CR is possibly unconstitutional

The Phytosanitary Protection Law n. ° 7664 is under two appeal for a Constitutional right's legal protection before the Constitutional Court (cases no. 12-17013-0007 - 13-6136-0007 - CO and CO). One of these was presented by members of the civil sector (farmers, environmentalists, agriculturists and a member of the Legislative Assembly) in December 2012, and the other by the Costa Rican Ombudsmen in May 2013. Basically, both appeals argue that the law allowing the planting of transgenic crops in CR is unconstitutional for not including environmental impact studies and for restricting access to technical information from the civil society. As stated by the Constitutional Court the moment that the first of these appeals were filed, they may not be any authorizations to introduce transgenic events until the appeals in questions are resolved and ever since then, these events have been stalled and the new applications for planting these crops as well.

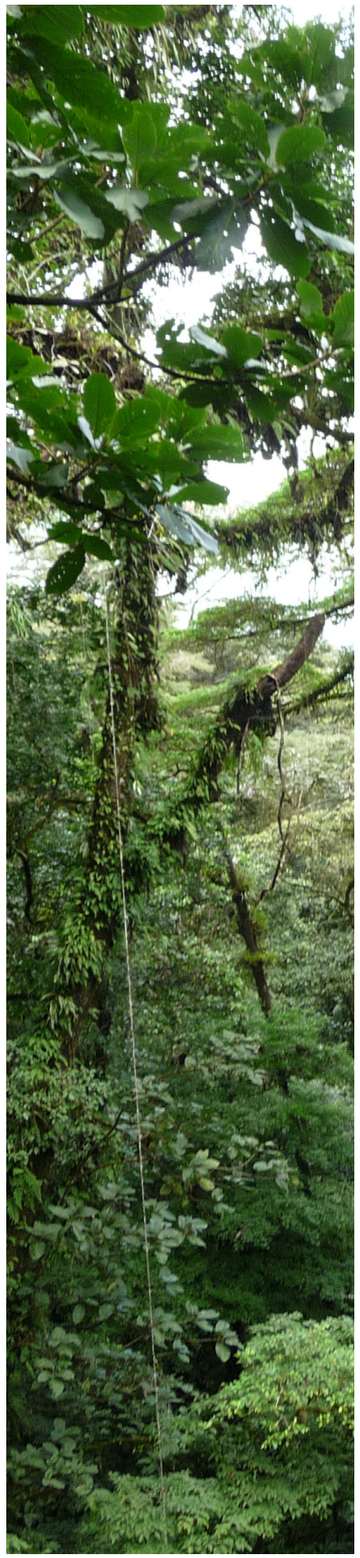


Photo by Fabián Pacheco Rodríguez «

Source: justgetfloury.com

Meanwhile the Attorney General's Office, in its capacity as Advisory Body of the Constitutional Court, gives reason to the resources cited to draw the following conclusions in its technical report (Brenes, 2013a):

1. *"In both the provisions of Article 46 of the Biodiversity Law regarding measures of assessment and risk management activity release of transgenics is equivalent to an environmental impact in terms of its scope and effects, Articles 117 and 118 of the Regulations of the Phytosanitary Protection Law are not unconstitutional. Otherwise, the legal and regulatory rules governing the procedure for requesting and granting permits release of transgenics is unconstitutional for omitting an evaluation of the Impact Study and thereby violating the provisions of Article 50 of the Constitution".*

2. *"And Article 132 of Regulation Phytosanitary Protection Law is unconstitutional to the extent that it imposes regulatory means, a limitation to exercise the fundamental right of access to public information, in addition, their content exceeds the limitations on its exercise allowed by Article 30 in conjunction with 24, both of the Political Constitution".*

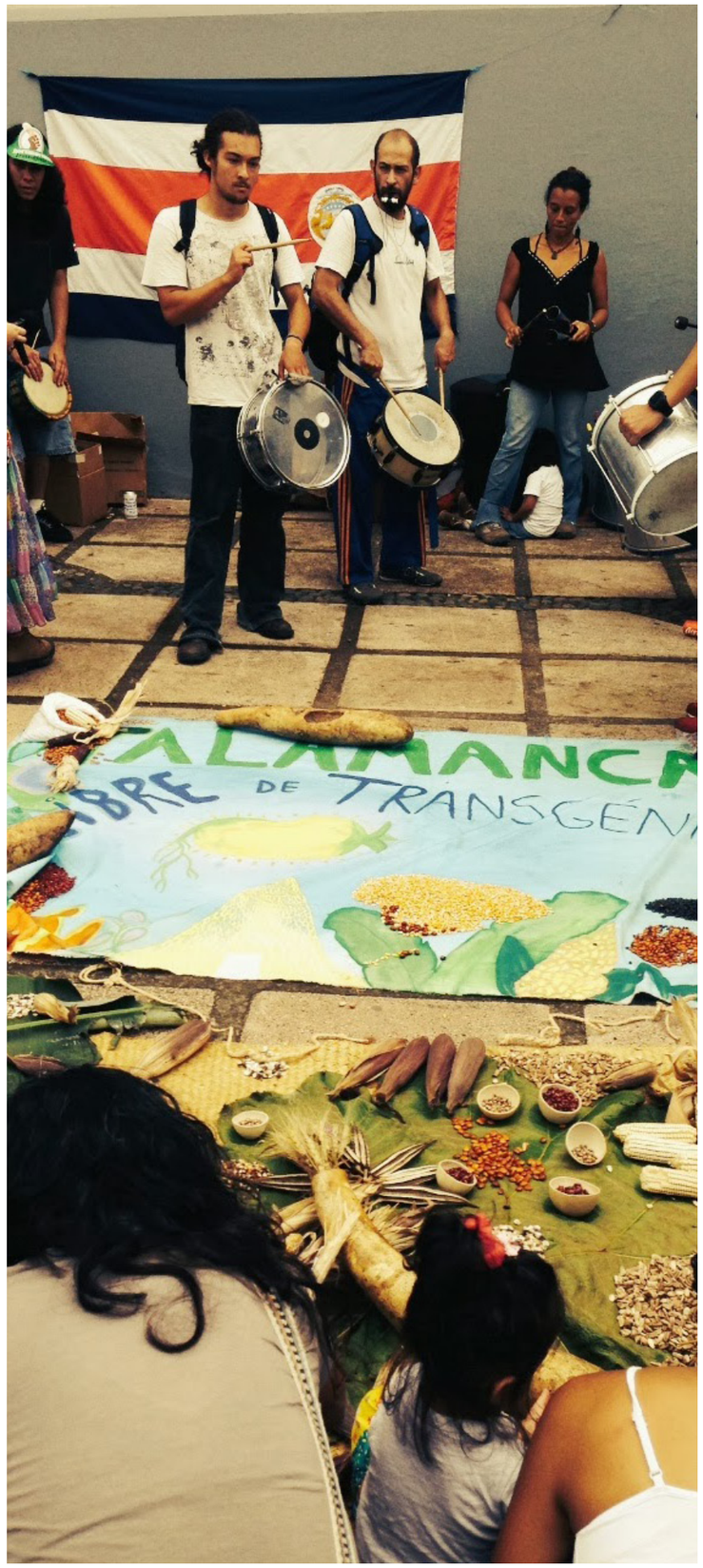
In this same manner, in the annual work report 2012-2013 the Ombudsman (2013) states the following:

- *"The investigation by this Defensory allowed to have as concrete situations the envision that breach the principle of state transparency, essential principle to fulfill what is postulated of a good governance, in handling this material. The above due to the State's position of not providing clear information, accurate and in a timely manner to the people over the government's actions in this matter, and also to share the position of the government that underlie the decisions made on a topic of public interest as it is food safety and public health."*

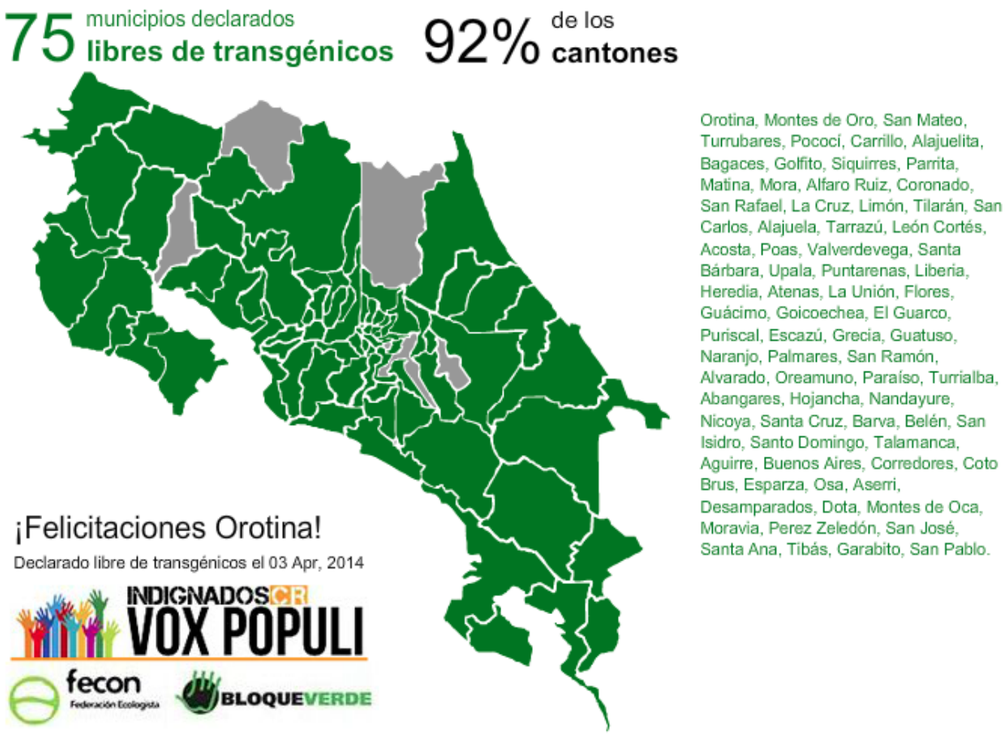
- *"The Organic Law of the Environment Article 17 establishes the obligation of environmental impact assessments: " Human activities that alter or destroy elements of the environment or generate waste, toxic or hazardous materials require an environmental impact assessment by the National Environmental Technical Secretariat established in this law. Prior approval from the agency will be essential to initiate activities, works or projects. The laws and regulations indicate which activities, works or projects require environmental impact assessment. " It is clear then that there is an inescapable duty of compliance with legal and constitutional character to have the environmental impact studies as a prerequisite that seeks the use, consumption, handling, planting or release of GMOs, considering the implications that a project of this magnitude can lead to the environment and human health, it should require control measures and risk mitigation. The environmental viability should be as before any other permit will be granted on GMOs requirement. And the Rule 118 of the Plant Protection Act is silent on such a request. "*

Pejibaye fruits - Source: insightguides.com

- *"Moreover and of fundamental consideration referred to in Rule 132 of the Phytosanitary Protection Law, considered as "confidential " is any scientific or technical information that provides natural or legal persons interested in having a certificate of release to the environment genetically modified grains approved by the Phytosanitary Service of the State. It is violated in a disproportioned way and without any reason, the right to the citizen participation consecrated in numbers 9 and 50 of the Political Constitution which offers power to any person to participate in the affairs where a possible affectation to the environment is discussed, just like international documents ratified by the country over this topic. In addition, any person holds the right to obtain information over the public interest affairs. Not knowing the information that based on an administrative decision, radically limits the right to the participation, not counting on the information means limiting the possibility to know, disagree, oppose and interpose actions tending to generate changes.*



Source: Bloque Verde



Orotina, Montes de Oro, San Mateo, Turrubares, Pococí, Carrillo, Alajuelita, Bagaces, Golfito, Siquirres, Parrita, Matina, Mora, Alfaro Ruiz, Coronado, San Rafael, La Cruz, Limón, Tilarán, San Carlos, Alajuela, Tarrazú, León Cortés, Acosta, Poas, Valverdevega, Santa Bárbara, Upala, Puntarenas, Liberia, Heredia, Atenas, La Unión, Flores, Guácimo, Goicoechea, El Guarco, Puriscal, Escazú, Grecia, Guatuso, Naranjo, Palmares, San Ramón, Alvarado, Oreamuno, Paraíso, Turrialba, Abangares, Hojancha, Nandayure, Nicoya, Santa Cruz, Barva, Belén, San Isidro, Santo Domingo, Talamanca, Aguirre, Buenos Aires, Corredores, Coto Brus, Esparza, Osa, Aserri, Desamparados, Dota, Montes de Oca, Moravia, Perez Zeledón, San José, Santa Ana, Tibás, Garabito, San Pablo.

Territories free of transgenic crops

The first local government that decides to be declared as transgenic free territory was the county of Paraíso de Cartago, on May 28, 2005 (Edgerton , 2010). From then until October 2012 the country had just eight counties in this condition. It was not until August 2012, when demand for planting three varieties of transgenic corn was presented by the company Delta & PL Semillas Ltda., which managed to interest a significant portion of the population on this topic, especially from October. Among the initial actions was the Corn Defense Walk organized by about 30 organizations, from the symbolic town of Matambú (Guanacaste) to the capital city (San Jose). Thanks to this and other actions we were able to position the discussion of transgenic crops at a national level to the point that in just a little over a year (until April 2014) we already have 75 counties declared as territories free of transgenics, which represents 92% of existing counties (81).

As expected, these agreements of the local governments have been questioned and overlooked by both the business sector and government related to this issue. In all this, it is important to note that considerations of cultural and environmental nature have largely opted balance towards building a country free of transgenics.

As can be seen in most of the texts in the declarations (Bloque Verde, 2014), the cultural hub was the priority, which, according Montero (2013): " (...) Confirms the antagonism that exists with the official speech from the Government with the "applied science" implies that they are just reasons "technical and scientific" that come into play with this subject. It is clear that the cultural part is unable to disaggregate and having relation to other components and spheres of life, but the exercise of separating it of this exercise, notes that culture is also political. The fact that many of the declarations have been included as a reason that "threatening native seeds, is threatening our culture" is evidence of how this is assumed and understood by communities, meaning, from the local. In this phrase, elements of sovereignty are combined, identification with the territory, projection model and country life, meaning, that culture is a concept with many implications and power."

Source: http://goo.gl/w2e3KJ

Relevant actors in the country

The Service Department of the Phytosanitary of the State (SFE) from the Ministry of Agriculture (MAG), is the maximum authority to exercise the control and monitor over the transgenic organisms in the country, since they are in charge to grant or deny the applications for planting or of investigation that are desired with transgenics. The department of the SFE is advised by the National Technical Commission of Biosecurity (CNTBio), integrated by 12 representatives of the following organizations: Ministry of Science, Technology and Telecommunications- Micitt (1), MAG (2), Ministry of Environment and Energy (Minae) (2), Ministry of Health- MS (2), National Seeds Office- ONS (1), National Science Academy - ANC (2), Costa Rican Conservation of the Environment Federation- Fecon (1) and Biodiversity Coordination Network - RCB (1). Without a doubt, the CTNBio has played a very favorable and pleasing role to the introduction of transgenics events in the farmlands of the country. Only two of the representatives belonging to the ecological sector (Fecon and RCB) have maintained their opposition argued in the introduction of new transgenic events. Always being a minority in the balance of the vote count of the CTNBio, the ecologists have not been able to stop any application to plant since this commission. However, with the participation in the CNTBio, it has been possible to inform society in general over the situation of the transgenic events released in the country. The above has permitted to sum up new and multiple actors to a national discussion over the topic.

It is obvious that the intention of the last governments have been to favor the cultivation of the transgenic crops in the country. The best example of this is shown in the last three months of 2012, when the introduction of three Monsanto transgenic yellow corn events were discussed: MON-88017, MON-603 and MON-89034-3. More than hundreds of letters from academic sectors, institutions, statements from the university councils of the four public universities in the country (UCR, UNA, ITCR, UNED), specialized entities, civil society organizations, farmers and indigenous sectors, amongst many others, manifested against the authorization of the transgenic corn planting in the country. Sectors that even up to this date have maintained their margin in the discussion have manifested in this occasion, for example: the Board of Directors of the Agronomy Engineers, the Assembly of the Biology School of the UCR, the Cultural Patrimonial Department of the Ministry of Culture and Youth, and the Chamber of Apiculture Fomentation (Garcia, 2014b). Even though all these manifestations took place, and with just the opposition founded by the two representatives of the ecological sector (Fecon and RCBio), the CTNBio gave a positive sentence (with seven votes in favor and two against) to these applications, so that the Department of SFE made the final decision over the subject (May, 2013). Luck seemed to be given thanks to a spontaneous and strong popular resistance and a legal protection appeal before the Constitutional Court. Both appeals were accepted and are actually under study of the respective sentencing to be issued.
The representatives cited in the organizations that form part of the CNTBio, -with exception of the representatives of the civil society (Fecon and RCB)-, supported in plain language by a couple of college professors, the Interamerican Cooperation for Agriculture Institute (IICA), just like the business sector represented by the National Chamber of Agriculture and Agroindustry (CNAA), the Costa Rican Chamber of the Food Industry (CACIA), Crop Life and the Chamber of the Agricultural Inputs, seem to go in hand, given to the participations and declarations open in favor of the transgenic crops (Crop Life, 2014; Edgerton, 2010; Espinoza et al., 2004; Garro, 2013; IICA, 2013, 2011; Obando, 2013; Sáenz, 2013). In a newspaper interview published in La Extra an investigator from the Technological Institute of Costa Rica, TEC (represented by the ANC before the CNTBio), the representative of Crop Life for Central America, and also the President of the CNAA affirmed, amongst other fallacies, that: "Transgenic is similar to a hybrid only that it is more selective (Amenábar, 2013). It is also important to take note that Crop Life is an organism financed by the transnational companies Monsanto, DuPont, Bayer Crop Science y Syngenta, among others, which their goal is to create a green cover up to the Agro toxic industry and transgenic crops in the continent (Crop Life, 2014).

The protransgenic organizations cited have inverted a great energy to have presence in the media organizing scientific forums, participating in interviews on the radio and making some publications in the newspapers that are all in favor of the transgenics. The fallacy propaganda for the articles of these entities have been refuted in a convincing form through the diverse articles

(Anonymous, 2013; Arauz, 2013 a, b; Araya, 2013; Arroyo, 2012b; Barquero y Álvarez, 2013; Brenes, 2013b; Brizuela, 2013; Cabezas, 2013; Calvo, 2012, 2013a, b, c; Coeco Ceiba-Amigos de la Tierra, 2013; García, 2013a, b, c, d, e, 2014a; Núñez, 2013; Peña, 2013; Rigo, 2013; Rojas, 2012a, b; Vindas, 2013).

Pushing the Biosecurity in CR topic, for the sake of making it the impossible coexistence legit with the transgencis, we can make sure two projects stand out: 1) UNEP-GEF of the Implementation of a National Mark over the Biotechnology Security GLF/2328-2716-4B61, October 2010 to March 2014 (Anonymous, 2014), y 2) Project LAC-Biosafety: Latin America: Construction of multicounty capacity for the fulfillment of the Cartagena Protocol of Biodiversity (LAC-Biosafety, 2014). We must signalize that the drivers and responsible ones of the projects mentioned have had positions duly opened to the public in favor of transgenics. However, these projects are a strategy masked to promote the transgenic crops from a trench clearly reduced and scientific.

The opposition to the transgencis in CR is nurtured by very diverse sectors. Apart from academic and student of multiple institutions, the ones who are added to these networks are farmers, indigenous, unions and independent activists. In the last social movement, the Bloque Unitario Union formed within the demands to fight against the transgenics in the country (Bloque Verde, 2013). Here it is important to point out the importance of the role that the Workers Union and the Costa Rican Worker Education Union (SEC), which in October of 2013, during the celebration of their 44th Congress, voted to demand the authorities of the Ministry of Public Education "to prohibit the sale and use of elaborated foods with transgenic products in all the cafeterias and counters in the educational public and private institutions in the country." (Informa-TICO.com, 2013a; SEC, 2013).

It is also worthy to mention the efforts made by the denominated Bloque Verde (2014) in the battle against the transgenics in the country. In fact, students, academics, agriculturists and citizens integrate this organization, which does not have a judicial legal status, in general that identifies themselves as ecologists. Among their last actions, we must point out the public denunciation that they did in front of the collective science of communication professionals coming from diverse Central American countries, interrupting in a peaceful and surprisingly form a seminar for journalists named "The Science behind the Agriculture: the goal to Nutrition for the year 2050", sponsored by Crop Life with the objective to promote the image of the agro-poisons (pesticides and synthetic fertilizers) and the transgenic crops (Informa-TICO.com, 2013b). Here we must also point out the accompanying in this battle by the Ombudsman in the final chapter of resistance against the intent of the introduction of the transgenic corn in the country.

Contamination of the Agro-food Industry (García, 2010)

The first confirmation of the transgenic contamination in the country gives it common sense, being that in our great part of our importations of processed foods and seeds come from the USA and Canada, two of the main producers of transgenic crops in the few countries of the world that allow them (27 to 2013), especially corn, soy, cotton and canola.
The second confirmation surged from a study made by the TEC Biotechnology Center of Investigation (Jiménez 2003), which included samples of seeds, sub products and/or processed foods of rice, corn, soy, cotton and potato. The investigation found that 16 commercial products analyzed, more than half (56%), resulted positive for the study that was performed. The following conclusions from the study are the most important:

- "It is worth noting that the chosen samples are consumed frequently, are of easy access and are found to be distributed in small and large points of sales." (p.78)

- "The results obtained reflect that in Costa Rica various products that circulate have a very high possibility of containing transgenic products and are all found throughout the national territory. (p.78)

Lastly, the third confirmation comes from a study monitoring the detection of transgenics in grains and seeds, completed in 2004 by the Central American Alliance for the Protection of Biodiversity (ACAPB-RCB, 2005; De Faria, 2005). This job was developed with the collaboration of the RCB, and had the support and supervision of the Ombudsman, the Department of Vegetal Quarantine of the MAG, and the Ecological University Front of the UCR and the members of civil society worried by the risks and negative impacts that can be presented as consequence to the transgenic contamination in our country. The results of this monitoring showed 45% of the samples collected proved the presence of transgenic contamination, in the maritime port of entry (Caldera and Moín) as in an outlay located in the San José Central Market. The samples of grains of yellow corn purchased in the Central Market showed proof of evidence that the transgenic BT corn was present. In so far as the five samples of soy collected in Caldera proved the transgenic presence resistant to the herbicide glyphosate. With this evidence, the transgenics of the food chain in the country were present once again. At the same time, it was discovered the incapacity of the State was sheltered of the national front biodiversity to the risks and impacts that the OGA presented, just as it verified by Sprenger (2008) with his work over the transgenic seed production activity on Costa Rican soil.

Before the acknowledgement of the incapacity by part of the State to adequately monitor the activities related to the investigation and the cultivation of transgenics in the country, the option was chosen to ask the companies to contract private auditors in biosecurity to take care of these functions, based on what was stipulated in the Decree No. 32486-MAG aforementioned. The above comes to for the obvious reasons, like placing a wolf take care of the sheep (Pacheco 2006). In any manner, the monitoring of the transgenic crops released in the environment made it difficult because it could impede the problems inherent to the contamination, since it was recognized openly by the person in charge of it eight years ago under the supervision of projects of reproduction of transgenic seeds in the National Seed Office: "We cannot spend 24 hours supervising." (Salazar, 2013).

Source: Bloque Verde

BLOQUEVERDE

National Campaign “Pura Vida sin Transgénicos” (2012-2014)

This resistance campaign originated in October of 2012, rooted from the request of permits to plant three types of transgenic yellow corn, precipitated before the CNTBio by the company Delta & PL Semillas Ltda., a company that is a subsidiary to the questioned corporation Monsanto (Robin, 2008). For this moment diverse social actors (agriculturists, indigenous, apiculturists, ecologists, agronomists, professionals in diverse disciplines, academic institutions of the four public universities, others, even politicians), began to get interested and informed over the risks and dangers associated with the transgenic crops, leading them to manifest in diverse forms against the sowing of this type of cultivations in the country. Between November and December of 2012, diverse concentration and manifestations of protest took place, among them was the "Defense of the Native Seed Walk" which was a little bit more over 200 kilometers that began its route in the Guanacaste region from Matambú on November 28th, ending in the offices of the MAG in the capital city on December 3rd. During this route, the walkers were well received by the Municipalities of various counties, where documents were presented with the information over the dangers associated with these cultivations, as well as a request so each of the Municipal Councils reached an agreement to declare themselves "Transgenic Free Territory", and at the same time they collected a little more over seven thousand signatures soliciting the denial of the requests made for the sowing of transgenic corn in our territory (Montero, 2013; UITA, 2012a, b; Zink, 2012). A few days later, on December 12th, the first appeal for Constitutional right's legal protection herein stated was filed before the Constitutional Court.

In 2013, the visits to the municipal councils were intensified in order to offer them fundamental information regarding this topic (García, 2014b, 2008; Kuruganti, 2013), and to also let them see the necessity and convenience to vote and declare themselves as a "Territory free of genetically modified crops". In May of the same year, the Ombudsman filed before the Constitutional Court another precipitated appeal for Constitutional right's legal protection. Later on, with the motive of the Worldwide National Food Day (October 16th), a draft of the bill named "National Moratorium for the Release and Cultivation of live modified organisms (transgenics)" was presented (Costa Rica 2013). Article 1 of the draft states the following: "We ask that you declare a national moratorium for the release and cultivation of live modified organisms. The moratorium will be suspended until certainty exists and a scientific consent over the diverse risks that the live modified organisms imply. The moratorium will take effect all over the Costa Rican territory." In addition, this draft of the bill will be declared of public and national interest promoting the agro-ecological practices (art. 4). With this initiative, we are supporting the intention of all those local governments that have voted on becoming territories free of this type of crops, backed up by the will of all those social sectors that have joined us in this national campaign. As a reaction to this proposal and in a desperate intent to prevent the approval of this draft of the bill, the ANC, along with a couple of professors from the UCR and one from the TEC organized the activity known as "Information and Conversation with the Congressmen elected over the Agricultural Biotechnology" in a hotel located in the capital city (ANC, 2014; Villalobos, 2014).

The actions of this campaign also sums a draft of the executive decree elaborated by in part of the Ministry of Culture and Youth to "Declare the corn (Zea mays), and its varieties native (local and creole) and to the traditions, agricultural practices, uses, expertise, flavors and colors associated with this, as Cultural Heritage of Costa Rica" (MCJ, 2013; Obregón, 2013), which is found "stuck: in the offices of the Executive Power.
In the beginning of 2014, diverse organizations (Green Block, Green Farmer's Market, Local Women Network, Native Seed Sanctuary of Agro ecological Farm Loroco, Transgenic Free Latin American Network, College Community Work Eat Organic Project of the University of Costa Rica, Kokopelli Association and the environmentalist show Green Era of UCR TV Channel among others) sponsored and supported the timely and successful visit to the country of the internationally known Dr. Vandana Shiva, one of the maximum worldwide references to ecofeminism topics and the resistance against transgenics, and winner of the Nobel Alternative Prize (Right Livelihood Award) in 1993, in which diverse communication collective media covered (Arguedas, 2014; Canal UCR, 2014a y b; Calderón, 2014; Chinchilla, 2014; EFEverde, 2014; Fecon, 2014; Jiménez, 2014a y b; Ortiz, 2013; Soto, 2014; Teletica.com, 2014a y b; Trucchi, 2014).

For more details over the genesis and development over what was found sustained in this campaign, we recommend you read the lecture of the work from Montero (2013).

Future panorama

The organizations involved in this campaign will continue to visit the few municipal councils that still have not yet decided to declare themselves as transgenic free territories in order to inform them with relevant documental evidence which will help them make an informed decision in the regard. The accompanying throughout encounters and trades of transgenic free territories, as well as the organization of agro-ecological festivals with the exchange of creole seeds is part of the initiative that would give more empowerment to the local leadership over said declarations. In this same line, work will be continued so that the municipal autonomy is respected, so that the transnational corporations of genetically modified seeds, as well as the central government and the other organizations that have supported and defended them in an extremely shameless fashion.

In order to consolidate the national debate regarding the transgenics, the organizations involved in this theme have decided to start an open discussion about labeling products that contain them. While it is believed that labeling is not the end of the campaign’s objectives since this is only one way to legalize the transgenics, it is considered that this action would generate a rich discussion about transgenic crops in different strata of society. This is expected to further visualize this topic, involving new actors in the resistance against the transgenics.

Source: Red de Mujeres Rurales de Costa Rica

Source: Bloque Verde

Colophon

Costa Rica has marked a strategic way in the resistance to the transgenics, which has managed to carry through the articulation of a broad and diverse nationwide network that moves and works in order to defend its rich, natural and cultural diversity. This strategy has been one of the strongest components before the greedy attempts of corporate ownership in relation to our most cherished values.

The reasoned and documented argument in this discussion, with the participation of the great diversity of people who have actively joined this resistance (students, farmers, indigenous people, artists, and professionals from different disciplines) has been the key to achieving the declaration of most national territory as “Territory free of genetically modified crops”, through the decisions made by 92% of local governments (April 2014). In all this, the realization of the aforementioned actions of resistance with creole seeds, knowledge, flavors and colors, as well as evidence that transgenic seeds have no place in our rich culture and biodiversity, is part of what has made this movement as inclusive and fertile (Arroyo, 2012a; Food Idealists, 2012; Osorio y Arguedas, 2013; UCR-TCU Eat Organic, 2012).

It is important to see here that this discussion is largely part of a sociocultural court, and therefore rises beyond what the spokesmen of agro-businesses and some university professors can say, dressed as "science" made to their order, promoting only their commercial and personal interests about life and the culture of the people.

We must keep in mind that all these actions performed by this great national movement are being protected in every territory, the cultural roots that are found in the seeds, as well as indigenous and peasant wisdom, while defending one abundant future of agro-ecology and all that implies in terms of health, culture, environment, economy, security and food sovereignty.

Acknowledgements

To all those who directly or indirectly contributed to sharing available information on crops and genetically altered foods by raising awareness to the rest of the Costa Rican citizens, informing the need to continue to have a critical and informed position on an issue that concerns us all because it is related to our health, culture, environment, economy, food security and sovereignty.

Source: Red Semillas Libres Chile

Note

[1] Dedicated to our companion in struggle Juan Manuel Gonzales Gutiérrez, JuanMa, of the Seed Network of Andalucía. Deseased unexpectedly on March 3, 2014 at the age of 37 años. His seeds of freedom will remain in the hands of the people awoken (http://goo.gl/uQoZvt y http://goo.gl/oZidc7). In the same manner to Dr. Rubens Onofre Nodari, Professor and Investigator of the Postgrad Program of Vegetable Genetics Resources of the Federal University of Santa Catarina (Florianópolis, Brasil), for his valuable imput to the investigation and scientific discussion critisized around the topic of transgenic food and crops. (http://goo.gl/EYN2EK).

[2] Ing. Agr. with a Masters en Agro-ecology. Activie member of Bloque Verde (Green Block), the Costa Rican Federation for the Conservation of the Environment (Fecon), Oilwatch Mesoamérica y the Coordination Network of Biodiversity. Professor of the Organic Agriculture Center of the National Leanring Institute. And is also a representative for Fecon before the National Technical Commission of Biosecurity (CNTBio).

[3] Dr.Jaime E. García González Sc.Agr. Lecturer of the Environmental Education Center (CEA) of the State University of Distance (UNED) and of the School of Biology of the University of Costa Rica (UCR). Author of more than one hundred articles as well as various books related to the topics of pesticides, organic agriculture, transgenic crops and environemntal problrems. biodiversidadcr@gmail.com

El Salvador - Ecoviva

Farmer cooperatives, not Monsanto, supply El Salvador with seed

February 27, 2015 by Nathan Weller, Programs and Policy Director

Source: *http://ecoviva.org/farmer-cooperatives-not-monsanto-supply-el-salvador-with-seed/*

In the face of overwhelming competition (*http://www.grain.org/article/entries/4055-global-agribusiness-two-decades-of-plunder*) skewed by the rules of free trade, farmers in El Salvador have managed to beat the agricultural giants like Monsanto and Dupont to supply local corn seed to thousands of family farmers. Local seed has consistently outperformed the transnational product, and farmers helped develop El Salvador's own domestic seed supply–all while outsmarting the heavy hand of free trade.

This week, the Ministry of Agriculture released a new round of contracts to provide seed to subsistence farmers nationwide through its Family Agriculture Program (*https://www.youtube.com/watch?v=01F1zvHT7fU*). Last year, over 560,000 family farmers across El Salvador planted corn and bean seed as part of the government's efforts to revitalize small scale agriculture, and ensure food security in the rural marketplace. Drought conditions across the country made access to seed all the more vital for rural livelihoods, making the seed packets supplied through the government program the primary means for thousands of families to put food on the table.

In 2015, rural cooperatives and national associations will produce nearly 50% of the government's corn seed supply, with 8% coming from native seed—a record high. In the Lower Lempa, where seven farmer organizations have produced corn seed since 2012, this means over 4,000 jobs and income for rural households, primarily employing women and young adults. The public procurement of seed - or the government's purchasing power through contracts - signifies over $25 million for a rural economy still struggling to diversify and gain traction.

The success of locally-bred seed varieties, compounded with their low production costs, allowed the Family Agriculture Program to contribute to historically high yields nationwide for corn and beans. Last year, more farmers produced more corn and beans at the most efficient yield per acreage than any other year over the last decade. This has also led to a significant adjustment in El Salvador's trade balance on corn: Imports of white corn in 2014 were a full 94% less than 2011.

Producing seed locally was no small feat. It involved savvy farming techniques, better business practices, and advocacy. It also required a government willing to take a critical look at the transnational agribusiness model that dominates the farming sector the world over.

The previous administration under Mauricio Funes understood this model, and its impact on a relatively small agricultural market like El Salvador's. It also understood how to break these cycles of dependence on foreign agribusiness, and simultaneously build a more robust private sector through the power of public procurement. In answering his call, growers' associations, categorized as small or medium-sized enterprises, had a steep learning curve in providing seed to meet government standards, including germination, yield rates and packaging. They also had to conform to government contracting guidelines, a task that proves difficult to navigate for many small-medium sized enterprises.

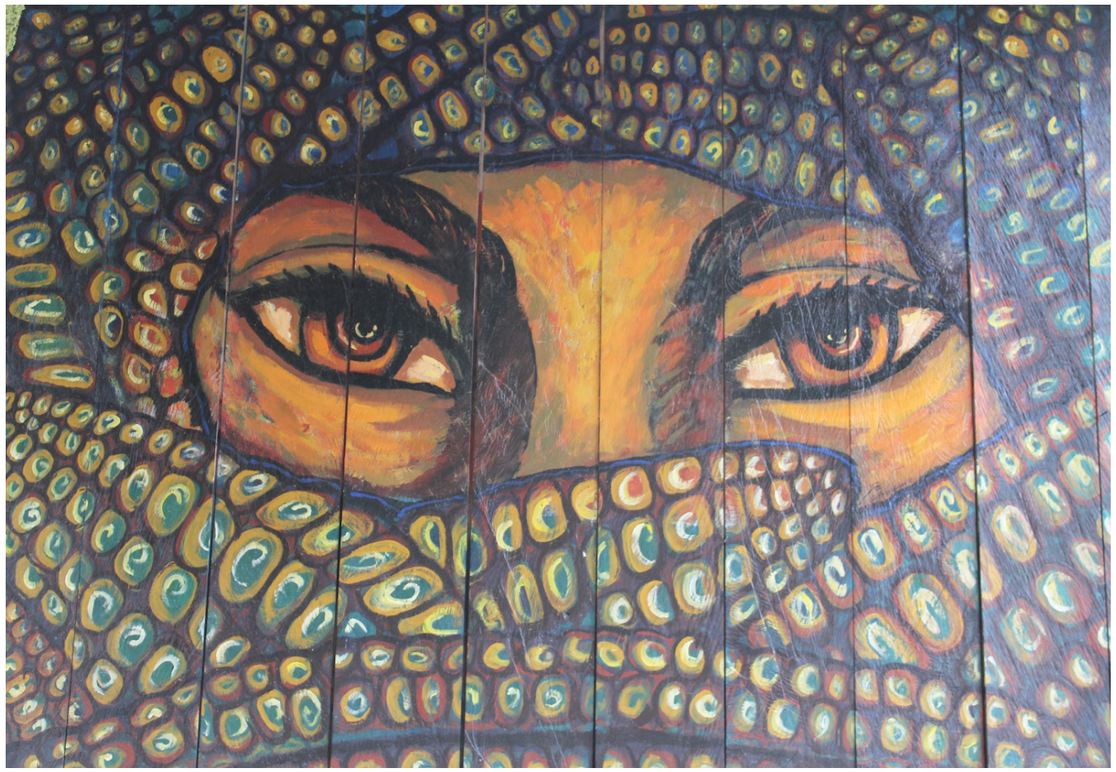
Throughout this process, EcoViva and partners at the Mangrove Association labored to prepare local cooperatives to successfully bid for and execute these contracts for corn seed. Our efforts paid off: in 2014, El Salvador successfully sourced quality seed from 16 national enterprises (*http://ecoviva.org/is-the-u-s-sowing-the-seeds-for-child-immigration/*). Over 20% of corn seed originated in local cooperative fields in the Lower Lempa region, and participating families saw their annual income double - while saving the government hundreds of thousands of dollars by providing affordable seeds. In 2015, that number has risen to nearly 50%.

Despite these successes, some questioned the validity of Salvadoran businesses providing seed. In 2013 and 2014, the United States Trade Representative and the Interagency Trade Enforcement Center circulated an annual report that cited concerns about government purchases, including seed, under the Central American Free Trade Agreement (CAFTA). Coincidental to these reports, the American Chamber of Commerce in San Salvador complained in the press that their members were being denied contracts for seed, and Salvadoran farmers denied a superior product. These members included Monsanto, Dupont and Pioneer, whose affiliates had provided seed in the past to the Salvadoran government. CAFTA Chapter 9 outlines the standards for how contracting governments, such as El Salvador's, can purchase goods and services. It sets the rules for open, competitive and transparent contract approval. It also stipulates that governments cannot discriminate against foreign businesses.

During the period questioned by the USTR, the government of El Salvador ironically conducted a contract process that allowed more businesses to provide a better product at a cheaper price. Prior to 2013, the Salvadoran government bought 70% of its annual demand from a Monsanto affiliate, purchasing a seed variety with no field trial validation and at a price over double that being offered by local seed producers. In 2014, EcoViva and allies (*http://politicsofpoverty.oxfamamerica.org/2014/07/seeds-discord-seeds-development-way-us-policy-el-salvador/*) proved that the Salvadoran government denied this affiliate a contract because its seed was expensive and lacked proper field trials- not because it was a foreign company.

Nevertheless, in 2014, the United States threatened to deny foreign aid to El Salvador unless it opened its seed contracts to foreign businesses (*http://www.truth-out.org/speakout/item/23790-seeds-of-food-sovereignty-grow-in-the-shadow-of-cafta*), then stepped back when its power to use foreign aid as leverage on free trade standards was publicly questioned (*http://www.politico.com/story/2014/07/el-salvador-aid-108506.html*). Today, the United States now says that it supports El Salvador's current contract process on seed - a process in which national seed producers continue-as before-to offer a better, more competitive product (*http://sansalvador.usembassy.gov/news/2014/12/19.html*).

Local seed producers like the Mangrove Association and cooperatives in the Lower Lempa can guarantee the government of El Salvador seed varieties that have better yields and lower prices than what is found in the transnational agribusiness market. Salvadoran businesses have learned to compete for and win government contracts, which allows small and medium sized enterprises to innovate and employ hundreds of people in rural communities. Improving the rural economy is critical for these areas, such as the Lower Lempa, that have high rates of unemployed young adults fleeing to the United States in search of jobs and opportunities. National cooperatives and businesses have also helped to protect El Salvador's own seed lineage, and reduce the quantities of harmful chemicals applied daily to Salvadoran soil. It's initiatives like these that provide a way forward for El Salvador and its domestic economy in a globalized trade environment.



Mexico - Devon G. Peña, Environmental and Food Justice

Monsanto In Mexico | Statement Of The Union Of Socially Concerned Scientists

by Devon G. Peña, Ph.D., 30 November 2014

Source: *http://ejfood.blogspot.it/2014/11/monsanto-in-mexico-statement-of-union.html*

Moderator's Note: At the request of anti-GMO activist networks in Mexico and the U.S. we are posting our translation of an editorial published in the Mexican national daily, La Jornada *http://www.jornada.unam.mx/2014/11/28/opinion/028a2pol* two days ago (28 November 2014). The statement was prepared by Professor Elena Álvarez-Buyll on behalf of the Mexican NGO known as Unión de Científicos Comprometidos con la Sociedad (UCCS) or Union of Socially Concerned Scientists.

This is one in a continuing series of translated works we are posting to keep our English language readers informed on important developments and perspectives in Mexico related to the science, culture, and politics of food and agriculture, with a focus on growing social movements for the protection of Mexico precious diversity of native crops. Mexico is one of the premiere centers of origin for native (land race) crops - including multiple varieties among amaranth, avocado, bean, cacao, chile, corn, papaya, squash, and much more. One recent study (CONABIO as cited inBarrera-Bassols et al 2009) estimates that the crops developed by indigenous farmers of the Mesoamerican origin center comprise nearly 16 percent of all the crop varieties grown and eaten across the planet. Protecting this cultural ecological heritage is vital to the future of the planetary systems that sustain biological diversity and agroecological resilience.

Mural of Zapatista woman wearing a balaclava mask made of maize, Oventic, Zapatista Caracole - Photo by Kelly

On top of injury, a transgenic stab in the wound

Elena Álvarez-Buylla | Mexico City | November 30, 2014

Amid the grief that shakes us following the tragedy of Ayotzinapa, we were surprised by the news that the Federal Commission for Protection against Sanitary Risks (COFEPRIS) has approved the free consumption of 132 transgenic products of which 50 percent corresponds to corn and the rest are cotton, soybean and canola, among others. This announcement was made by GMO enthusiast Alejandro Monteagudo Cuevas, CEO of AgroBio Mexico, who interests are kept in business with the approval of the planting of transgenic corn.

Through collective action, based on scientific evidence on the harmful effects on the environment and the biodiversity of native maize, we succeeded in suspending the release of transgenic maize in Mexico. The future of corn, now subject to climate change and other challenges, depends on the survival of Mexican landraces, the product of deeply grounded indigenous peoples who still support an important part of national production. The release of transgenic maize threatens these landraces and indigenous peoples in multiple forms.

It seems the State approves the use of more transgenic lines to compensate for the interruption our resistance brought to the business of monopolistic producers of GMOs, at the expense of food sovereignty and public health. This favor for the transnational corporations coincides with the rejection of GMOs by various countries in Europe, Asia and Latin America. There is abundant scientific evidence of health damage from the consumption of transgenic foods including the inordinate and growing quantity of herbicides and pesticides used to produce these crops.

Epidemiological data has been derived from animal studies in Paraguay, Argentina, and the United States, a country where the health of its inhabitants has deteriorated rapidly over the past 20 years. Since the mid-1990s, we witnessed in the USA an extraordinary increase in deaths from various cancers, diabetes, kidney damage or metabolic disorders, and even diseases like Alzheimers. These results have been published in the most prestigious peer-reviewed scientific journals. What is the cause of this trend? Recent studies indicate that the consumption of GMO foods and their associated agro-toxins may play a causal role.

GMO crops began to be release massively in the US in early 1990. One of the components that is most clearly correlated with the tendency toward greater incidence of these diseases is increased use of the herbicide glyphosate, called "Slaughter" [Faena] in Mexico. This herbicide was used for about 10 years before the release of GMO crops in the US, but was used more widely with the development of herbicide-tolerant transgenic crops. In Europe, the planting of herbicide-tolerant GMOs has not been approved and so the use of the agrochemicals and their consumption is avoided.

The correlation between increased disease prevalence and use of glyphosate along with the cultivation of transgenic herbicide-tolerant soybeans and corn is greater than 90 percent in many cases from the mid to late 1990s. Although correlation does not indicate causality, the correlation is so high for many diseases (22 studied) that it can be seen to indicate that this herbicide is a causative agent.

Inhabitants of the United States are subject to contaminants in water, air and food, and glyphosate apparently affects bodily systems exposed to the chemical. However, the US government continues to use its population as guinea pigs, has not approved labeling of GMOs, and does not prohibit the use of Slaughter (Roundup) and other agrochemicals. Some experts allude to corruption. They insist that the public institutions governing the use of these substances should apply the precautionary principle, rather than wait for the damages appear.

These damages and the persistence of toxins in the environment are difficult to reverse; and this happens at a time when we are only now beginning to understand the importance of epigenetic inheritance and how exposure today will affect future generations, even if the children and grandchildren of these were never exposed. In the absence of corruption, Slaughter (Roundup) never should have been approved for widespread use and it should be recalled.

Furthermore, the presence and spread of GMOs themselves, involving contamination with a life of its own and with unpredictable impacts, will be irreversible if it is not stopped now. This is particularly important for centers of origin and diversity, as is the case in Mexico for corn. Given recent data about damage to health by cultivation and

consumption of GM, the only acceptable approach is to prevent these crops from contaminating our environment and food. The only purpose served by the use of GMOs and agro-toxins is profit; 20 years after their release, they have not fed one hungry person in the world; nor have yields increased or the use of toxic chemicals decreased.

Given the above, it is surprising that the current and two previous governments of Mexico sacrifice our health and food sovereignty, our environment and food, as well as our health in exchange for dark trade agreements. Scientific evidence in recent years shows a strong association between the consumption of GMO foods and exposure to glyphosate and increased prevalence of diseases such as intestinal inflammation, incidence of certain cancers, renal disorders, and neurodegenerative diseases (see, for e.g., Journal of Organic Systems 2014 *http://www.organic-systems.org/journal/92/JOS_Volume-9_Number-2_Nov_2014-Swanson-et-al.pdf*

This research should be sufficient to compel the State to prevent these types of pesticides and herbicides from contaminating our food. * Researcher with the Institute of Ecology, UNAM; Campaign Coordinator, UCCS. For more information go to: *http://www.uccs.mx*

Unión de Científicos Comprometidos con la Sociedad

UCCS

Source: noticiasnet.mx

Oventic, Hombres de Maiz
(Source: tierraylibertad.org)

Seed Freedom in America

Canada – April 2014

Launch of Satya Graha against Bill C-18

As part of the Global Movement to Reclaim Seed as Commons, International Call for non co-operation and civil disobedience against laws such as Bill C-18 which will rob Canadaian farmers from their right to save and exchange seeds and further corporatize the food and agricultural system.

Vandana Shiva sows seeds for the future:
http://rabble.ca/blogs/bloggers/penney-kome/2014/04/vandana-shiva-sows-seeds-future-1

Dr. Vandana Shiva:
Fighting the GMO giants
http://pialberta.org/content/dr-vandana-shiva-fighting-gmo-giants

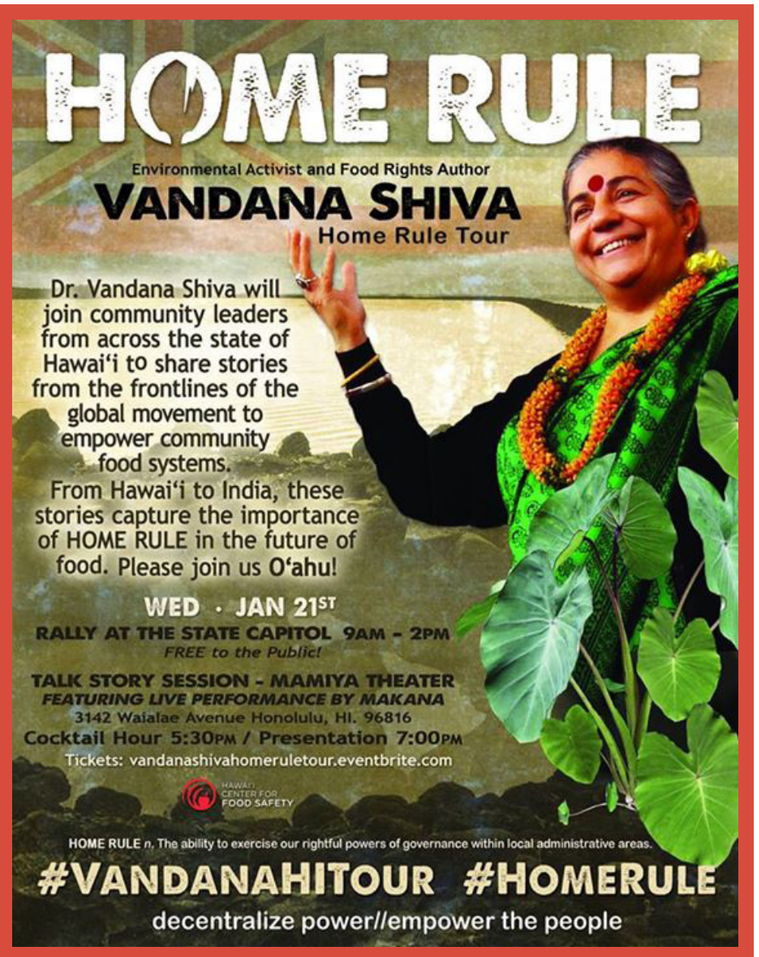
Activist Vandanda Shiva calls for 'satyagraha' against federal Bill C-18
http://blogs.edmontonjournal.com/2014/04/12/activist-vandanda-shiva-calls-for-satyagraha-against-federal-bill-c-18/

VIDEO - Vandana Shiva in Edmonton, April 11, 2014
http://youtu.be/gPreph9dtT8

Photo by Norberto Duarte AFP

The Vandana Shiva Home Rule Tour – USA, Hawaii – January 2015

Conferences Videos
http://www.navdanya.org/blog/?p=1973



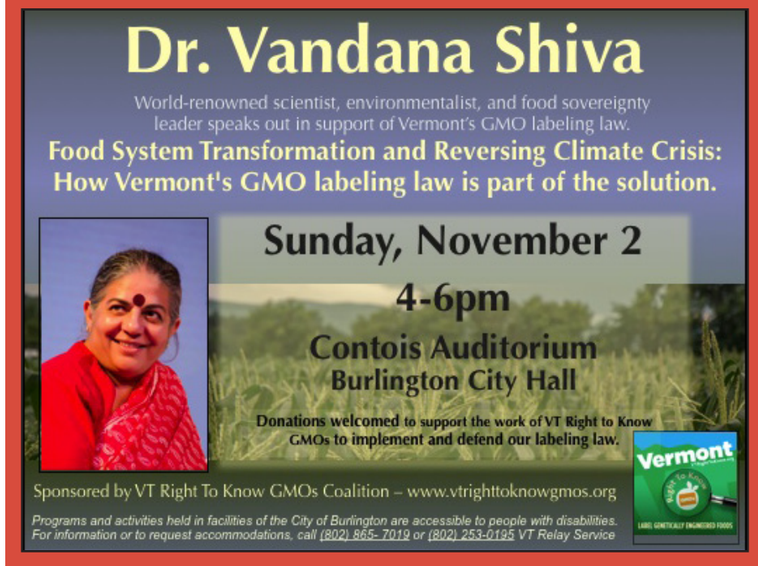
Source: Hawai'i Center for Food Safety

PORTLAND OR, US: Help Make Portland Come Alive with YES ON 92 lawn signs! with Oregon Right To Know – Call to Action 2014:

http://seedfreedom.in/events/help-make-portland-come-alive-with-yes-on-92-lawn-signs/

Source: Orgon Right to Know

Source: TheNOFAVT



Source: Vermont Right to Know

Seeds of Change : GMOs and Vermont's labelling law – November 2014

Vandana Shiva speaks about the effects of GMO crops in her home country of India and other developing countries in a lecture attended by more than 200 at Vermont Law School in South Royalton. Shiva said she strongly supports Vermont's new GMO labeling law.

Conferences Videos
http://seedfreedom.info/now-available-dr-vandana-shiva-vermont-talk-videos/

Scientist, food activist lauds Vt. GMO law
http://seedfreedom.info/scientist-food-activist-lauds-vt-gmo-law/

Fraley Lecture Opposition – Iowa, USA

Source: *http://seedfreedom.info/fraley-lecture-opposition-iowa-usa/*

A group of graduate students at Iowa State attended the Robert Fraley lecture on Oct. 15 to listen to his speech that was given in celebration of the World Food Prize. Out of the six students that came to silently protest, 5 wore gas masks and signs over their bodies that read messages like "Support Food Democracy." The sixth student wore a banana costume with a sign that read "keep me GMO-free."

"Our inspiration for doing the silent protest is in reaction to the recent email to Iowa State students in April of 2014 that offered volunteers $900 in return for consuming GMO bananas that were supposed to help increase vitamin A levels. Students have gathered together to discuss this topic, and are looking forward to doing other events in opposition of Iowa State's involvement in this GMO banana research".

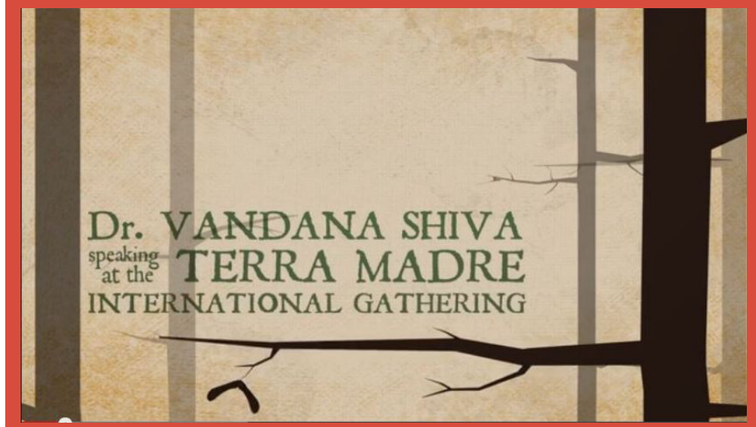
NO GMO BANANA Campaign was launched on October 2nd by The Global Movement for Seed Freedom to raise awareness about GMO bananas (expand on vit.A modification) being based on Biopiracy.

Tests on humans carried out in Iowa are corporate props whose real aim is the rapid commercialization of pirated GMO bananas. If the Iowan trials are deemed successful, then the GMO bananas patented and issued from these tests will be used in Uganda and other developing countries.

Photo by Jackie Nester

BALDWIN NY, US:
September Garden Party & Action For Seed Freedom, with Baldwin Organic Garden Share - Call to Action 2014: *http://seedfreedom.info/events/september-garden-party-action-for-seed-freedom*

Source:
Baldwin Organic Garden Share



EVERYWHERE:
Launch of 'Scarcity' animation video, based on Vandana Shiva's speech at TerraMadre 2008, by Zoe Robertson - Call to Action 2014: *http://youtu.be/nfvSU9pl63w http://seedfreedom.in/events/launch-of-scarcity-animation-video-based-on-vandana-shivas-speech-at-terramadre-2008*

Seed Freedom Mobilization Tour of Latin America

In the wake of increasing assaults by biotech lobbies and unjust laws, the networks in Ecuador and Costa Rica invited Vandana Shiva and the Seed Freedom team to speak at conferences of the Latin American Alliance for Seed Freedom and Food Freedom, and conduct workshops and exchanges with Women Seed Guardians and farmers of Latin America as well as university students and seed savers and networks. They invited the Seed Freedom Movement to create a global solidarity for their movements, integrating them into the Global Citizens Response and thus help strengthen the movements. The Latin American Seed Freedom mobilization tour has led to a strengthening of disparate movements working on diverse issues to come together. The Free Seeds Network of Latin America made up of over 200 organizations, Bloque Verde, The Seed Guardians Network, The Global Alliance of Rights of Nature are all now core partners of the Seed Freedom movement.

As a follow up to the Seed Freedom mobilization tour, the 2 agronomists Mr. Fabian Pacheco and Permaculturist and Seed Saving Expert Javier Carrera are coming for capacity building and knowledge exchange with Navdanya farmers in India and Navdanya International farmers and European movements in Itay in Sep-Oct 2014.
Moreover, The members of the Bloque Verde and Seed Guardians Network of Costa Rica are visiting Navdanya India in September 2014 for the steering committee meeting to discuss strategies for the next phase of the Seed Freedom movement. Joint actions, campaigns research and seed rescue missions have been planned for the next phase of the Seed Freedom Movement.

Other Key outcomes:

- The SF mobilization tour of Ecuador, Costa Rica, (and meetings with presidential candidates in CR) Brazil, Peru and Mexico. Seed brought into the center of discourse at the Rights of Nature Conference in Ecuador in Jan 2014 as well as the Permanent Tribunal on RON presided by Vandana Shiva.

- The movement for creating GMO Free Zones resulted in over 90% of Costa Rica GMO Free.

- Columbia RES 9.70 put on hold

- Chile seed law rejected

- Support to the movement against gmo maize in Mexico by joining permanent people's tribunal , providing testimony for the class action suit that has put an interim halt on trials and offering solidarity through public meetings.

Ecuador – January 2014 Seed and Family Farming : Future of Food

Event Description [Spanish]: *http://seedfreedom.in/dr-vandana-shiva-in-ecuador-on-january-the-17th/*

Source: Red de Guardianes de Semillas Ecuador

Ecuador - Vandana Shiva in defense of Yasuni National Park

Videos

- [Spanish] *http://youtu.be/-TnSR2bjR94*
- [English] *Excerpt: http://youtu.be/sp5RKRVTlTA*

Ecuador - Rights of Nature Tribunal

Source: Globall Alliance for the Rights of Nature

A diverse gathering of 60 scientists, attorneys, economists, indigenous leaders, authors, spiritual leaders, politicians, actors, and activists from 16 countries and 6 continents.

Rights of Nature Tribunal President's closing statement: *http://seedfreedom.in/rights-of-nature-tribunal-presidents-closing-statement-quito-ecuador/*

2014 Global Rights of Nature Summit Outcomes: *http://therightsofnature.org/ron-summit-outcomes/*

First International Tribunal on Rights of Nature: *http://amazonwatch.org/news/2014/0121-first-international-tribunal-on-rights-of-nature*

Costa Rica – January 2014

Report with Photos, Videos, Articles:
http://seedfreedom.info/seed-freedom-mobilization-tour-of-latin-america-costa-rica-january-2014/

Vandana Shiva with Rural Women Network of Costa Rica

Mexico – April 2014

Permanent People's Tribunal against GMO Maize , support the movement against GM Maize and testimony for the class action suit that has put an interim halt on trials and offering solidarity through public meetings
Photo source:
http://www.lacoperacha.org.mx/vivimos-democracia-trasngenica-vandana.php

Report with Photos and Articles:
http://seedfreedom.info/seed-freedom-mobilization-tour-of-latin-america-mexico-april-2014/

With René Sánchez Galindo and Adelita San Vicente

SAN JOSÉ, COSTA RICA - Demonstration in front of Constitutional Court – Call to Action2014, with Bloque Verde: Report [Spanish]:

http://seedfreedom.in/es/costa-rica-ecologistas-ganan-batalla-contra-los-transgenicos/

Source: Bloque Verde

SANTIAGO, CHILE: Mini Eco Festival / Mini Festival Ambiental - Semana Carmeliana, with ECO-Misión Verde and Red Semillas Libres Chile - Call to Action 2014:

http://seedfreedom.in/events/mini-festival-ambiental-semana-carmeliana/

Source: Comisión Ambiental CCP

Source: Let's celebrate diversity

Austria – Arche Noah

EU seed marketing law: It's time for the diversity perspective!

The current reform of European seed marketing legislation opens a window of opportunity for systematic improvements in the area of agro-biodiversity and farm-saved seeds. After the rejection of the Barroso proposal by the European Parliament, the Juncker Commission gets a second chance to come up with a sound piece of legislation. Civil society hopes that they will seize that chance. ARCHE NOAH will continue its efforts for the mainstreaming of both plant and actor diversity.

By Iga Niznik, Advocacy Officer at ARCHE NOAH, The Seed Savers in Central Europe.

On May 6, 2013 the draft for a new EU seed marketing regulation was launched despite huge public protest. If the new EU seed regulation had been adopted, it would have meant huge administrative hurdles and hefty limitations for biodiversity and farm-saved seeds. It would have threatened local varieties, ignored costumers' and seed users' freedom of choice and imposed agribusiness interests.
The seed regulation was tailored to serve corporate interests, restricting non-industrial plants to tiny and bureaucratic niches. Whereas the conventional varieties were foreseen to be marketed without limits, heritage plants were to be doomed to small bags, small quantities, small operators, a "region of origin" norm or totally forbidden. The message of the law was clear: Diversity and farmers' seeds must be an exception; industrial crops must be the rule.

I am using the conjunctive and the past tense: For now small scale farmers, producers and consumers can give a sigh of relief! After a huge wave of protest arising from different European Member States -to our knowledge, at least 900.000 signatures against the seed marketing regulation have been collected-, the European Parliament rejected this very proposal in the first reading in March 2014.
In response to this, the newly installed Juncker Commission confirmed in December 2014 that they will not continue working with the rejected proposal. They might withdraw it and replace it with a completely new proposal, or, instead, modify the failed text[1]. In any case, we can expect a more or less new proposal for the reform of the seed marketing law. This presents the opportunity for the Juncker Commission to come up with a sound piece of legislation which could translate to a sustainable, systematic and future-oriented reform: Today's EU seed and plant reproductive material marketing law can be regarded as a dinosaur from the 20th century.

First of all, the industrial standard for crops must change from mandatory to voluntary.
The "biodiversity-as-exemption" approach puts the cart before the horse. In a future-oriented legislation, biodiversity, heritage plants and farm-saved seeds must be allowed to become mainstream. According to the FAO, over the course of the twentieth century, we have lost about 75 percent of the world's agricultural diversity. And the loss continues; every day, plant varieties disappear forever. Plant lovers are not the only ones who should worry about this: plant diversity is fundamental to the food security of all people on Earth. Diversity is a treasure chamber. It ensures that our agriculture can adapt to changing environmental conditions and challenges, such as climate change, diseases and pests. It gives plants the ability to flourish under extreme conditions and in remote areas – in short, anywhere where humans want to live and eat.

Secondly, the legal basis of the legislation must be reconsidered. The legislation's legal basis has a detrimental impact on its main orientation. Today's existing legislation, as well as the rejected proposal, have as their legal basis the Common Agriculture Policy—and, therefore, its focus on increased productivity. This is odd, as increasing productivity is an outdated mantra from 20th century war times. In fact, today in Europe, we face not food shortage, but rather food waste and obesity. In the "underdeveloped" parts of the world, food scarcity is a distribution problem, not a productivity problem. Thus, we propose to make the seed marketing law reflect its name and actually make it a marketing law, with the internal market and the environment as its legal basis. In addition to that, one cannot protect biodiversity by increasing productivity, right? Because of this, we also demand the limitation of the legislation's scope to the anonymous market. Private exchanges of seeds which are in the public domain must remain outside of the scope of this legislation – be they free of charge or not.

Thirdly, a future oriented seed marketing legislation must enable a true and fair competition on the market. Today, we face a very worrying situation in which, according to studies, concentration is very high. For example, in Europe, only 5 companies own 95 percent of conventional vegetable varieties. Both the legislation in place, as well as its proposed replacement, constitute barriers to plant innovation, with greatly detrimental effects on seed users and consumers. Indeed, no competitive, differentiated and demand-driven seed market could possibly emerge under the currently applicable and proposed terms. This is due to very burdensome and limiting rules which make it incredibly difficult to enter the market. A start-up would be virtually forced to give up its efforts to enter the seed business. It is thus imperative that a future oriented seed marketing legislation allows fair and free competition between different private quality schemes, as well as offer incentives for small and biodiversity-oriented breeders and producers. Farmers, home gardeners and other seed users must not be forced to become customers of the industrial seed producers.

ARCHE NOAH is going to make every effort to put the diversity perspective on the table of European decision makers.
As a seed savers organisation based in Austria and Brussels, our mission is to ensure the conservation and sustainable use of agricultural biodiversity, regenerating forgotten old varieties and promoting their availability in the market.
"This time it's different", the Juncker Commission promised at the beginning of their term.
In light of the unquestionable need for an ambitious reform of the EU seed and plant reproductive material marketing legislation, civil society hopes that the European Commission will grasp this historic opportunity to build a well-grounded, sustainable and irreproachable piece of legislation.

Learn more: *www.arche-noah.at*

Note

[1] There has been no formal decision at the time when this article went to press

ARCHE NOAH

Croatia – Biovrt - u skladu s prirodom

The main goal of Biovrt -u skladu s prirodom (Bio-garden - in harmony with nature, NGO)- is to work on education and promotion of life in harmony with nature by raising awareness on sustainable development.
We promote biodiversity conservation, ecological and organic food production and knowledge of all plants in general.

Activities:

Conservation of biodiversity

In the last 9 years we have been planting a lot of old and rare varieties, constantly exchanging seeds with people from Croatia and beyond.
Through writings, columns and lectures we are constantly encouraging people to find the old types of seeds in their environment and to maintain them. Our President, Silvija Kolar-Fodor is the author of most of the content published on our website, but she also writes columns about organic gardening, life in harmony with nature and seed saving for popular newspapers and blogs («24 hours» - "Garden and home"/'Naturala.hr', 'Ve ernji list'), where she often mentions the necessity of preserving the old varieties, especially of forgotten fruits and vegetables.

We held many lectures around the country, in cooperation with many associations and other organizations. Topics:

- How and why to have an organic gardenSeeding techniques
- Seeding techniques
- The importance of preserving old varieties of seeds
- Organic gardening as a source of health, independence and inspiration
- Growing, collecting and storing of domestic seeds

"School of gardening"

A program of workshops in organic gardening, conducted for the third year in Silvija Kolar-Fodor's garden(s). Participants are coming from across the state.

Workshops for other organizations

(Gredica Vara din, GSR Rijeka..) - about organic gardening and seed saving.

Seed exchanges

In collaboration with other organizations, we organize and participate in many seed exchanges, often after lectures. Since 2012, NGO Biogarden has conducted 22 lectures and participated in 22 seed-exchanges.

Open door day

Every year in our gardens since 2012: lectures and garden tour for the public.

Links:

Website: *www.biovrt.com*

Naturala.hr Blog:
http://www.naturala.hr/naturala-kolumne-o-autoru/autor-silvijakolarfodor-159.html

Vecernji list Blog:
http://blog.vecernji.hr/silvija-kolar-fodor

Lectures:
http://www.youtube.com/user/xeenaa13

School of gardening:
http://www.biovrt.com/article-category/Skola-vrtlarenja.html

Seed Saving Workshop

Workshops for other organizations:
http://www.biovrt.com/article/Odrzana-radionica-Skupljanja-sjemenja-u-Cudesnim-v.html

Activities 2014
http://www.biovrt.com/article/Biovrt-pregled-aktivnosti-2014.html

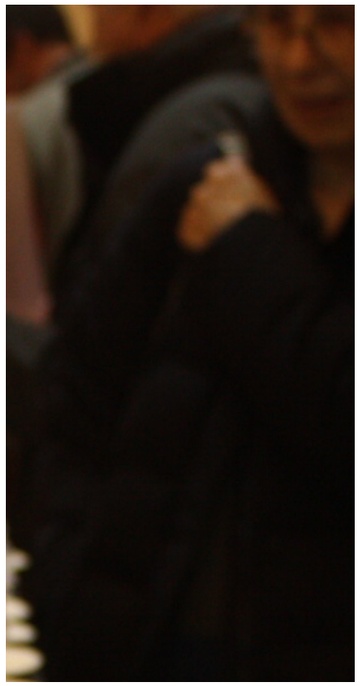
Activities 2013
http://www.biovrt.com/article/Biovrt-pregled-aktivnosti-2013.html

Activities 2012
http://www.biovrt.com/article/Biovrt-u-skladu-s-prirodom-pregled-aktivnosti-2012.html

Facebook group Biovrt. With more than 11 800 members, beginners and experience gardeners exchange advices, knowledge and seeds:
https://www.facebook.com/groups/330625128170/

School of Gardening »

Open Door Day »



Apple varieties at the Seed Festival

Germany – Open house e.V.

Our activities in the past years where mainly focused on the annual seed festival in February. The idea is to convert our region from a center of GMOs to a center of diversity.

This aim we try to achieve via information about heirloom seeds and diversity. During the festival we offer lectures about these issues. We also show exhibitions of heirloom varieties like apples, corn, wheat, beans and others. For this event we invite seed savers from all over Germany. Also other people connected with heirloom seeds join the festival.

By the time the seed festival became very popular not only in our region, it became the biggest in Germany. Some other groups like permaculture groups and friends of the earth are inspired of the event and start more and more small seed festivals all around in the south of Germany.
We have the impression that many free time gardeners love to buy seeds and grow heirloom vegetables in their garden. Our concept to invite for a whole day of diversity makes the people to stay, listen to the lectures, view the exhibitions enjoy the atmosphere. They are really interested not only in the seeds but also in the information about political aspects, like seed laws, land grabbing and so on.
Last year Vandana Shiva visited the festival and the hall was overflowing. Up till now we invited always in the same place, because we think by repeating the concept year after year we reach more people. But after Vandana Shivas visit we had to find a bigger hall to have enough space for all the visitors.

We cooperate with a urban gardening group “stadtgärtner” from Nurnberg, with whom we invite now common activities and seed swap become even more important issues during the festival.
We are very happy that this February Peliti the seed saver organization from Greece is enriching the seed festival not only with their seeds but also with their music.

Seed Festival »

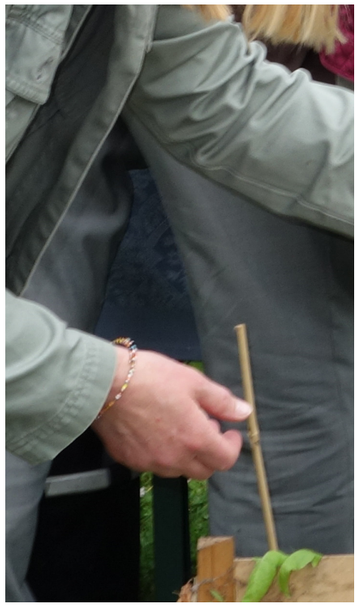
Potato Exhibiton at the Seed Festival »

Heirloom varieties of
our region

We also collect local heirloom varieties and grow and propagate them in our garden to keep them alive and to give them to gardeners who are interested. To spread the word we give lectures about heirloom varieties, the work of women against GMOs and for diversity and workshops about how to get your own vegetable seeds.

Very important for us is the work of our seed ark. It is a group of people who meet regularly to exchange their seeds and experiences concerning seed harvesting, cleaning and growing heirloom varieties. In winter we usually meet indoors but in summer we visit each other in our gardens and we also visit interesting nurseries. In this way we learn more about seed keeping and propagating the diversity in our gardens. The seed ark is growing from year to year.

Seedark members
swapping plants



Greece – Peliti

Photo by Aris Pavlos

Brief Summary of Activities

PELITI (*www.peliti.gr*) is a Greek Non Governmental Organization for the protection and dissemination of Traditional Seeds, otherwise known as Farmers' Seeds. These are freely reproducible Common Goods belonging to the Public Domain.
All seeds are distributed for free. The work is offered on a volunteer basis. The publications are sold and this income, along with the donations, supports the basic expenses. Until recently Peliti had a staff of 4 part time employees. Due to the economic crisis in Greece, since June 2013 everybody has become a volunteer, with PELITI's work continuing as before.
Peliti's main actions include seed collection and distribution, a seed bank with 2000 accessions, annual seed festivals – local, national and international - publishing of relevant books and guides, providing environmental education for school children and for communities, action for a just legal framework on seed marketing through co-operation with other European organizations.

The Challenge

Farmers were the first breeders. During the 10.000 years since agriculture begun, they domesticated wild plants to make available to us their conveniently harvested edible relatives. Traditional farmer seeds are saved by farmers on their farms (in situ) and replanted the following year. Traditional seeds are COMMON GOODS, as they are not covered by intellectual property rights or patents. On a legal and on a practical basis anybody can save seeds from the ripe plant and replant them and their ownership is collective and decentralized. Farmer varieties disappear if they are not cultivated because they return to their old wild status.
If we lose them we have to repeat the work performed over the last 10,000 years of agriculture. FAO has estimated that 75% of traditional varieties have been lost.

Today, another kind of seeds-Industry seeds are prevailing in many countries, while traditional seeds and seed saving knowledge by farmers is being lost. These prevailing Industry seeds cannot be 118 saved by the farmer either for technical and/or legal reasons as they are covered by intellectual property rights, or patents. Ownership is private and centralized as 10 companies cover more than 70% of the sales of the global seed industry market.

This global loss of traditional seeds applies also to Greece. For example, only 1% of wheat varieties and 2-3% of vegetable varieties cultivated 50 years ago is still in cultivation according to N. Stavropoulos the first director of the Greek National Seed Bank created in 1981. Greece being part of the EU has to follow European legislation. Existing legislation supports the commercialization of industry seeds through registration to a catalogue and puts restrictions to the circulation of farmer seeds .
A farmer cannot sell seeds unless registered, but registration criteria are suitable ONLY for Industry seeds. There is a separate catalogue for traditional seeds which includes strict geographical and quantitative restrictions. Actually European legislation treats traditional seed as an exception and kicks farmer's seeds out of the market stopping their evolutionary journey. European agricultural subsidies also discriminate in favor of Industry seeds. A farmer cannot obtain a subsidy or a reimbursement for crop loss, unless his/her seed is registered.

The outcome of legislation and policies is a heavy concentration of the seed supply creating an oligopoly which gradually increases prices and puts the small scale farmer into debt. The seed market in Greece, shares the characteristics of the European one where 95% of the vegetable seed market is covered by 5 companies and 74% of the corn seed market is covered by 5 companies. In Europe, from 2000 up to 2009 the seed prices increased by 30% on the average.

Greece is a cradle of biodiversity with a very high number of species and a large number of endemic ones. For this reason in 1981, FAO subsidized the creation of a seed bank in the city of Thessaloniki which now-due to the economic crisis is underfunded and does not work properly.
The goal of modern seed guardians towards decentralized "ownership" of seeds as Common goods to find the seeds before they get lost and to find the people with the relevant knowledge in order to pass both the seeds and the knowledge to a wider number of cultivators and to the younger generations.

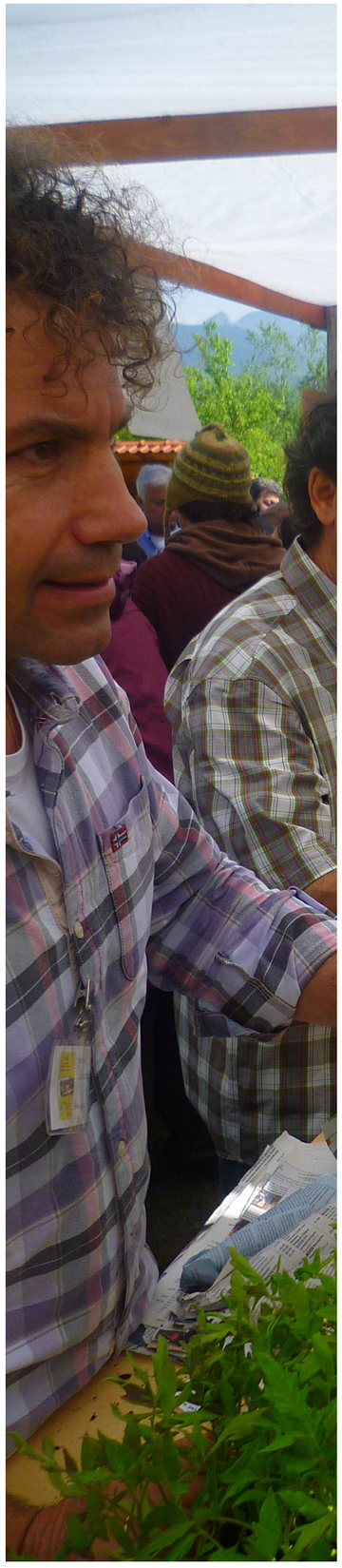
Annual Peliti Festivals

Peliti Activities

- A Greek seed-guardian association based on volunteer work, which was started by Panagiotis Sainatoudis in 1995, 20 years ago.
- In the year 2000 a network of cultivators from all over Greece was created. These seed guardians save traditional seeds and preserve the purity of a variety, replant them and are willing to distribute seeds FOR FREE to anybody who is interested to acquire the lost knowledge and use it. Every year Peliti publishes a book (in greek) which includes an extensive list of the varieties offered for free by each cultivator in each geographical area of the country. It also includes names of people who preserve rare animal breeds. Contact details of each cultivator-seed guardian- are given so that any interested person can contact them and ask for seeds and for the relevant knowledge for their planting and/or preservation. The book also includes various articles related to biodiversity.
- In the year 2006 Peliti started a network of local Peliti groups in different geographical areas of Greece. Lately these local groups have reached the number of 16. Each one of them consists of 15-20 people. All these people are volunteers who share the Peliti vision. They save and distribute seeds, organize public events about seeds, they visit schools to give speeches and plant seeds with the children and create school gardens. In schools cultural tools such as short theatrical representations are also being used. Many school teachers now in Greece cooperate with Peliti and continue the seed education on their own. Seeds are planted and then the seedlings are offered to the community during a public event.
- Peliti published the book "The Traditional Vegetable Cultivation and its Secrets". It is about an organic cultivation method that has been developed by a farmer of Peliti's network (no fertilizers, no pesticides, no manure – control by irrigation). It is what we can call "indigenous knowledge". The book will be translated in English soon.
- Since 2002, April 7 has been defined as the "Day dedicated to Seeds". During that day Peliti's local teams organize events (seed distributions and exchanges, speeches about the importance of local varieties..) all over Greece.
- For the period between October and February of each year Peliti replies to thousands of letters from people who are asking for seeds of traditional varieties.
- Peliti has already established a Seed Bank. There are already 2000 samples of traditional seeds gathered from all over Greece. At this stage the seeds in the bank are being evaluated with the help of the Peliti seedguardian network. It should be noted that Peliti considers that seed banks are indeed a precious treasury. This ex-situ type of preservation is considered complementary to Peliti's other priority which is actually the on farm preservation of agricultural biodiversity by decentralized networks of local farmers (in situ preservation) who continue spreading this indigenous knowledge to the current and to the next generations. As plants are living organisms who coevolve with humans and environmental conditions, as traditional varieties have the possibility to adapt to changing climatic conditions due to their wide genetic base, Peliti insists in creating renewable networks of cultivators who are interested in propagating agricultural diversity, climate change adaptation and environmentally friendly agriculture.

Annual Peliti Festivals

- Traditional varieties and seed saving in Greece are now propagated in many areas thus promoting both agro-biodiversity and a non intensive type of agriculture more environmentally friendly than intensive chemical agriculture which is imposed by the use of Industry seeds.
- Several other seed saving NGO's have emerged in Greece and are now promoting the same vision. For example two Peliti volunteers started in 2012 a youth seed saving effort in Athens (Dryades)for keeping the purity of the varieties. They have already created a network of 400 young people who are interested in learning how to keep and how to propagate a variety, most of them on their city balconies.
- The annual Peliti festivals which started in 1999, blend culture with increasing awareness about agricultural biodiversity. These festivals have been particularly successful during the last few years after they were transferred to the village of the Peliti headquarters in the so called Peliti land (6000 square meters of land offered by the municipality where seminars and festivals take place). Especially during the day of the festival, each spring, 3.000- 7.000 persons visit the village where the land of Peliti is located in order to participate in the seed distribution, the music and the dances. As Peliti strongly believes that the seed as a natural resource is both natural and cultural, culture and spirituality is always included in the events.



Annual Peliti Festivals

- The festival is an opportunity for the farmers that support the Peliti's network to meet and exchange information, seeds and knowledge. It has been confirmed that this meeting strengthens the relationship between these farmers. It is also an opportunity for other farmers and visitors, to get familiar with the network and the qualities of local varieties, having the possibility to get information and knowledge directly from farmers that already cultivate local varieties. They can also take local variety seeds for free Entrance to the festival is open to all visitors and it is for free.
- In 2012 and 2013 the annual seed festival was followed by an international conference on seed saving-promotion of traditional varieties, seed legislation. The premises of Peliti in the village of Mesohori, Paranesti area, were visited by seed guardians from many countries: Bulgaria, Turkey, France, Belgium, Italy, Switzerland, Germany, Portugal, Austria, Romania, Tunisia, Morocco, Holland, Slovakia, Spain, Tunisia, Morocco, Venezouela, Australia and India. The festival in April 2015 will also be international.
- Peliti participates in international networks that share similar goals. In 2014 we participated in a series of events in Greece and in Europe on the efforts to change the European legislation related to the marketing of plant reproductive material: We participated in the seed exchange outside of the European Parliament at the invitation of

Via Campesina at the legislation seminars in Vienna at the invitation of Arche Noah and at a Conference in Brussels organized by DEMETER INTERNATIONAL, entitled "WHO WILL BE THE OWNER OF SEEDS". Legislation was our major topic throughout the first half of 201. Our actions included informing European commissioners, Greek MEPs, Greek MPs and citizens with letters, personal contacts, films, booklets and public events.With our active participation in a pan-european network of seedkeepers coordinated by the Austrian organization Arche Noah, we played a decisive role in the positive outcome of the European Parliament's decision (who rejected the proposed bill for the Plant Reproductive Material – March 2014).

- In April 26, we held Peliti's main annual event in the land of Peliti in Messochori Paranestiou, with more than 4.000 visitors attending from various places around the country and abroad. This event was the starting point of the 1st International Solidarity Caravan for Seeds that left from the land of Peliti on 18th April 2014, travelled through Greece, Italy and arrived in south France, Kokopelli's base, expressing solidarity for Kokopelli and all farmers who keep their own seed. The Caravan was co-organized by Seedfreedom, Navdanya International and Kokopelli. Accompanied with music, events, speeches, seed offerings etc the Caravan sowed happiness and optimism.
- In October 2014 we re-started the construction of a building that started in 2010. We named the building "Peliti's seed house" and it's purpose is to host part of Peliti's seed collection, as well as host exhibitions for students and others and also workshops on traditional varieties. The building will be inaugurated in April 18th 2015 by Dr Vandana Shiva during the 2015 Peliti festival celebrating the 20th birthday of Peliti. The construction will be financed by national and international crowdfunding.

Our Vision

We at PELITI take the view that we must assume responsibility for what is happening at the personal and global levels. It is a vital imperative that our vision of the world shape developments. Accordingly, each one of us must contribute to the solution in whatever way we can. It is our responsibility to focus on positive action. When we do this, everything improves: it is like magic. During the numerous environmental education events we explain that everybody has the capacity to use their knives and forks as levers for the achievement of a better model of agriculture and an improved state of the planet . This positive philosophy impregnates the Peliti Association, the motto on the website being (in Greek) "Do not lament the darkness, turn on a light". Peliti works for positive action promoting the personal responsibility of each one of us for implementing our vision for a better world based on low input agriculture and on democratic sharing of the earth's gifts by keeping seeds in the COMMONS.

Navdanya international

Italy – Navdanya International

SEED SOVEREIGNTY in ITALY
Maria Grazia Mammuccini*
Navdanya International

In recent decades, and in the Italian context also, the advent of a model of "industrial" agriculture characterized by hyper-productivity has resulted in the loss of biodiversity and native seeds: the increasingly mass-use of "commercial" seed varieties quickly supplanted the "old" local varieties and, in the early '900, Italy as well as Europe, has lost 75 percent of the genetic diversity of agricultural products.
The seed legislation has greatly facilitated this process. In Italy and in the EU's context, seeds are in fact subject to a special system which in Italy is dictated by the so-called "seed law" (L. 25 November 1971, n.1096 and subsequent amendments). The Act establishes, among other things, the National Register of Varieties which, at the Community level, flows into the Community Catalogue of Vegetable Varieties. The basic mechanism for seed activity of the European Community is homogeneous in all member countries, that is to say that the seed of a variety may not be commercialized if the same variety has not been registered in the National Register or in the Community Catalogue of Vegetable Varieties.

The varieties for which registration is sought must have some very specific characteristics: they must be distinct, stable, sufficiently homogeneous and must have a satisfactory agronomic value or use. The local varieties cannot have, by their nature, all these characteristics simultaneously. In fact, a definition of local varieties states that they have "... a large genetic basis, are difficult to improve, in terms of agronomic value, in the respective zones of adaptation, as they are the result of a sort of recurrent simple selection, implemented by the farmers for a long period of time". Thus it is mainly because of the regulations in force that the local varieties are likely to disappear and be completely supplanted by other commercial varieties.

With this regulatory framework small seed companies as well as whole national seed collections and institutions of the sector have been purchased at comparatively modest prices by large agrochemical corporations. For these corporations the seeds are just one of the items of their sales package of materials for agriculture and chemistry, and is another strategy of vertical integration of the global market for agricultural goods of mass consumption for food or other uses.

Public funding for development and conservation of seeds has steadily declined and has now reached levels so low that even the largest collections of seeds are in danger and are increasingly dependent on the so-called public-private partnerships. These partnerships allow private companies that sell seeds to further expand their control of world stocks of seeds on the base of their patents. While public seed collecting institutions are compelled to put their seeds for disposal for free, private companies are free to choose not to participate in this free trade system and abuse it for their own interests. In addition, each new step taken towards the concentration of seed stocks in the hands of private firms leads to a reduction of seed varieties and to a reduction in the number of breeders and scientists who maintain these stocks.

As this strategy on seeds to support a model of industrial agriculture was gaining momentum also in Italy, strong counter tendencies have simultaneously developed in the agricultural and food sector.
In fact, the characteristics of the Italian territory, which are mainly hilly and mountainous, 194 and especially the choice of enhancing local agro alimentary products and their bond with the territory, have favored, since the late 90's, the development of diverse farming models at the regional level, based on the protection of biodiversity where local varieties and seeds are not only a collective heritage, but also a real point of reference for cultural, social and agricultural identity of the country, and have an economic value and are fundamental for safe and healthy food.

For this reason Italy led the way in establishing regulations based on the Convention on Biodiversity after it was ratified in 1992 and the International Treaty on Plant Genetic Resources for Food and Agriculture (2001). Tuscany was the first region to legislate in this area, in 1997, enacting a law to protect indigenous genetic resources (LR n. 50/97), and was also the first region in Italy that, based on the precautionary principle, legislated in 2000 to ban the cultivation of GM crops in its territory contributing substantially to the foundation of the European Network of GMO-free Regions.

In 2003, in line with its commitment on sustainable food and agriculture issues, the Region of Tuscany, at the initiative of Governor Claudio Martini, hosted in Florence the constitutive meeting of the "International Commission on food and agriculture" chaired by Vandana Shiva and composed of some of the leading experts in the world of alternative food systems.
The Commission, with support from the Region of Tuscany, elaborated and disseminated proposals for an alternative to the current food system based on diversity, locality and sustainability which first resulted in the "Florence Declaration" and subsequently was the basis of the Commission's first "Manifesto on the Future of Food" , followed by the "Manifesto on the Future of Seeds."

The Region of Tuscany committed to fulfilling the principles contained in these two documents, and among the first initiatives approved a regional law LR No. 64/2004, which allows the circulation of seeds at the local level and identifies even more effective tools for the conservation and enhancement of local varieties. This law has a symbolic economic value well beyond the regional level. Indeed, it may be the first brick of a system of rules that, while accepting the principle of the European single market and free trade, introduces mechanisms to protect rural communities and their intellectual property against the aggression of large companies, today widely favored by the mechanisms of standardization at the national and supranational level and by the current regimes of intellectual property protection.

Based on its experience of the previous regional law (1977) and on principles contained in the most important international documents, the Regional Law L.R.n. 64/2004 has as its main objectives:

- The protection of its heritage of landraces and local varieties not only from an economic and scientific perspective but also a cultural one. The extinction of a part of indigenous genetic resources would be a loss not only of a unique and unrepeatable heritage, but it would undoubtedly affect the culture and traditions of a population, linked also to its rural and agricultural traditions. In addition, the conservation of biodiversity in the agricultural and the zootechnical fields is strictly linked to policies to enhance quality and typicality of the agrofood productions.

- The landraces and local varieties belong to the natural heritage of farming zootechnical and forestry interest of Tuscany, being part of the natural elements that characterize its territory and certainly constitute certainly an asset. The landraces and local varieties are therefore a natural heritage of Tuscany and as such the region guarantees the collective use through the tools provided. Thus this system has basically a two-pronged approach, one of which addresses the protection and the other the enhancement of the local genetic heritage.

This same regional law contains other closely linked tools for the protection and defense of landraces and local varieties. These are:

- The Regional Directories (Repertori Regionali). These consist of a database of local Tuscan varieties and landraces. The local varieties and landraces listed and described in the repertories have been entered by universities, research institutes, farmers associations, individual citizens (currently the local varieties registered are about 750, of which over 600 are at risk of extinction). The inclusion of a local variety or landrace in the Directory is subordinate to the presence of the characterization of the same, both from a morphological point of view (sometimes genetic), and from the point of view of the link with the rural culture and with the agricultural and zootechnical local tradition.
- The Regional Germplasm Bank for the ex situ conservation of local varieties at risk of extinction of the regional repertory.
- The Farmer's Custodians, farmers implementing in situ conservation in the areas of origin of the varieties listed in the repertories.
- The conservation and security network, created to include in the network the Regional Germplasm Bank , the Farmers Custodians and other entities who may be interested for various reasons in the conservation of a particular local variety threatened with extinction. The other entities in the network can have motives other than purely scientific ones, such as cultural, gastronomic or linked to the boosting of tourism for the development of a depressed area.

The network is, above all, a place where one can try to implement all the actions aimed at ensuring "sustainable use" of agricultural, zootechnical and forestry resources. The participants in the network - Farmer Custodians, Sections of the Bank and others – undertake activities of conservation, both in situ and ex situ, of local endangered varieties and put them back in circulation within the network itself. The importance of circulation and exchangeof seeds among farmers is essential for the conservation of biodiversity and the preservation of local varieties from extinction. In this regard, in accordance with the law on seeds, non-profit circulation and exchange of seeds are allowed inside the network, in "small amounts", and in well-defined geographic areas in order to maintain and reproduce.

The tag which stipulates "Made from local variety / landrace - Tuscan Regional Law 64/2004 and that can be affixed to the label of a product as is or transformed, actually obtained from local varieties or landraces at risk of extinction.

Its purpose is the protection of the right to information and consumer choice whereby the consumer knows that purchasing the product contributes to the protection of biodiversity values.

This is how Tuscany has protected local varieties from patents of multinational corporations and has sanctioned, for the first time on a legal level, collective ownership of local varieties and in fact also the principle of seeds as a common good. This major work of recovery of varieties and local seeds has also provided an innovative path for scientific research methods through a participatory approach to open collaboration among farmers, local communities and researchers and is fertile ground for practicing a new system of knowledge for addressing the ongoing environmental and climate crisis, based on integration between scientific and traditional knowledge and investment of public resources to support a new research system capable of producing innovation for the common good.

The conservation of local varieties has also offered a real opportunity for small farmers to boost local circuits of production and consumption through direct sales, even with innovative organizational forms of short chain, such as markets, shops and purchasing groups in solidarity, supported at Regional level and by local institutions. These initiatives provide both sources of income for small farmers and opportunities for citizen-consumers to rediscover the traditions and local knowledge. But above all this innovative ruling, has reaffirmed mass selection conducted over the centuries by farmers and the value of the work of those (old and new farmers) that have not surrendered to industrial agriculture and, with their passion and dedication, have maintained, especially in mountainous and disadvantaged areas where intensive agriculture was almost impossible to set, a reservoir of biodiversity that is now a heritage of the whole community.

Other Italian regions have taken up the example of Tuscany's experience with the L.R 64/04, pending national legislation that would give full effect to the principles of the FAO's Convention on Biodiversity and International Treaty on Plant Genetic Resources for Food and Agriculture.
Six other regions besides Tuscany have legislated on agro-biodiversity: Lazio in 2000, Umbria in 2001, Friuli Venezia Giulia in 2002, Marche in 2003, Emilia Romagna and Basilicata in 2008. Many regions that had not yet passed laws, however, work with specific programs and projects on agro-biodiversity. Almost all regional laws provide tools such as: directories / regional registers of local landraces and varieties; regional banks of germplasm; growers / farmer custodians; the storage and security network (bank of germplasm- Farmers Custodians), the enhancement of local landraces and varieties (seeds, products.....)

There are many bodies, including research Institutions working on agro-biodiversity and preserving a priceless heritage of varieties and local seeds.
In particular: the Network of Research Facilities of the Council for Agricultural Research (CRA) under the Ministry of Agriculture (from the data presented to the National Conference on Biodiversity in Florence in 2010, there are numerous accessions: 8,380 varieties of fruit, 5,202 of vineyards, 15,970 forest species, 16,410 of cereals, 110 of vegetables, etc..), the network of facilities of the National Research Council (Consiglio Nazionale della Ricerca - CNR) headed by the Ministry of University and Scientific Research (data indicates 80,000 varieties in the seed bank, 1,860 variety of fruit, 2,500 olive trees, etc..); finally, many universities and other research institutions, at the national and local level, work on varieties and local seed in relation with the regions and local authorities.

Unfortunately most of these research institutions suffer from a chronic lack of public funding that is seriously putting at risk a priceless heritage of local seed varieties and the work of many researchers over the years have ensured the recovery and maintenance of such assets.
In the wake of the legislation of the regions that in recent years have worked on varieties and local seeds, there have been novel changes at both national and community level regarding the marketing of seeds of conservation varieties. In 2007 the Italian seed law was modified with the introduction of innovative concepts and tools to enable the marketing of conservation varieties in Italy, in the absence of clearer rules at the community level.

Source: navdanyainternational.it

Subsequently the European Commission, after years of intense debate, finally pronounced on the marketing of the seeds of conservation varieties of agricultural species (or open field) and of the tuber potato seed (blocked since 1995) and further regulatory changes are under consideration.
It is clear that the regulation of conservation varieties puts into question the entire regulation of the production and distribution of seeds, with the aim of strengthening the rights of farmers, preventing the formation of monopolies and strengthening the capacity of local communities to conserve and enhance biodiversity through social interaction.

Of recent note at the national level, at the initiative of Hon. Susanna Cenni, is the bill for the protection and enhancement of agricultural and natural biodiversity, presented to the House of Representatives some two years ago and which brings to the national level the labor and the tools implemented by the regions in recent years. It provides, among other things, for the protection of intellectual property of local varieties and the possibility of movement and exchange of seeds. The law has now been approved unanimously by the House's Agriculture Committee in May 2012 and is currently waiting to conclude the parliamentary process.

But one of the most valuable results, partly as a consequence of these innovative regulatory instruments is that, beginning with Tuscany, the experiences of farmer guardians spread like wildfire; the "Fierucola" of the seeds and the Association of Farmers Custodians (Associazione Agricoltori Custodi) were the first networks of local seeds and custodian farmers and today they are flourishing, even at a national level, with important experiences in this direction such as, among others, the Network of Rural Seeds (Rete dei Semi Rurali) and the Association of the "Women in the Field" (Donne in Campo).

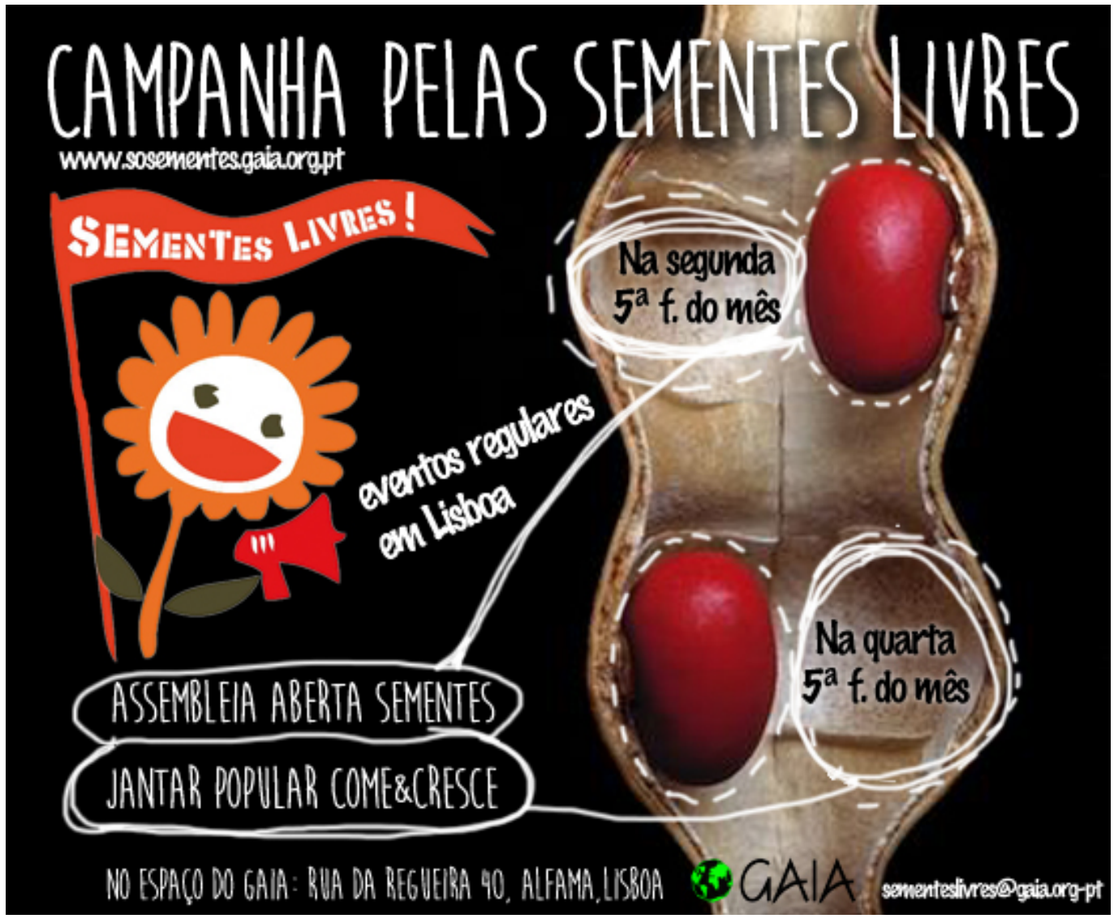
In all these years an enormous heritage of varieties and local seeds has thus been accumulated in our country, thanks, firstly, to the commitment of the farmers guardians that, together with researchers, technicians and local communities, who found in Local Authorities and Regions in particular the basic support to implement activities and tools that can now be available to all farmers and to the society as a whole.

This heritage is now a fundamental value for the future of agriculture and food. The current crisis is making unequivocally clear the failure of the industrial model of agriculture pursued in all these years by the multinational agribusiness. Indeed, today the companies most affected by the crisis are the monocultural industrial companies, while those more resilient are the diversified and multifunctional organic farms based on biodiversity and local markets and for which varieties and local seeds are the fundamental basis for their work and to produce safe and healthy food for all. It is therefore necessary that all those who have worked in recent years to preserve and maintain the local seeds are able to form an alliance to integrate their work, making it known to all citizens and to find innovative and creative solutions to make local seeds available for everybody. For all the farmers who want to plant them, for the many urban and peri-urban gardens that are spreading in many cities, for school gardens, for family gardens and for all the people who, even simply with a jar, want to contribute to help save native seeds.

This is why the Alliance to promote the global campaign "Save our seeds" and to declare seeds as common goods, promoted by Vandana Shiva, can be an extraordinary opportunity to give strength to the work that we have conducted together in these years and to create a more extensive solidarity network to save, preserve and disseminate varieties and local seeds also in our country.

*Maria Grazia Mammuccini, former director of ARSIA, Tuscany's Regional Agency for Development and innovation in farming and forestry from1995 to 2010.
She is coordinator of the Scientific Committee of the Italian Foundation for Research in organic and biodynamic agriculture (FIRAB) and Vice-president of Navdanya International in Florence.
www.navdanyainternational.it

Firenze - Piazza SS. Annunziata



Portuguese Seed Sovereignty Campaign – "Campanha pelas Sementes Livres" Founded January 2011

Inspired and powered by GAIA – Portuguese environmental action group Partnered by the environmental organisations Campo Aberto, MPI and Quercus, and by the Portuguese Stop GMO Platform Supported by close to 100 associations, collectives, cooperatives, farms and community gardens in Portugal.

Image of the Campaign

Report by Lanka Horstink – Campaign Coordinator
March 1, 2015

Acting for Seeds in Portugal

The idea for a Portuguese Seed Sovereignty Campaign was born at the October 2010 European GMO-free Regions Conference, where members from German advocacy organisations warned against the imminent threat to seed freedom posed by the upcoming unified European Seed Law.
A few months later a network of national campaigns was formed under the umbrella name "European Seed Sovereignty Campaign" and in April 2011 the first international action was undertaken. At that time the Campaign's main objective was to halt the upcoming European Seed Law, but whenever possible we also worked towards additional objectives such as the promotion of ecological farming, food sovereignty and an end to patents on seeds and to the use of GMO's in food and farming.

In Portugal we strove from the beginning to create a network of organisations, groups, collectives and individuals that share the mission of keeping seeds free. The idea was that the Campaign would act as a self-organised movement, but with an organisational core guaranteeing a basic operational structure, such as a website, mailing-lists and campaign materials. Very soon we had five organisational partners and close to one hundred collective subscribers, besides thousands of individual supporters. With this momentum we managed to create enough noise to put seed freedom issues on the Portuguese public agenda, where it remains today.

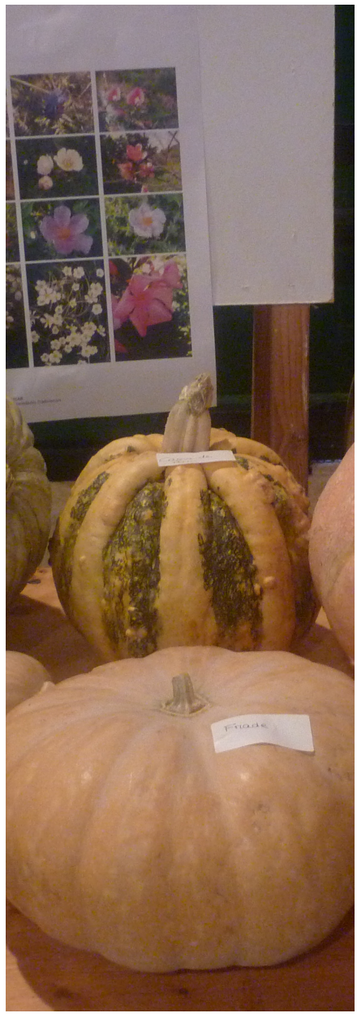
Portuguese context

Portugal presents a very different picture from the North of Europe, sharing some characteristics with the Global North and others with the Global South. It is undoubtedly a developed country, with all the facilities that most Westerners are used to, and with some very innovative products developed in-house. But not all the sectors have caught up, nor all of the regions and their populations. Agriculture in Portugal is an example of this paradox. Farming activities still occupy half of Portugal's territory, but contribute little to the country's income (< 3%).

Possibly partly due to the rugged terrain in the Centre and North, and the difficult access, agriculture here is still largely small-scale: 75% of farms are family farms under 5 hectares. However, half of these farmers are over 65 years old and the business farms, that only represent 2% of all farms, are buying up the arable land (especially in the Alentejo and Algarve, the Southern regions, where the land is flatter and monoculture becomes an option) and are currently managing around 25% of the farmed land. In Portugal there is a real threat of drastically losing food sovereignty, already quite precarious considering that Portugal currently has to import 20% of its food necessities, a number which is growing especially for cereals and oil seeds, partly due to the EU quota system.

Agriculture is also not sustainable economically: almost none of the small farmers are able to live exclusively from their production. And if the older farmers are not replaced, the 2 million hectares of arable land that have already been abandoned could expand even further with the risk of the countryside becoming entirely deserted. There is also a tendency to abandon vegetable cultivation for meat production, especially bovine and swine, which does not favour biodiversity nor food sovereignty. Although Portugal presents ideal soil and climate conditions for organic agriculture, so far this constitutes only 3% of all farming activities.

2012 Fortnight of Action: "seed freedom mural"



Like other countries from the European Union, Portugal's agro-biodiversity has suffered significantly with the promotion of intensive, specialised and large-scale farming methods that were the EU trademark in the '80s.

Although Portugal's older and less schooled farming population coupled with the rugged terrain in much of the territory and recent environmental legislation has slowed down the industrialisation process, the assault of fast-food and supermarket chains on rural areas have facilitated the abandonment of traditional plant species and animal breeds. Many farmers only produce a small fraction of their food needs and for many vegetables prefer to buy commercial seeds and breeds. Most of them have little knowledge of the negative effects of pesticides and herbicides and the only reason they are not more used is economic.

Still, Portugal has an enviable agro-biodiversity compared to the Northern European countries.

All over the country there are farmers who do endeavour to save their traditional seeds, sometimes for generations. And for over 10 years, the main Portuguese seed savers association, Colher para Semear, has worked hard to catalogue and reproduce the Portuguese seed treasure trove.

They are currently preserving over 2.000 traditional edible plant varieties. Unfortunately, the rate of disappearance of traditional varieties surpasses that at which the still very small number of seed savers can preserve them. The older farmers very often take both varieties and the knowledge associated with their cultivation and use, almost literally to the grave.

Old pumpkin varieties at the annual Seed Savers Meeting

PORTUGUESE SEED CAMPAIGN – Strategic approach

Demands

- The right to produce our seeds from our own harvests, to re-sow them and to give or sell them to others;
- The exemption of open pollinated varieties from registration, regulation or certification, to be freely exchanged and marketed;
- The promotion of regional crop varieties by supporting in situ conservation and the men and women who save and select natural varieties;
- The protection of local and traditional knowledge, culture and gastronomy associated with regional plant varieties;
- The banning of genetic technologies and patents on plants and plant genes in food and agriculture;
- Agricultural policies that promote low-impact, low-input agriculture instead of subsidising industrial crops with high energy and chemical inputs.

Objectives

- Contribute to building national and international resistance to unfair laws that restrict or eliminate the autonomy of peoples in determining their own food and agricultural policies and that remove common resources from the public domain.
- Support and promote the international appeal to end patents and intellectual property rights on life and to end genetic engineering in food and agriculture.
- Support, empower and promote a national network that preserves and defends traditional seeds, knowledge and gastronomies.

Strategy

- Inform and activate
- Empower and decentralise
- Put pressure on institutional decision-makers
- Grow the movement
- Keep the knowledge up to date and widely shared

Evolution of the Seed Campaign in Portugal

Our strategic approach has varied somewhat from year to year since 2011, since we were forced to follow the agenda set by Brussels, the threat of a European Seed Law being imminent.
Nevertheless, the two main pillars of our action strategy have always been to:

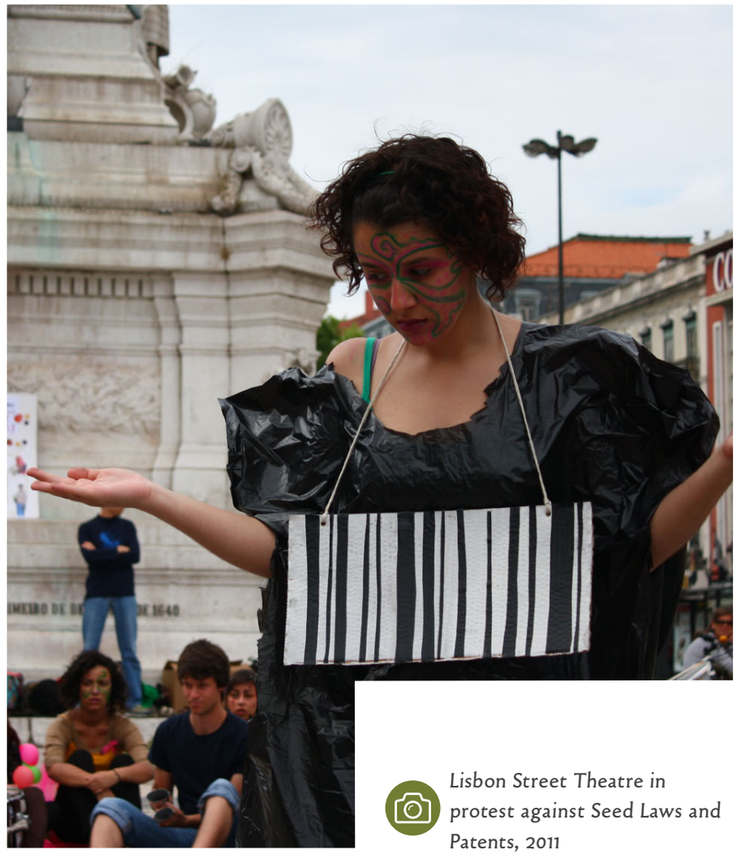
- Raise awareness and stimulate debate around seed sovereignty issues.
- Empower citizens, farmers and seed/food sovereignty defenders.

The empowerment is meant to be two-fold: spreading the knowledge and skills to actually save seeds, especially traditional varieties; and passing on information and techniques for awareness raising and political campaigning.
Until the political death of the European Seed Law, a significant part of our time was also dedicated to lobbying, petitioning and organising public protests. Besides that we needed to gain critical mass quickly to make our protests heard. Ever since European Parliament rejected the Seed law in 2014, we have changed our lobbying strategy to encompass a broader approach, warning about "bio-capitalism" and "Earth-grabbing" (i.e. privatising and trading nature) and explaining the bigger picture, such as how patents on seeds may undermine the right to food, how free trade agreements strangle local food and seed markets in the Global South. We have also turned to soft lobby approaches such as meeting with government representatives that work with seed preservation and control to "exchange" views.

We would have liked to have time to improve the scientific underpinnings of the campaign and to create more durable campaign materials, such as a "black book on seeds" and a handbook on seed saving networks, but when working with a small group of volunteers that keep the campaign running in all its invisible details, priorities have to be set and some of our ambition curbed!

Main Campaign activities 2011-2015

In 2011 we launched the Seed Sovereignty Campaign with an 11-page briefing for partners and supporters, a website to inform, share and activate people and a Europe-wide petition. April 17 (International Day of Peasant Struggle) and 18 marked the first International Action Days for Seed Sovereignty in Europe and in Portugal we participated with two big events in community gardens in the largest cities, Lisbon and Porto and a protest march where we handed a copy of the European petition (with 60.000 signatures) to representatives of the European Commission and finalised with a street theatre "dramatising" the effects of patents on life. In the same year we managed to gather enough donations in fundraisers and workshops to finance the trip of the Australian seed savers Michel and Jude Fanton to Europe. In Portugal, the couple went on a road trip with us for 10 days, offering seed saving workshops while we organised debates and screenings of their film "Our Seeds", subtitled by volunteers.



Lisbon Street Theatre in protest against Seed Laws and Patents, 2011

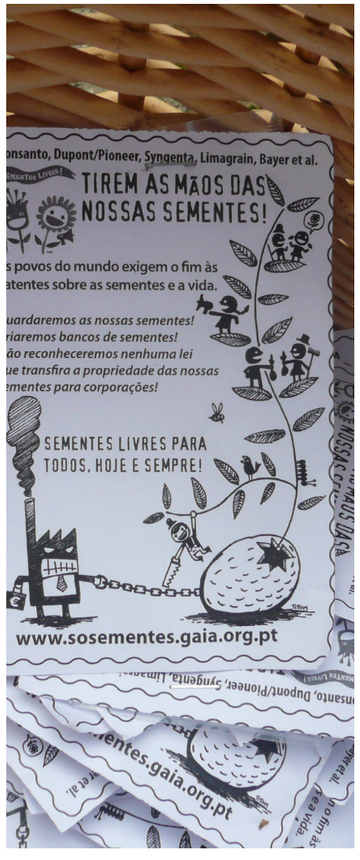
This Seed Savers Tour attracted hundreds of visitors to our events and resulted, among other press coverage, in a television report on seed freedom and the Seed Campaign.

In 2012, besides regular press releases, campaign presentations and other PR work, we managed to organise three larger events to mark the 17th of April, the RIO 2012 Summit and the first Fortnight of Action for Seed Freedom by the newly founded global Movement for seed freedom. For RIO 2012 we published a "secret file" in several parts, denouncing the fallacy of the Green Economy and the continued pillaging of our planet.
We celebrated the first Seed Freedom Fortnight with a women-inspired march through the centre of the capital, spreading free seeds from a farm cooperative and handing a big bag of rye seeds to a representative of the European Commission with the request to keep all seeds as free as those!

In May 2013 the European Commission finally released their proposal for a European Seed Law and we responded, in concert with our European partners, with new protests, petitions and open letters from civil society. For a whole year the main focus was on keeping the pressure as high as possible on institutional decision-makers. We went to the newspapers, TV programmes, spoke at events and festivals, met with our European colleagues to speak in one voice. The hard work paid off: we all achieved a major victory in March 2014 when European Parliament rejected the (several times amended) Seed Law proposal.

Michel and Jude Fanton at a Seed-inspired Permaculture workshop in Coimbra, 2011 »

"Keep your hands off Our Seeds!" Seeds with a message at the 2012 Seed Freedom March «



Spreading Free Seeds during the Seed Freedom March, October 2012) »

Start of the Seed Freedom March, October 2012 »

Materials of the 2011 Seed Savers Tour «

After the political death of the European Seed Law, we applied our energy to transforming the Seed Campaign into a movement, passing on our knowledge of campaigning and advocacy and stimulating the sharing of knowledge and skills that are fundamental for food and seed sovereignty. We also participated in the 2014 Free Pepper campaign, a European initiative to overturn patents on plants and seeds.
In 2015 we will organise our fourth Food and Seed Activist Meeting, which for the second time will take place at a farm, mixing theory and practice, working on strategies and working with the earth, debating and acting. We feel campaigning needs to imitate life: it should be diverse, it should evolve, it should be fertile, most importantly it should be free!

Website:
www.sosementes.gaia.org.pt
Email: *sementeslivres@gaia.org.pt*

Campaign presentation and some of the event reports in English:
http://gaia.org.pt/node/16228

Campaign press centre:
http://gaia.org.pt/node/15902

European Seed Sovereignty Campaign:
www.seed-sovereignty.org

A 2-minute video of one of our events in 2013:
https://vimeo.com/79926448

For a brief presentation of the Portuguese Seed Savers association, Colher para Semear, see *http://gaia.org.pt/node/417*

The more recent initiative Seed Circles (Círculos de Sementes) has also contributed to encouraging people in Portugal to save seeds: *http://circulosdesementes.blogspot.pt/p/o.html*

Marching with a Seed Freedom song through Alfama, Lisbon, October 2013 »

Preparing to sow, workshop at the 2014 Seed Activist Camp «

Portugal – Círculos de Sementes – Circles of Seeds

Some things about us:

- The coordination is made by 2 volunteers, Pepa Bernardes and Frederica Teixeira and all the activities are prepared and conducted voluntarily by the participants of all Circles of Seeds.
- We don´t have funding, everything we do is free, when we travel to give a workshop the circle of seeds that call us pays the costs of the travel.
- We are members of the Portuguese Seed Sovereignty Campaign and the Seed Freedom Movement since October 2012 to December 2014.

Source: circulosdesementes.blogspot.pt

The focus of our mission is...

- To create a network of Circles of Seeds throughout the country to rediscover, gather and share our national heritage of ancient and traditional seed varieties.
- To share information about Seed Saving and awareness lectures all over the country.

Our on-going Projects...

- The Circles of Seeds Seed Bank
- The Circles of Seeds Network
- National gathering every year, were we celebrate the Seeds, dance, share seeds, good organic food, free workshops, ...
- Awareness lectures on the importance of preserving local seed varieties
- Free Seed Saving Workshops all over the country
- Discovering the Seeds (workshops for primary schools)
- Preparing a seed saving book
- Bring Dr Vandana Shiva to Portugal

We held ...

- 27 Seed Saving Workshops all over the country, in schools, farms, events, festivals, fairs...
- Two National gatherings
- 4 Lectures on Food Sovereignty in schools
- 12 Awareness lectures on the importance of preserving local seed varieties
- Seed and plants sharing events
- Visits to small local farmers

We participate

- In Portuguese Seed Sovereignty Campaign meetings, events, workshops and visits.

We created and maintain

- The Circle of Seeds blog
- The Circle of Seeds Facebook page
- The Circles of Seeds Seed Bank

List with photos of all activities we have been doing:
http://circulosdesementes.blogspot.pt/p/calendario-de-actividades.html

Source: circulosdesementes.blogspot.pt

Our History

This project began on the 14th October 2012, following an international appeal by Dr. Vandana Shiva to join hands for Seed Freedom globally.
In response, we organized a seed workshop in Évora, Portugal.
We decided that we must act without delay.
We searched a little bit and...
To meet the urgent need to rescue our country's existing traditional seed, and share vital seeds knowledge, we put together the concept of Seed Circles, with the idea of a living seed bank.

And the result...
CIRCLES OF SEEDS

A Circle of Seeds is a simple idea:
It is to gather a group of friends or neighbours, each of whom commits to grow and save seeds from one or more crops. Each member selects a crop variety and takes on to sow, tend, harvest, clean, dry and store its seeds.
At the meetings everyone shares their seeds and the information they have on the variety chosen. Just imagine...
If the Circle has 12 people and each person chooses a variety, after one year, the Circle's seed bank will contain seeds from 12 varieties.
The following year, each person chooses another variety and now there are 24 varieties. After 5 years...

Source: circulosdesementes.blogspot.pt

What is needed to start a circle?

- A person to organize the Circle.
- People interested in seed saving. We suggest no more than 12 people to maintain support, focus and commitment.
- Availability to meet on a quarterly basis.
- Seed cleaning, stirring and storing items such as bottles and strainers.
- Seeds of good quality, if possible local and heirloom
- A vegetable garden.
- Field diary for plant species (provided by the Circles Network)

Source: circulosdesementes.blogspot.pt

Guidelines:

- People need some knowledge of seed harvesting, cleaning and storing of seed
- For groups without this knowledge, the Network offers free advice and workshops
- Priority should be given to traditional seeds but species from other regions can also be cultivated if considered important (eg Stevia).
- Transgenic and hybrid seeds or are not allowed.
- The seeds are grown for free exchange. No commercial transactions should be involved.
- Each person selects to take care of a plant of their choice; more can be selected if desired.
- As much information as possible should be recorded about each variety in the field diary provided by the Circles Network.
- Each member commits to share the seeds they have grown with other members of their Circle and with their Circle's seed bank. In addition, each Circle contributes seeds to the Network Seed Bank
- All Circles are self-organising.
- Circle meetings are recommended quarterly.
- There will be a national gathering of all Circles at each year.
- National Network Meetings are organised by Circles on a rotational basis.
- The Network offers free advice, support and onsite workshops. Circles are responsible for hosting workshop facilitators and covering their travel expenses.
- Each circle has a coordinator responsible for liaising with the Circles Network.

The Network Seed Bank

The Network Seed Bank will serve to:

- Preserve the diversity of seed
- Be a repository for all Circles
- Provide seeds for new Circles

How it works

- All circles have access to the list of existing Seeds in the seed bank
- Whenever the Circles need seeds, they request the varieties they want (provided they are available) and return the same variety and amount whenever they can (if possible at the end of the season)
- Postage costs are covered by the Seed Circles requesting seeds
- The Circles send their seeds to the Network Seed Bank along with their completed field diaries
- On arrival, each batch of seeds is recorded on a register with all available information
- All batches of seed sent to Circles are accompanied by a record
- People outside the Network may also request seeds in exchange for double the yield the following year

A little movie of our 2nd National Gathering in 2014
https://www.youtube.com/watch?v=rv6fVaBRf1c#t=40

To find out more and to register your Seed Circle with the National Network of Seed Circles, please contact:
Círculos de Sementes / Circles of Seeds - Organisation's name: Wakeseed - Country: Portugal
Contact: 962658017 - *circulosdesementes@gmail.com*

Source: circulosdesementes.blogspot.pt

United Kingdom - The Landworkers' Alliance and The South West Seed Savers' Cooperative

Farmers join to save the seeds that feed us
by Ashley Wheeler – The Ecologist, 6 January 2015

Source:
http://www.theecologist.org/campaigning/2702693/farmers_join_to_save_the_seeds_that_feed_us.html

Farmers and growers in south-west England have united to reclaim the lost skill of seed saving, writes Ashley Wheeler. They are determined to grow, develop, share and disseminate openpollinated seeds, and oppose EU laws granting commercial plant breeders a legal monopoly on the seeds that sustain our lives.

For thousands of years seed saving was common practice for farmers and growers. As fundamental as maintaining soil fertility and crop husbandry.

It was the norm for farmers to select the plants most suited to their land and collect the open pollinated seed from the best plants. This selected seed adapts to the climate and soil type of that land, known as a landrace.

This leads to a hugely diverse living bank of seeds that constantly adapts to changes and results in resilient plants that have an ability to tolerate stress caused by environmental pressures.

Unfortunately, since the uptake of modern F1 hybrid seed, whose offspring would not produce traits true to the parent, and could therefore not be saved to reproduce reliable crops, farmers' landraces have dwindled.

Hybridisation came about after agricultural fertiliser companies took Mendel's knowledge of plant genetics and started breeding varieties of F1 hybrid seeds that could not be farmerreproduced. The F1 seed produced uniform, vigorous and nutrient-demanding crops. But breeding from them led to offspring with lack of vigour and lower yields.

This commercial advantage was taken on board by the fertiliser companies who began breeding seeds and adding them to their catalogues – with a view to the profits to be made both from selling the seeds, and selling the fertiliser the F1 plants needed to perform.

Seeds as 'Intellectual property'

The first Plant Patent Act came about in 1930 in the US and led to large agricultural companies, who bred F1 hybrids (along with manufacturing chemical fertilisers and pesticides) being given some legal protection for 'their' seeds.

Seed varieties and plants eventually became 'intellectual property'. The result is that 67% of the world's propietary seed (seed with intellectual property rights) is owned by just ten companies.

These companies pushed the hybrid vigour of these seeds and farmers became reliant on them as they had the fertilisers and pesticides that these same companies were manufacturing. The Green Revolution saw farmers become dependent on this modern way of farming and lost the more traditional skills of rotation and seed saving.

The UN's Food and Agriculture Organisation estimates that since the 1900's around 75% of plant genetic diversity has been lost due to farmers relying so heavily on hybrid seed.

Current legislation

Seed legislation was introduced in the early 1900s to regulate the seed market and assure consumers that the seeds they were buying would be viable and come true to the description on the packet.

Currently the seed legislation in the EU is made up of Directives which were put in place by the European Commission.
Such directives can be interpreted by member states, resulting in different levels of leniency.

So now new legislation has been proposed in the form of an EU Regulation which must be adhered to in its entirety across all member states.

The result in the UK would be much tighter controls of seed saving and lead to the loss of many open pollinated varieties.
The proposed regulation was rejected by both the Environment and Agriculture Committees and has been sent back to the Commission for redrafting.

However, it is likely that the Commission will be under huge pressure from the agri-industrial lobbyists. Furthermore, if the Transatlantic Trade and Investment Partnership goes through, more pressure will be applied from the US seed industry.

They will no doubt aim to mould the regulation to benefit the large scale seed companies that already control so much of the commercially available seed.

Reclaim the seeds!

Obviously this is all rather disheartening, but it should be a reminder that as farmers, growers and a nation of amateur gardeners we must reinvigorate the skill of seed saving, and take back control of our seeds, and ultimately our food system.

One of the first steps of food sovereignty – set out in the 2007 Declaration of the Forum for Food Sovereignty is to assert "the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems."

By continuing to save and breed seed varieties that are locally adaptable we can begin to reverse this loss of biodiversity and build up a constantly evolving living seed bank.

It is of paramount importance that we work to bring back life to the skill of seed saving and set-up networks amongst farmers and growers to start breeding more open pollinated seed varieties that can be exchanged amongst local groups.

The South West Seed Savers' Cooperative

With the threat of the EU Regulation controlling the exchange and marketing of seeds and our belief that farmers should have the right to saving, sowing and exchanging their own seeds, The Landworkers' Alliance have set-up a seed saving network amongst growers and farmers in the South West of England.

The network was launched at an event held at Embercombe in Devon, which gave farmers and growers an insight into the history of seed saving and current legislations as well as a practical workshop to show how little is required to save seed, and how relatively simple it is.

The basic idea of the SWSSC is that each member saves open pollinated seeds, even if it is just from one variety of crop. We will gather in the autumn to share our seeds, so that each member comes away with many more varieties and can become less reliant on hybrid seeds bought from seed companies.

The members will gradually be breeding varieties that are locally adapted and so produce more resilient crops with a greater genetic diversity than if they were to use hybrid seeds.

The SWSSC will continue to host workshops and events to help members re-learn the skill of seed saving. Practical advice and guidance will be given to members, and on farm visits will take place to learn the technicalities of seed saving.

The ultimate intention is to have local groups all over the UK, building communities of growers who save and share high quality, locally adapted seeds – thus keeping alive essential knowledge and seed diversity, both a priceless inheritance from our ancestors, and such an important gift to our children.

Ashley Wheeler runs a market garden in Devon with his family. He is a founding member of The Landworkers' Alliance and The South West Seed Savers' Cooperative. He ran a session on seed networks at the Oxford Real Farming Conference on 6th and 7th January 2015.

The Landworkers' Alliance is an official member of the international peasant farming movement La Via Campesina which represents 200 million small-scale producers around the world. We campaign for the rights of small-scale producers and lobby the UK government and European parliament for policies that support the infrastructure and markets central to our livelihoods.

Join us:

If you are a grower or farmer in the South West of England and wish to be a part of the The South West Seed Savers' Cooperative please contact *ashley@trillfarm.co.uk*

Source: landworkersalliance.org.uk

Seed Freedom in Europe

Rollback of EU Seed Law

The Law of the Seed – Navdanya International

EU Seed Law, Vandana Shiva and the European Greens

Statement on Seed Freedom Victory in Europe – Press Release – February 2014

Source: *http://seedfreedom.in/statement-on-seed-freedom-victory-in-europe/*

There is good news from Europe. Both the Environment committee and Agriculture committee of the European parliament have rejected the Seed Law proposed by the European commission. This is a victory for biodiversity, for farmers and gardeners, for citizens, for democracy, and for Seed Freedom. Last year after the group of experts of the International Commission on the future of food/Navdanya launched the Law of the Seed at Terra Futura in Florence, we started to work with European Parliament to build a campaign to stop the Seed Monopoly Law based on uniformity from being passed.

Release of "The Law of The Seed": *http://seedfreedom.in/event/release-of-the-law-of-the-seed/*

Download: *http://seedfreedom.info/the-law-of-the-seed/*

Video - Public lecture by Vandana Shiva at the EU Parliament: *http://seedfreedom.in/video-the-law-of-the-seed/*

Germany – February 2014

Save our soils - Public Meeting and Guerrilla Planting Action at Nuremberg, Biofach (13th, 14th February 2014): *http://seedfreedom.in/save-our-soils-guerrila-planting-action-rettet-unsere-boden-pflanzaktion/*

Source: natureandmore.com «

Food Otherwise Conference »

Netherlands - February 2014

Food Otherwise Festival at Wageningen University (19th February 2014)
Key Note at the 2 day conference on the transformation of food and agriculture at Wageningen, Netherland:

http://seedfreedom.in/food-otherwise-conference-towards-fair-and-sustainable-food-and-agriculture-systems/

http://seedfreedom.in/vandana-shiva-keynote-speech-at-food-otherwise-conference/

International Solidarity Caravan for Seeds – April, May 2014

April-May 2014 saw the huge success of the International Caravan for Seed Freedom. The caravan travelled more than 4000 kms from Greece, to Italy to France. The caravan saw citizens and farmers from different realities come together openly and creatively to strengthen the Global Movement and share future actions so that from our seeds and food may begin a new economy based on the commons. In times of crisis of huge social, economic and ecological collapse the international caravan for Seed Freedom worked to build alternatives to the current ecological and agricultural models:

http://seedfreedom.info/campaign/international-solidarity-caravan-for-seeds-2014/

Key Outcomes:

- Planning meeting with key European movements on actions and strategies for the Call to Action for Seed, Food and Earth Democracy.
- Workshops on Seed Saving, Agro ecology and Beekeeping, Seed Exchange and Celebrating Biodiversity.
- European Co-ordination for Seed Freedom launched to combat upcoming EU Seed Legislation.

Source: Seed Freedom

- Peliti, Greece core and steering committee member of the Global Alliance for Seed Freedom.
  Co-ordinator from Peliti Athens travels to India for steering committee meeting in September 2014 as well as taking workshops on biodynamic farming.

Links:

International Solidarity Caravan for Seeds – A Reportby Manlio Masucci (translated by Navdanya International)
Source: *http://seedfreedom.info/campaign/international-solidarity-caravan-for-seeds-2014/#ManlioMasucci*

Florence Declaration on Seed Freedom, Food Freedom and Earth Democracy
http://seedfreedom.info/florence-declaration-on-seed-freedom-food-freedom-and-earth-democracy/

Source: Seed Freedom

LONDON, UK:
The Great Seed Festival - Call to Action 2014:

http://seedfreedom.in/events/the-great-seed-festival/

Source: The Great Seed Festival

ATHENS, GREECE:
2nd Festival for Seed Freedom in Athens with Peliti – Call to Action 2014:

http://bit.ly/1oedffY

Source: Peliti

IMPERIA, ITALY:
Seed Stories & Songs Live Show / SEMISERI - spettacolo tearale, with SImona Ugolotti 'La Cantadina' – Call to Action 2014:

http://seedfreedom.in/events/semiseri-spettacolo-tearale/

Source: Simona Ugolotti

BRIGHTON, UK:
Seedbombing Sunday!! Guerrilla Gardening!! – Call to Action:
http://seedfreedom.in/events/seedbombing-sunday-guerrilla-gardening/

Source: Food Warriors!!

AEGINA, GREECE:
School Vegetable Garden & Seedbeds with traditional seeds at Aegina's Upper Secondary School, with Aris Pavlos - Call to Action 2014:

http://seedfreedom.in/events/school-vegetable-garden-seedbeds-with-traditional-seeds/

Photo by Aris Pavlos

Address Book

Org Name: AFSA (Alliance for Food Sovereignty in Africa)
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Org Name: Food Sovereignty Ghana
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Twitter: https://twitter.com/FoodSovereignGH

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Facebook: https://www.facebook.com/vandanashiva.navdanya
Twitter: https://twitter.com/drvandanashiva
Twitter: https://twitter.com/NavdanyaBija
YouTube: https://www.youtube.com/channel/UCgJdqs2zt4SM9H9gJaOeH2Q

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Org Name: BioThai Foundation
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Website: http://www.biothai.net/
Facebook: https://www.facebook.com/biothai.net
Twitter: https://twitter.com/BioThaiweb
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Org Name: Salt Spring Sanctuary Society
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Org Name: OSGATA (Organic Seed Growers And Trade Association)
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Twitter: https://twitter.com/SeedBroadcast
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Country: United States
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Website: http://www.hummingbirdproject.org/
Facebook: https://www.facebook.com/HummingbirdProject
Twitter: https://twitter.com/THProj
Vimeo: http://vimeo.com/hummingbirdproject

Org Name: Cleveland Seed Bank
Country: United States
Website: http://www.clevelandseedbank.org/
Facebook: https://www.facebook.com/ClevelandSeedBank
Twitter: https://twitter.com/CLESeedBank

Org Name: Center for Food Safety
Country: United States
Contact: http://www.centerforfoodsafety.org/contact-us
Website: http://www.centerforfoodsafety.org/
Facebook: https://www.facebook.com/centerforfoodsafety
Twitter: https://twitter.com/TrueFoodNow

Org Name: Hudson Valley Seed Library
Country: United States
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Org Name: Red de Semillas Libres de Colombia
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Org Name: Grupo Semillas Colombia
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Org Name: Campaña Semillas de Identidad
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Twitter: https://twitter.com/jardinbotanicob
YouTube: https://www.youtube.com/channel/UCkrfjiNXFveLPGOQw5lOk9w

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Facebook: https://www.facebook.com/pages/C%C3%ADrculos-de-Sementes-Circles-of-Seeds/470210299710379

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Facebook: https://www.facebook.com/LandWorkersAlliance
Twitter: https://twitter.com/LandworkersUK