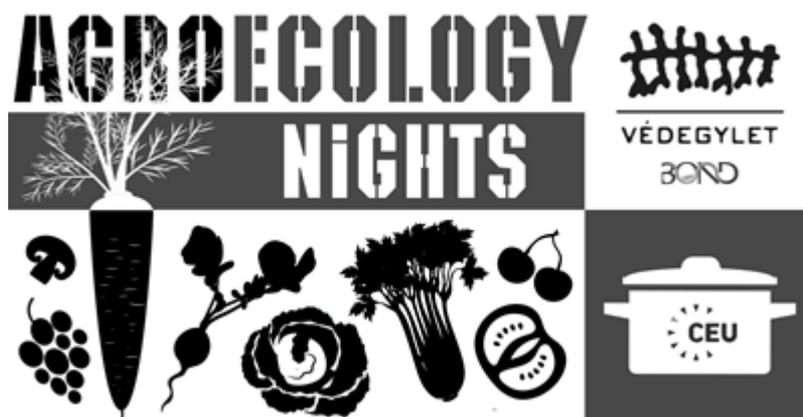


AGROECOLOGY NIGHTS N° 2 - Seed Sovereignty



How familiar are you with alternative agricultural systems, sustainable diets, and food sovereignty? As responsible citizens and concerned consumers, we must be informed how our food is produced, by whom, and what environmental impact it has.

Join us in the Agroecology Nights event-series and get inspired by the discussions with guest speakers active in alternative agricultural systems as farmers, consumers' associations, researchers, academics, and civil society organizations. Agroecology nights is co-organized by Védegyelet and the Department of Environmental Sciences and Policy at CEU and will feature 4 events from November to March.

Join us to the **second event on January 16th, 2019 at 17.30 - 20.00 Nádor utca 11. Room 004.**

During this event we will discuss the role of heirloom and organic varieties in adaptation to changing climatic conditions. In addition, we will discuss issues related to the access to seeds and other propagation materials.

17:45- 18:15 : Movie screening of "*Seeds of freedom*"

18:45- 19:00 : Audience discussion

19:00- 20:30 : Round table discussion with guest speakers

This time our guest speakers will be:

- Judit Fehér from Magház (<http://maghaz.hu>)
- Ádám Fülöp from Pipacs Pékség (<https://pipacspekseg.hu>)
- Raluca Dan from Eco Ruralis (<https://ecoruralis.ro>)
- Guntra Aistara from CEU (https://people.ceu.edu/guntra_aistara)

Guest Speakers

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Judit Fehér is a biologist and she has always been passionate about biodiversity. In 2008 a new world opened for her, discovering the beauty of cultivated plant and seed diversity. She has 10 years of experience in ex situ and in situ conservation of landraces/ traditional varieties, managing a collection with more than 500 accessions. In 2012, together with some enthusiastic and committed friends, they took the first steps to establish a community network for agrobiodiversity, called **Magház** (Seedhouse). The main aim of the initiative is to promote healthy and diverse vegetable-ornamental gardens, cultivating traditional varieties, instead of 'lawn and thuja'. They promote in situ maintenance of agricultural genetic diversity to facilitate the adaptation of crops, hence mitigating the effects of climate change and increasing pest and disease problems. This is supported by activities organized by the network, like seed swaps, seed saving courses and a booklet, different workshops and an on-farm variety trial, which will be launched for the first time in 2019. The network is open to everyone with an interest in food self-sufficiency and sustainable agriculture. <http://maghaz.hu>

With a master degree in ecology from Geneva, **Ádám Fülöp** worked two years in the Ministry for Rural Development being responsible for the issue of landrace varieties and was also the national focal point for the FAO ITPGRFA (FAO Seed Treaty). In 2012 he quit the Ministry and spent an autumn in the South of France with his family at a farmer-miller-baker's farm, Jean-Francois Berthelot, a well-known activist in the field of dynamic in situ conservation of old varieties of cereals. In 2014 he was the co-founder of **Pipacs Pékség**, an organic artisan bakery in Budapest. Today, besides the management of the bakery, he deals with the issue of seeds and mills on a practical level: trying to co-create a strong alliance and network amongst the actors in the chain of farmers-millers-bakers. <https://pipacspekseg.hu>

Guntra Aistara is an environmental anthropologist whose research lies at the intersection of political ecology, food sovereignty, and environmental justice. Her research interests include organic agriculture movements, agrobiodiversity and seed sovereignty, agroecology, permaculture, culinary heritage revivals, multi-species ethnography, and socio-ecological resilience of local food systems. Her new book, [*Organic Sovereignties: Struggles over Farming in an Age of Free Trade*](#) (University of Washington Press, 2018), explores how organic agriculture movements in Latvia and Costa Rica have negotiated entry into free trade regions, such as the European Union (EU), and the Central American Free Trade Agreement (CAFTA), respectively. Guntra is Associate Professor in the Department of Environmental Sciences and Policy. https://people.ceu.edu/guntra_aistara

Eco Ruralis is a peasant association, engaged in small-scale, diversified food production, based on the principles of agroecology. We took the initiative to bring into existence Eco Ruralis in 2009, believing that we, as women and men peasants, have to represent our own needs and rights and that peasant agriculture is the ideal model of agriculture in Romania. This includes our right to use (multiply, exchange, breed) and sell seeds, the right to land and access to the market, as well as the right to be part of the decision-making process in regards to food and agriculture public policies.

3

Currently, Eco Ruralis has 10.000 members from all over Romania and it's a member of the worldwide peasant movement La Via Campesina and its European Coordination Via Campesina. **Raluca Dan** works as members facilitator and support, while also dedicating a specific focus on the Right to Seeds program coordination.

Biodiversity is the result of thousand of years interaction between nature and rural communities producing the food the humanity needs for its survival. Peasants are one of the main contributors to biodiversity. Constantly and continually, they preserve, renew and breed plant and animal varieties right from their own local systems where the production is developed. Peasants do not consider themselves the owners of the living beings. Their rights include all exchanges taking place between water, soil, animal and their peasant knowledge, not only the genetic resources of the plants.

Their rights are opposed to industrial property rights and go beyond that. They are collective by their nature and consist in the basis of agriculture, in general, and of food production, in particular, as a public service provided to humanity.

Peasants cannot continue to go further with their contribution to maintaining current biodiversity, renewing it, as well as provide healthy, nutritious, costly accessible food to the rural and urban people, and make a decent living if their right to seeds is not recognized and put in practice. They have to have free access to the genetic resources of the plants cultivated at their farms, to be allowed to sell their seeds, instead of being criminalized or marginalized.

In this sense, Eco Ruralis works both at political and practical level. Seed producers within the association come together and:

- annually organize a national free seeds distribution. Every year, peasant seeds produced by various members are being distributed for free to thousands of people (peasants, urban gardeners) across the country, based on a yearly published Seed Catalog.
- organize peasant to peasant knowledge exchanges, seed exchanges and meetings
- work towards obtaining a strict regulation of Genetically Modified Organisms and synthetic biology, closely with allies
- work towards policies that put in practice their right to seed

<https://ecoruralis.ro>

1. Agrobiodiversity, plant genetic diversity and their importance

“Biodiversity embodies a dynamic, constantly changing and fluid patchwork of relations between people, plants, animals, other organisms and the environment. Thus biodiversity is the manifestation of the creativity and knowledge of peasants as they engage with the natural environment to satisfy their needs, while striving for autonomy.” (FIAN, 2016)

4

Since domestication of plants for human consumption started, farmers have been planting seeds and selecting plants for further propagation by desirable traits, such as nutritional value, climate and soil adaptation or resistance to pests and diseases. This selection and sharing of seeds between communities resulted in continuous genetic recombination and local adaptation of **landraces**. This historic crop diversity is a rich repository of genetic resources both for locally adapted use and worldwide breeding, as a more diverse gene pool allows for a wider variety for breeding materials.

Agrobiodiversity refers to the variety of animals, plants and microorganisms that are used directly (as crop plants or domesticated animals) or indirectly (as part of the ecosystem surrounding agricultural production) for food and agriculture. In the case of crop plants, agrobiodiversity refers both to the diversity of species and varieties in a given agroecosystem. A high diversity of crop plants support human and ecosystem health and resilience in agroecosystems. Agrobiodiversity contributes to healthy, culturally appropriate diets and enhances farmers capacities to cope with socio-economic changes and climate change. By enhancing diversity, farms can reduce risks, increase yields, ensure nutritional balance, spread workload and capture market opportunities.

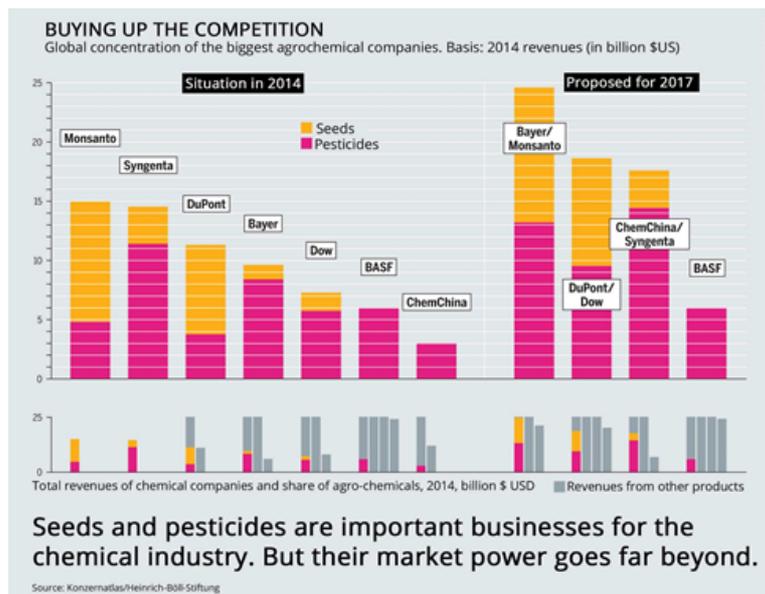
Plant genetic resource diversity is on one hand threatened by climate change but on the other hand, it provides the genetic resources to respond to challenges posed by climate change and meet demands for dietary diversity and nutrition. Genetically heterogenous populations (a mix of different varieties) can reduce risk and increase overall production- when one component is susceptible to a certain risk (pathogens, extreme weather conditions), the other component can be resilient and balance out production. **Genetic vulnerability** is the term used for the susceptibility to pests, pathogens or environmental effects of genetically uniform populations; while **genetic erosion** refers to the loss of variety and flexibility in species and varieties. Genetic erosion is greatest in cereals, vegetables, fruits and nuts. Since the 1900s over 75% of plant genetic diversity was lost; only 3 plant species provide 60% of plant-based calories in the world today (FAO, 2010a; FAO, 2010b; FIAN, 2016)

2. Problems in the industrial seed system: Seed, breeding and access to genetic variety

Modern agriculture has developed crop varieties and seed systems to work in an industrialized, uniform food system according to strict market standards and driven by consumer demand for cheap, available and standardized food. The industrial seed system has bought with it technologies that destruct agricultural diversity by land clearing, large monocultures, chemical contamination, standardization of varieties and production systems. Seed is both foodstuff and an important means of production, this is why control over seeds results in control over the food system, defining what we grow and consume.

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Since the Green Revolution, large corporations are seeking to monopolize plant genetic resources and restrict use of genetic materials through technological and regulatory tools. Globally, three large corporations control over 50% of the seed market and are spreading the associated environmentally damaging technologies of industrial production, such as a high doses of various chemical inputs. Ecosystems around the world are becoming fragmented, while species used for food are at an increased risk of extinction due to a loss of variety in plants sustaining human livelihoods. This genetic erosion is greatest in developed regions, including Europe, where high input varieties came to dominate over the last decades. (Kloppenburg, 2010; FIAN, 2016)



Over the millennia of agriculture, peasant communities have traditionally used, improved, saved and exchanged seeds for production; during the 20th century however, corporations have developed technologies that restrict these traditional practices. Technologies associated to modern breeding can restrict the free use of genetic resources and the reliance on plants with high productivity on the expense of other traits reduce genetic diversity across crop plants.

Hybrid seeds are created by crossing distinguished parental plants, resulting in often improved genetic traits of the first generation (F1) offspring. When seeds from the F1 generation are saved, the second generation (F2) offspring will not have the same genetic traits; hybrid varieties are therefore not suitable for seed saving and require

purchasing new seed each year. Hybrid breeding technology has contributed significantly to the scale of the industrial agriculture, by creating highly productive varieties that respond well to chemical inputs and require less labor, but have associated social and environmental costs

6

Genetically modified (GM) seeds/ Biotech seeds are created using genetic engineering technologies, introducing traits to plants that are naturally not present in a species. These traits can include higher productivity, pest and disease resistance, resistance to weed killers, the production of insecticides or genetic use restriction technologies that prevent seeds from germinating without specific chemical treatment. Most widespread are “Roundup ready” crops with a built-in resistance to the weed- killer glyphosate and crops producing the insecticide Bt. These technologies have caused, among others, an increased use of herbicides and environmental damage, the development of herbicide resistant “super weeds”, destruction of harmless insect populations and negative effects on human health (Beyond Pesticides, 2018).

Patenting life

Besides technological restrictions, through their economic and lobby powers, agricultural corporations and governments created regulatory restrictions for the free use of plant genetic resources.

Plant Variety Protection and Plant Breeders Rights legislations provide intellectual property rights on plants, often associated with national legislation on seed certification and marketing. The International Union for the Protection of New Varieties of Plants (UPOV) currently has 70 member countries imposing intellectual property rights and regulations that allow market access only to large corporations over small actors. National legislation and enforcement of UPOV limits saving and exchanging seeds and restrict use of patented varieties for breeding. Besides affecting patented varieties, market regulations can drastically affect local seed systems by banning non- certified seeds, ban all seed production outside registered fields and breeding facilities and ban all seeds not registered within a national system. To further limit traditional seed systems, companies can take farmers seeds (eg. access them from genebanks), homogenize them and create a patented variety, while the protection can extend to “similar” varieties and traits. This practice can result of farmers not being able to use their own varieties without royalty fees. Not complying with these laws and regulations can mean high fines or even jail time for farmers. With varying levels of limitations in national legislations, international trade agreements often include necessary UPOV membership and regulations in favor of large multinational companies. Currently the Comprehensive Trade and Economic Agreement (CETA) between Canada and the EU is under development, which would promote and reinforce UPOV regulations in Europe and all future EU trade deals with third parties (Chow, 2016; GRAIN, 2014; GRAIN, 2015).

Genetic drift/ Genetic contamination are terms used for unintended cross pollination of GM and non- GM crops. Detection of genetic contamination can result in economic loss for organic farmers, as organic standards do not allow for GM technology; as well as pose problems for farmers for unintended patent infringement (Hoidal, 2010).

The development of patentable varieties relies on access to the pool of biodiversity produced and reproduced in traditional farming systems by farmers and indigenous peoples. Biopiracy refers to the practice, when breeders take advantage of traditional seed collections, develop new patented varieties without providing benefits to the communities where breeding material originated from (Kloppenborg, 2008).

3. Seed sovereignty and the open-source seed movement

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Seed saving is as old as agriculture; it refers to the practice of harvesting and storing seed for the next year's production. In the case of certain cereals, this can be as easy as saving some of the grain for seeds instead of food. However, in the case of some crops, where seed is not part of the regular crop (eg. cabbages) or where varieties cross-pollinate easily between neighboring fields (eg. maize), seed saving can require advanced knowledge and practice. Seed swapping or seed exchange between farmers and communities is also a long standing custom among farmers. Today, local and global networks help farmers and home-gardeners gain access to small amounts of saved seeds.

Local varieties are linked to culture, specific production systems and landscapes; which are all suffering under the pressures from the industrialized food system. Traditional food and seed systems were developed as a result of thousands of years of synergistic interaction between biological and cultural resources. In this biocultural evolution, genetic codes are stored in DNA, while cultural codes are stored in beliefs and practices of the people using these resources. Local, peasant food systems allow for adaptation of crops to complex ecosystems without high levels of external inputs and maintain a constant renewal of biodiversity through selection of local crops and mixing with external genetic material. Commercial seeds change practices and lives of peasant communities: less labor can mean improvement of livelihoods, but commercial seeds require higher inputs, which can lead to a loop of high costs and loss of autonomy. Since these seeds are designed for monocultures serving a global food system with low cost commodities, the export of these products can undermine local food security and lead to the loss of local food cultures. As the diversity of crop genetic diversity is degrading and access to the existing genetic pool is becoming limited, traditional seed systems and small-scale, independent plant breeding to face future challenges of climate change and nutrition are becoming more and more compromised. (FIAN, 2016; 2018; FAO, 2010b)

Seed sovereignty aims to reclaim seeds and biodiversity as a protected commons and a public good. It reinforces farmers' rights to breed, use, exchange, and sell diverse open-source seeds which can be saved and which are not patented, genetically modified, owned or controlled by emerging seed giants (Hoidal, 2010). The fight for seed sovereignty has grown into a global grass-roots movement strongly integrated into the pursuit of agroecology for food sovereignty and locally adapted food systems liberated from corporate greed. These movements are characterized by inclusion of a wide range of stakeholders (farmers, rural communities, indigenous communities, scientists, NGOs, policymakers), interdisciplinarity, respect for tradition, and adaptation of new technologies.

There are several alternatives for supporting traditional and alternative seed systems and conserving the genetic diversity of agricultural plants. The goals of these approaches are to:

- Characterize, catalogue and maintain local materials (community, national and international level);
- Improve local genetic materials through breeding;
- Provide access to and information about available local varieties to farmers;
- Help maintain and spread cultural values and traditional knowledge associated with specific seed systems;
- Promote consumer demand and policies to support plant genetic diversity.

The open- source seed movement is similar to the open source software movement by creating a mechanism for genetic material exchange between those who will reciprocally share it. In the case of open- source seeds, genetic material is considered protected commons, the system ensures that varieties stay in the public domain without restrictions for others to innovate based on the logic that farmers are both users and innovators of technology. Seeds and varieties derived from open- source varieties should also be available without any monopolistic claims and restrictions on further developments. As of now, legal protection does not exist for open source seeds but relies on a moral commitments of users, for example by a pledge on seed packets. (Kloppenburger, 2008; 2010; Halpert and Chapell, 2018).

Open- pollinated seeds will grow similar plants year after year from saved seeds if no cross- pollination occurs, making them ideal for seed saving. The tendency for cross pollination varies between plant species and can be prevented by physical or time barriers between plants.

Heirloom varieties and landraces are open- pollinated varieties or populations that were stabilized over time by a breeder or farming community and are usually well adapted to local environmental conditions and food cultures.

Organic seeds are seeds regulated and produced by organic certification standards. Organic regulations do not allow for GM technology or chemical seed treatments; however organic seeds can be produced and marketed as hybrids or other modern varieties. A new movement of organic breeding aims to not only promote organic cultivation, but take into account natural reproduction and breeding history. In its guidelines, organic breeding can not restrict germination capacity, further use, and breeding; refrains from patenting; and encourages participatory methods and exchange of seeds. (European Consortium on Organic Plant Breeding, 2012)

Participatory breeding methods help maintain and develop species and varieties in their natural environments on farms (in- situ). In this sense, farmers are custodians of diversity and active participants in breeding new varieties.

Community Seed banks and seed libraries are present in marginalized areas where peasant agriculture, traditional values of sharing, cooperation and reciprocity between farmers are still present. They are responsible for identification, collection, conservation and distribution of plant materials at the community level and help maintain culturally appropriate and climate adaptable local varieties, but also

contribute to the restoration and improvement of old varieties through participatory method. (Shresta et. al, 2013).

National or international gene banks are specialized facilities storing plant genetic materials as seeds or living plants. To maintain materials, plants are grown ex-situ (off-farm), often far away from their original habitats and seeds are stored in special conditions to maintain viability. In the case of national gene banks, plant genetic materials can be accessed by breeders, farmers and home-gardeners; whereas international cooperation's are aimed at long-term conservation of genetic resources for humanity in case of natural disasters (e.g. The Svalbard Global Seed Vault)(FAO, 2010a).

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FAO International Treaty on Plant Genetic Resources for Food and Agriculture was called to life by member states to counterbalance negative effects of seed agreements by ensuring farmers' rights to save, use, exchange and sell farm saved seed.

Stay tuned for the next events of Agroecology Nights coming soon!



Organisations

Bioversity International: <https://www.biodiversityinternational.org/>
 European Coordination for Let's Liberate Diversity: <https://liberatediversity.org>
 ETC Group: <http://www.etcgroup.org/>
 FAO: International Treaty on Plant Genetic Resources for Food and Agriculture: <http://www.fao.org/plant-treaty/en/>
 GRAIN: <https://www.grain.org>
 Open Source Seed Initiative: <https://osseeds.org/about/>
 Organic Seed Alliance: <https://seedalliance.org/>
 Right to Food and Nutrition: www.righttofoodandnutrition.org
 Seed Freedom: <https://seedfreedom.info/>
 Svalbard Global Seed Vault: <https://www.croptrust.org/our-work/svalbard-global-seed-vault/>

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Resources

Beyond Pesticides: Herbicide tolerant crops, 2010
<https://www.beyondpesticides.org/programs/genetic-engineering/herbicide-tolerance>
 Bioversity International, 2018- Beat the heat with community seedbanks - How crop diversity held in community seedbanks is helping farmers adapt to changing climates
<https://www.biodiversityinternational.org/ar2017/community-seedbanks-climate-change/>
 Bioversity International, 2018- Agrobiodiversity Index
<https://www.biodiversityinternational.org/ABD-Index/>
 Cernansky R., 2017- How “open source” seed producers from the U.S. to India are changing global food production
 Chow, H., 2016- *Cetas threat to seed freedom* in Global Justice Now
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<https://www.grain.org/article/entries/5070-trade-deals-criminalise-farmers-seeds>
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 Kloppenburg, J. (2010). Impeding dispossession, enabling repossession: biological open source and the recovery of seed sovereignty. *Journal of agrarian change*, 10(3), 367-388
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 Suarez S.M, Rahmanian M., Onorati A., 2016. *Seeds and agricultural biodiversity: The neglected backbone of the right to food and nutrition*. *Fight for Food and Nutrition Watch*
<https://www.righttofoodandnutrition.org/seeds-and-agricultural-biodiversity>

Infograph

http://aseed.net/wp/wp-content/uploads/2017/03/Agribusiness-mergers-infographic.jpg?fbclid=IwAR3N_EsRTW1AjhJWRtcZ0wBD9xML_kVExmsi3R40wWGA2L2_inliMY3-5k (accessed on 02.01.2019)

STOP SEED LAWS THAT CRIMINALISE FARMERS & DEFEND LOCAL SEEDS!

Seeds are under attack everywhere. Under corporate pressure, laws in many countries increasingly put limitations on what farmers can do with their seeds and with the seeds they buy. Seed saving, a thousand-year-old old practice which forms the basis of farming, is fast becoming criminalised. What can we do about this?

DEFEND FARMERS' OWN SEED SYSTEMS

Farmers' fields are the first line of defense against bad seed laws. This means organising to rescue, collect, maintain, develop, share and use local farmers seeds. It is very important that women and young people are all involved. You can start a project with neighbours or local associations, talk to market or street vendors, get schools or you work place involved, etc. Seed fairs and visits to farms and gardens are an important part of this work.

STOP "MONSANTO LAWS"

Law proposals criminalising farmers are easier to fight against before they become written into law. If public opinion is against them, they become more costly for governments to push through. Organise street protests, make videos, talk to the media, organise direct actions...

JOIN FORCES WITH OTHER FARMERS

In many other countries, farmers are fighting very similar laws. Learning from them and their experiences, good and bad, can be very helpful. Even if we have different strategies, we can build common fronts against the seed industry and the governments acting in their interest.

BUILD ALLIANCES WITH OTHER MOVEMENTS

Broad alliances can be built when people understand that seeds affect everyone's well-being, not only farmers. The struggle for seeds can be integrated into farmers' wider struggles, since there is no food sovereignty without seed sovereignty. Seed struggles can also be important parts of larger fights, such as campaigns and actions against free trade agreements, austerity measures, new patent or internet regimes, climate change, land laws, etc.

UNDO THE PROPAGANDA

Seed companies and governments present seed laws as protecting consumers, ensuring quality seeds, raising yields and feeding the hungry. We need to debunk these myths and show that the agriculture they are promoting is toxic and generates hunger. These laws are only meant to extract wealth from rural communities and transfer it to corporations.

TRY TO GET POSITIVE LAWS

In some cases, it may be possible to obtain favorable laws, programmes or tools that 'protect farmers' seed systems. Think of GM-free zones, laws rejecting patents on life or programmes that promote local varieties and farmers seeds. In other cases, such laws or legal efforts may exclude people, divide communities, entangle farmers in legal bureaucracies, create contradictions or be a waste of time.

Read the publication on line
"Seed laws that criminalise farmers Resistances and fightback"
<http://www.grain.org/3173>
<http://via.campe sina.org/en/index.php/publications-mainmenu-30>

MARCH 2015

