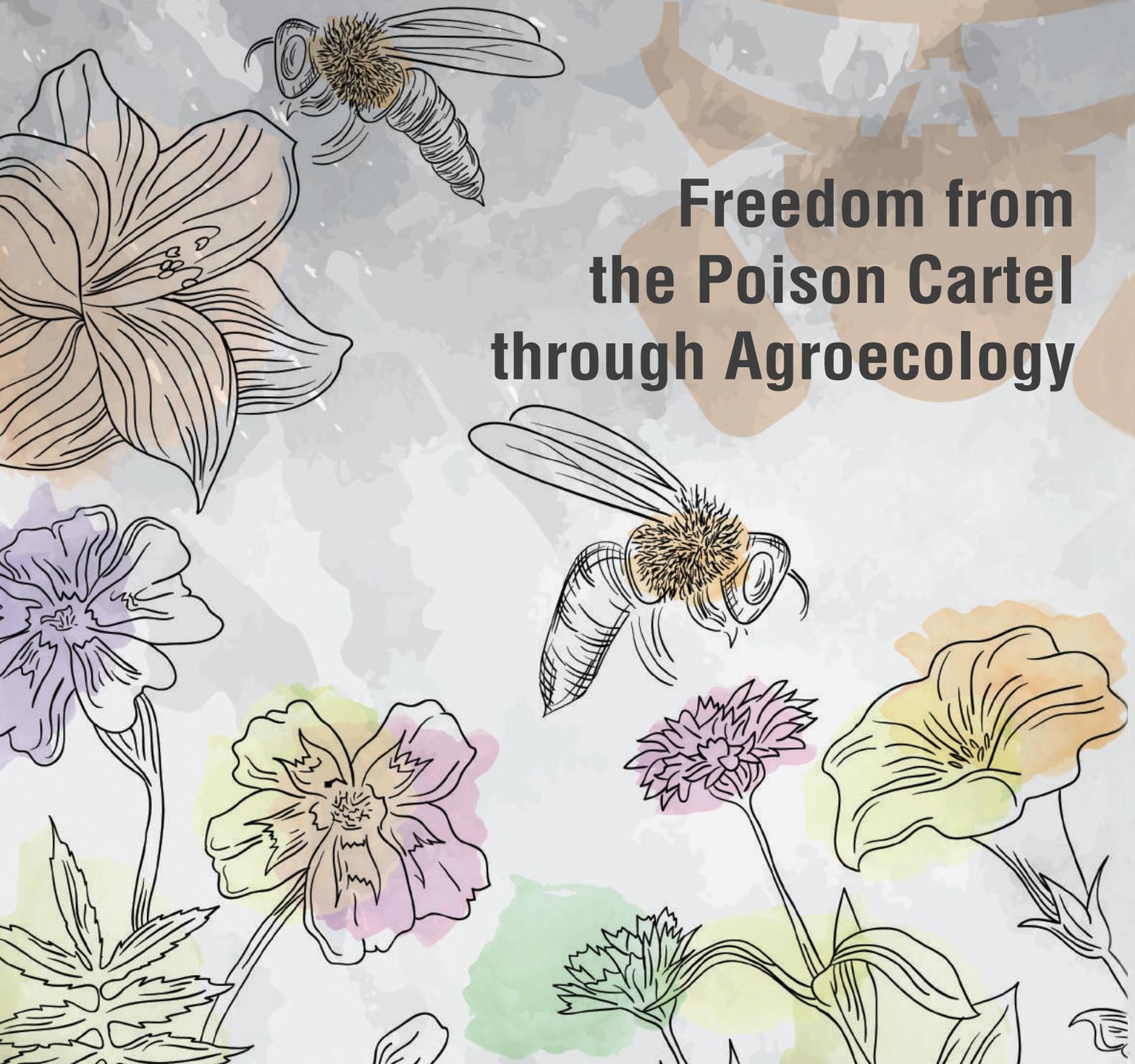


THE TOXIC STORY OF ROUND UP

Freedom from
the Poison Cartel
through Agroecology





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THE TOXIC STORY OF ROUNDUP:

Freedom from the Poison Cartel through Agroecology

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**“The time has come to reclaim the stolen
harvest and celebrate the growing and
giving of good food as the highest gift
and most revolutionary act”**

Dr. Vandana Shiva





FOREWORD

THE POISON CARTEL A Century of Ecocide and Genocide

In the early 1960s, Rachel Carson in her groundbreaking book 'Silent Spring' which documented the detrimental effects on the environment of the indiscriminate use of pesticides, indicated how the creation of pesticides was literally a by-product of war. "In the course of developing agents of chemical warfare, some of the chemicals created in the lab were found to be lethal to insect... some of them became deadly nerve gases. Others of closely allied structure, became insecticides"¹.

In just 100 years, the chemicals and technologies of war-based conglomerates, which produced and profited from the chemicals that killed millions of people during the two world wars, have continued their destruction, wiping out millions of species by spreading poisonous agrichemicals, destroying our fragile ecosystems, poisoning our soils and entire web of life, undermining every aspect of our lives for financial profit. They have enlarged their empires and established monopolies through free trade neoliberal policies and deregulation of commerce, broadening their control over our lives. They are attacking life on earth and biodiversity and threatening farmers' rights to seed and people's rights to affordable medicine through patents and intellectual property rights (IPRs).

Corporations such as Monsanto and Bayer have a long common history with their roots in war², experimenting with and developing chemicals that kill and maim people. They shared technologies in manufacturing explosives and lethal poisonous gases, which were sold to both sides of the two World Wars. Along with Hoechst and BASF, Bayer was part of I.G. Farben, Nazi Germany's largest chemical conglomerate and financial core. Among other poisons, it supplied Zyklon-B, a cyanide based pesticide used in concentration camps during the holocaust, which was used as evidence in the Nuremberg trials, finding them guilty of war crimes³. While it was split up after the war, each of its 3 main components grew into becoming 20 times bigger than IG Farben. Most of the executives were found guilty of mass murder and crimes against humanity and sentenced to mild prison terms and after release, found themselves in leading positions at chemical and pharmaceutical companies.⁴ Monsanto and Bayer have had a Joint Venture in the past – MOBAY – which supplied ingredients for Agent Orange in the Vietnam War. It has been reported that 20 million gallons defoliants and herbicides were sprayed over South Vietnam⁵.

The Poison Cartel and the takeover of our food and agriculture

Over the last decades these same companies, with their roots in war, turned to the agricultural market, where they saw enormous potential to keep multiplying their profits. They have enlarged their control over our seed, robbing us of our food freedom, our human rights and our democracies. Through patents and intellectual property rights (IPRs), and free trade agreements, they have

established monopolies, threatening farmers' rights to seed, people's rights to affordable medicine and people's rights to healthy, nutritious food. During the 90s', for example, the top three global seed/chemical companies acquired major seed companies globally. Roughly \$15 billion worth of mergers in the global seed industry were settled between 1996 and 1999⁶. Monsanto and other big firms have pursued the general strategy of linking research and development of biotechnology on genetic traits with the acquisition of a vast number of seed companies, in order to market their "seed and chemicals" package to farmers.

The chemical giants Monsanto, BASF, Bayer, Dupont, Syngenta and Dow also have cross licensing arrangements⁷, through which they can share patented genetically engineered seed traits, which have allowed them to form one monopolistic Seed and Poison Cartel.

These "Big 6" chemical and GMO corporations that own the world's seed, pesticides and biotechnology industries are now enlarging their empire with mega buyouts. Syngenta is merging with ChemChina (\$43 billion deal). Dow Chemical, which bought up Union Carbide responsible for the Bhopal disaster⁸ killing over 20,000 people, is merging with Dupont (\$122 billion deal) while Bayer is now merging with Monsanto (\$57 billion deal).

Should all these mergers get approved by EU and US regulators, just 3 companies will be left in control of 60% of the world's seeds and 70% of the chemicals and pesticides⁹ In 2017, the European Commission gave a positive opinion on the merger between the Chinese ChemChina and the Swiss Syngenta¹⁰ and between the Americans Dow Chemical and DuPont¹¹, while the executive of the EU are considering the merger of the other two world giants, Bayer and Monsanto¹².

By the end of August 2017 Du Pont and Dow announced that all required regulatory approvals and clearances had been received and that shares of Dow/DuPont will begin trading on the NYSE on September 1, 2017¹³. The remaining two deals currently are under antitrust scrutiny in several countries. In April 2017 Syngenta and ChemChina obtained regulatory approvals both from the U.S.¹⁴ and the E.U.¹⁵, as well as from China¹⁶. In August 2017 the European antitrust regulators announced an in-depth investigation of Bayer's proposed acquisition of Monsanto, saying it would hinder competition in various pesticide and seeds markets¹⁷, while the U.S. review is ongoing¹⁸. Through these aggressive mergers and acquisitions they are expanding their markets, and, by directly targeting decision-makers, increasing their influence and pressure on governments and institutions. Through wide public relations and propaganda they are undermining science¹⁹-to ensure that health and environmental regulations do not interfere with their profit making activities, thus increasingly leading to the erosion of our democratic principles. By expanding their monopolies on seed and food, chemicals and medicines, they deepen their control over our food and health, with the burden of this system falling most heavily on the smallest farms and the poorest consumers.

With multinationals closing ranks through mergers to become bigger and more powerful, civil society movements are joining forces to reclaim their rights to healthy food and a healthy and safe environment, to defend human rights, environmental rights and regulations gained through years of social struggle. Navdanya²⁰ has been working to challenge the process of the Monsanto-Bayer merger, both in India and internationally²¹. In March 2017 the Competition Commission of India rejected the Monsanto-Bayer merger application²², With the Dow-Dupont merger still under scrutiny in April 2017.

As these corporations become fewer and bigger, they will likely be further privileged through the current 'Free Trade' treaties²³ such as CETA (Comprehensive Economic and Trade Agreement between Europe and Canada)²⁴, recently signed by the European Union and Canada, and various bilateral and regional agreements. These new generation trade agreements are strongly influenced by corporate lobbying and include the controversial mechanism of private arbitration tribunals (ISDS or ICS for CETA)²⁵, which undermine national constitutions and laws, allowing corporations to sue governments

Poison Cartel.Toxic Capital.

The Vanguard Group, Inc.
 Norges Bank Investment Management
 Northern Cross LLC
 Jupiter Asset Management Ltd.
 Fidelity Management & Research Co.
 UBS AG (Investment Management)
 Artisan Partners LP
 Credit Suisse AG
 Capital Research & Management Co. (World Investors)
 Syngenta AG



PIONEER
 A DUPONT COMPANY
BASF
 We create chemistry

The Vanguard Group, Inc.
 Norges Bank Investment Management
 Northern Cross LLC
 Fidelity Management & Research Co.
 Capital Research & Management Co. (Global Investors)
 Jupiter Asset Management Ltd.
 UBS AG (Investment Management)
 Artisan Partners LP
 Credit Suisse AG
 Capital Research & Management Co. (World Investors)
 as of 31 Dec 2015

syngenta



Capital Research & Management Co. (World Investors)
 The Vanguard Group, Inc.
 SSgA Funds Management, Inc.
 BlackRock Fund Advisors
 Triun Fund Management LP
 T. Rowe Price Associates, Inc.
 Fidelity Management & Research Co.
 Highfields Capital Management LP
 Northern Trust Investments, Inc.
 DuPont Capital Management Corp.



Capital Research & Management Co. (World Investors)
 The Vanguard Group, Inc.
 Lyxor International Asset Management SAS
 Norges Bank Investment Management
 State Street Global Advisors Ltd.
 BlackRock Fund Advisors
 Massachusetts Financial Services Co.
 BlackRock Asset Management Deutschland AG
 Amundi Asset Management SA (Investment Management)
 Dodge & Cox



The Vanguard Group, Inc.
 SSgA Funds Management, Inc.
 BlackRock Fund Advisors
 Capital Research & Management Co. (World Investors)
 Third Point LLC
 Capital Research & Management Co. (Global Investors)
 Wellington Management Co. LLP
 Northern Trust Investments, Inc.
 Capital Research & Management Co. (International Investors)
 Franklin Advisers, Inc.

Capital Research & Management Co. (Global Investors)
 The Vanguard Group, Inc.
 SSgA Funds Management, Inc.
 BlackRock Fund Advisors
 Massachusetts Financial Services Co.
 Glenview Capital Management LLC
 Fidelity Management & Research Co.
 Sands Capital Management LLC
 PRIMECAP Management Co.
 Davis Selected Advisers LP



MONOPOLY

and ask millions of dollars as compensation, should local and national rules and regulations – aimed at protecting citizens’ health and the environment – put their potential profits at risk.

These hallowed corporations of today, that have been tried and tested for crimes against humanity in the post war years, continue to use the same poisons that kill, but under the guise of being saviours of humanity. In just 3 decades these war criminals have enlarged their control over our seed and food, destroying the earth and pushing small farmers – the real producers of food and sustenance – off the land, while robbing us of our food freedom, our human rights and our democracy.

False claims and narratives

The entire industrialization of food, agriculture and life is based on the false claim of feeding the world, when the reality is that an agriculture that has been shaped by the war industry is at the root of the hunger and malnutrition in the world. Equally erroneous are the claims that industrialized agriculture produces higher yields and reduces the use of pesticides when reality has shown that the opposite is true. In 2009, the wide-based seminal IAASTD report of the United Nations and World Bank asserted that chemical-intensive industrial agriculture has degraded the natural resource base on which human survival depends and now threatens water, energy and climate security. Continued reliance on simplistic and often expensive technological fixes—including transgenic crops—is not a solution to reducing persistent hunger and poverty and could exacerbate environmental problems and worsen social inequity. Technologies such as high-yielding crop varieties, agrochemicals and mechanization have primarily benefited transnational corporations and the wealthy, rather than the poor and hungry of the world²⁶.

The last two decades of experience with GMOs has shown that it is a failed technology – instead of controlling weeds and pests it has created super weeds and super pests²⁷. Despite this, patents, royalty collections and corporate greed continue to propel the spread of GMOs.

While competition is the rhetoric of free trade agreements, monopoly is the outcome and as such they are destroying diversity, pluralism and democracy, the systems that protect our food, health and livelihoods. For example, India was forced to allow the entry of Monsanto in the name of competition. Today Monsanto controls 95% of the seed supply and has established a total monopoly pushing farmers into debt and suicide. Similarly, the global pharmaceutical giants, which are no different to the agrichemical and biotech giants, are attempting to destroy the generic drugs industry and affordable medicine.

Through cross licensing agreements, mergers and acquisitions, which of these companies will be in the cockpit will be decided by issues of image, and shedding liability and expanding monopoly rights through patents on non-inventions such as seed.

While using the term ‘science’, these war-based corporations attack independent science and independent scientists to keep and expand their empires. Corporate propaganda is their so-called science, and the science of biosafety by independent governments and scientists is branded “anti-science”.

Attack on knowledge, science and democracy

Independent scientists and journalists have been systematically attacked to maintain the lie that GMOs are the miracle panacea to feed the world and that GMOs are an invention that justifies patent monopolies. As a consequence we have a Monsanto media, Monsanto public relations parading as science and governments that have been hijacked by the corporations, defaming and belittling all

scientific evidence to continue imposing GMOs. Governments that made laws in accordance with international obligations to exclude patents on seed and patents on life and to protect biodiversity and prevent its biopiracy to protect their citizens, are now facing major attacks from the Monsantos of the world and the US government.

In India, Monsanto's illegitimate monopolies on BT (*Bacillus thuringiensis*) cotton

seeds and illegitimate control of seed has led to their control of 95% of the cotton, to increased seed prices, trapped farmers in debt and to some 300,000 farmers committing suicide. A task force appointed by the government of Maharashtra, the epicenter of BT cotton as well as farmer suicides, has shown that wherever there is BT there is suicides and has termed them "killer crops".

GMOs will inevitably contaminate non GM crops through pollination and wind, and with patents on genes and seeds, Monsanto has reversed the environment principle of 'polluter pays', by suing and ensuring that it is the polluted who pay. This is what happened with Percy Schmeiser in Canada and Steve Marsh in Australia. They have also sued hundreds of other farmers²⁸.

With the widespread recognition of the failure of BT and HT (herbicide tolerant) technologies, the gene giants are rushing to push new tools of genetic transformation and genetic engineering such as synthetic biology and gene editing. This to bypass the biosafety regulation of GMOs that people across the world are demanding. Vermont has been sued by Monsanto to prevent its GMO labelling law. Monsanto's attempt to introduce the DARK Act (Denying Americans the right to know) was only just recently rejected by the Senate.

Rogue corporations spreading lawlessness

If GMOs are as safe and as good as the corporations claim, they would declare their products loudly and clearly. Their refusal to do so is an implicit knowledge of their harmful effects, which is why they spend millions of dollars to counter negative findings such as the 2015 report of WHO attesting that Roundup/glyphosate is a probable carcinogen²⁹.

While Monsanto claims novelty to own seed and life it declares sameness and substantial equivalence to bypass biosafety regulations, which assesses harm to the environment and public health. This is ontological schizophrenia. The same organism cannot be a new invention and natural at the same time.

In the 20 years that patents on seed and life have been introduced by the chemical giants, today these companies have become the gene and seed giants. Armed with illegitimate patents on seed and life these multinationals began buying up smaller companies, shutting down public breeding thereby destroying seed sovereignty and people's food freedom.

Having contributed as much as 50% of greenhouse gases and climate change through a chemical and poison based agriculture, corporations are now stealing climate resistant traits that farmers have evolved over years to combat climate change. This is biopiracy of climate resilience, and more than 1500 patents have already been biopirated.

Philanthropy has also come into the game with Bill Gates and his Foundation who, in partnership with these giant profiteers, is carving out new territories with their poisons, under the guise of doing good for humanity³⁰.

Using computer software and through genomic mapping, Gates and the corporations are taking patents on what farmers have bred through the ages. The Gates Foundation funds DivSeek, a mega piracy program of the biodiversity of the world – it is in control of the world's gene banks, including

the collection of farmers' seeds held in the gene banks of CGIAR system. Bill Gates heavily invested his millions along with the Rockefeller Foundation in the frozen and static Svalbard Global Seed Vault in Norway. As much as 75% of global crop diversity exists outside the big institutional seed banks, and is held instead by some of the world's most marginal farmers, most of them women. Precious funding would be better put to supporting a living and self-sustaining agriculture, helping farmers save, breed, and sow their own seeds, the proven path to feeding the hungry of the world.

The toxic agenda of the war-based corporations and all-powerful foundations is based on false claims of innovation and invention of our seed, our heritage and life on earth, attempting to governments, and assailing those that refuse to buckle. The attack on sovereign governments has intensified in the last few months as we see in the case of India, Argentina and Brazil. Such assaults on democratically written laws and democratically shaped policies made in the public and national interest, is a preview of the investor state disputes that have now been introduced in the current TTIP and TPP trade agreements.

We are dealing with a destructive force that is taking out life forces wherever it can: If the corporations have their way our fragile web of life will be poisoned and broken, the diversity of species will be driven to extinction, and people will lose all freedoms to their seed, to their food, to their knowledge, their decisions and choices.



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- [2] <http://seedfreedom.info/the-corporate-war-against-the-planet-people-and-democracy/>
- [3] <http://www.truthwiki.org/ig-farben-pharmaceutical-conglomerate-1916-to-2015/>
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01 CHAPTER



HISTORY OF ROUNDUP & ROUNDUP READY CROPS

Glyphosate, the basic ingredient of the herbicide RoundUp produced by Monsanto, is the aminophosphonic acid analog of the natural amino acid glycine, first synthesized in 1950 and patented in 1964 by Stauffer Chemical company as a descaling agent to remove calcium and mineral deposits from pipes due to its chelating properties.¹ Glyphosate was then bought by Monsanto and patented as an herbicide in 1969.

In 1974 Monsanto entered it into the market as the active ingredient of the herbicide RoundUp², commercialized first in Malaysia and the UK and later in Canada. From the early 1980s onward, Monsanto heavily invested in biotechnology³, by which genes are transferred through recombinant DNA techniques⁴, mainly with the aim of producing herbicide tolerant crops seeds.

In 1996 crops genetically modified to be resistant to the herbicide RoundUp - the so-called "RoundUp Ready" (RR) crops, such as soybean, maize, and cotton - were finally introduced in the market. In the same period, the company lowered the retail price of RoundUp (years before glyphosate's patent expired in 2000), driving up demand. Far from affecting profits, Monsanto's gross profit increased by 90% between 1994 and 2000, in spite of a price decrease of 45% of the product RoundUp⁵. In addition, Monsanto applied royalties or "technology fee" on the sale price of its RoundUp Ready soy seeds to cover the use of its intellectual property⁶. It should be noted that RoundUp has always been presented as perfectly safe for humans since it first appeared on the market⁷. The extent of the falsehood of this narrative is outlined in the following chapters.

From the start the promotion of genetically modified seeds has constantly been supported by a widespread propaganda campaign based on the assumption that this new technology is the solution to all agricultural and food supply problems of the world, including a reduction in the use of chemical inputs⁸.

Indeed, genetic engineering was introduced with several promises such as fixing nitrogen, resisting drought, improving yield and 'feeding the world', which have contributed to the building of a multibillion-dollar industry now controlled by a handful of corporate giants. So far, only two simple characteristics account for all the GM crops in the world. Most are tolerant to broad-spectrum herbicides (HT)⁹, while the rest are engineered with Bt-toxins to kill insect pests.(Bt)¹⁰. For example, a great part of the Monsanto GE seeds today are resistant to a single herbicide, glyphosate. These herbicide-resistant seeds and glyphosate—marketed as RoundUp Ready by Monsanto—are sold together as a highly profitable, packaged system.

According to a 2016 study by Charles M. Benbrook, 56% of the world's total glyphosate used is applied to GM crops. In the US the use of glyphosate increased from 0.8 million pounds to 250 million

pounds 67 % of which occurred in just the last 10 years¹¹ Glyphosate based herbicides resistant crops globally account for 80% of the 120 million hectares of GM crops grown annually in the world. In the USA alone, 90% of soy and 70% of maize and cotton are glyphosate tolerant^[12,13]

Due to its widespread use, glyphosate is considered the most widely used agricultural chemical in history. Since its introduction 1.8 million tons have been applied to American fields, and 9.4 million tons have been applied globally¹⁴.

Some 56% of the total global usage of glyphosate actually is related with “RoundUp Ready” crops, that have tripled on cotton farms, doubled on soybeans and increased 39% on corn¹⁵. With regard to average annual increase in pounds of glyphosate per crop type, there has been an increase of 18.2 percent for cotton, 9.8 percent for soybean, and 4.3 percent for corn since the introduction of RoundUp Ready crops¹⁶. This massive increase of glyphosate linked with the development of RR crops led the Union of Concerned Scientists to estimate “an increase in overall herbicide use at about 383 million pounds higher¹⁷ than would have been the case without RoundUp Ready crops”¹⁸.



Photo: United Soybean Board (Flickr)

The intensive use of RoundUp has also greatly affected South American countries where the past decades have seen a massive expansion of RR soybean monoculture. During the 1990s countries like Argentina decided to adopt GM Soybean with the aim of restructuring its economy around Soy export for the European market. It is today a toxic economy characterized by 19 million hectares of GM soy planted and sprayed with 200 million litres of RoundUp¹⁹. In Brazil 25% of all pesticides are used in soybean fields, where pesticide use has increased at a rate of 22% per year²⁰.

Despite claims that genetically modified organisms (GMOs) would lower the levels of chemicals, pesticides and herbicides use, this has not been the case and generating great concern at all levels because of the negative impacts of these chemicals both on ecosystems and human health²¹.

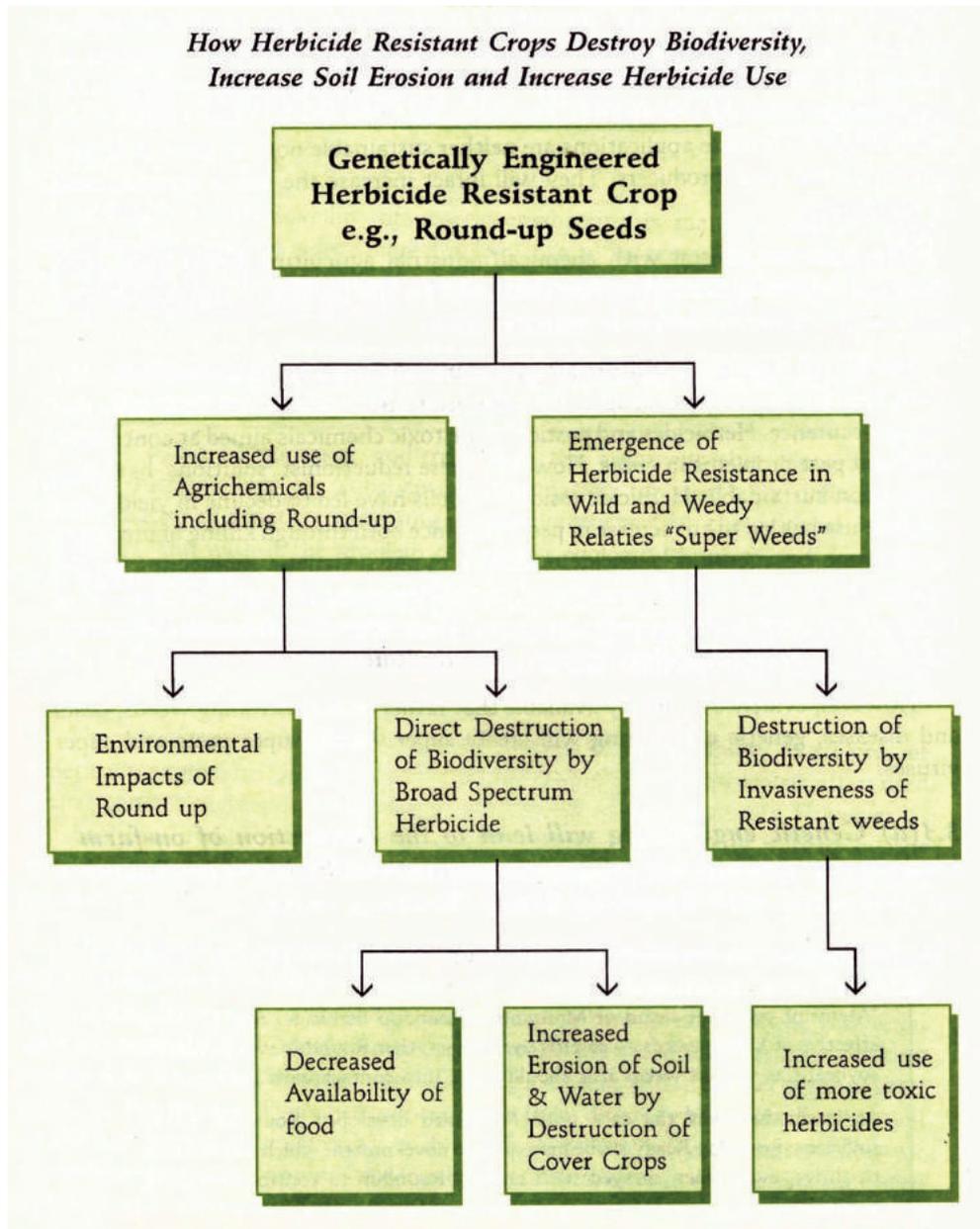
A FAILED TECHNOLOGY



The dramatic increase of RoundUp since the introduction of RoundUp Ready, GE herbicide resistant crops on the market, is due to the fact that targeted weeds started to develop resistance which mainly occurs as a result of three different practices: monocultures, over reliance on a single herbicide and neglect of other weed control practices²².

As pointed out by Dr Salvatore Ceccarelli, in a 2014 report on “GM Crops, Organic Agriculture and Breeding for Sustainability” GMOs change the environment surrounding the organisms they intend to control²³. Therefore, the resistance they induce in weeds can quite simply be explained by the fundamental theorem of Natural Selection, the same process by which bacteria evolve resistance to antibiotics²⁴.

*How Herbicide Resistant Crops Destroy Biodiversity,
Increase Soil Erosion and Increase Herbicide Use*



Infographic: Navdanya (Betting on Biodiversity, 1999)

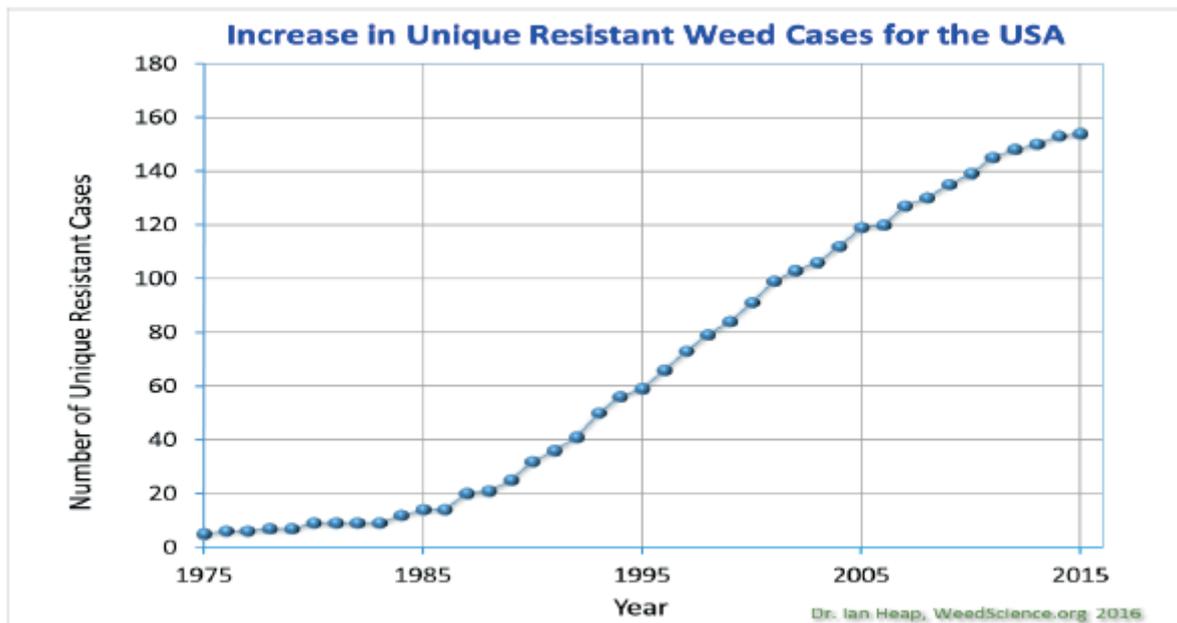
As an example of weed resistance, US farmer fields have been witnessing uncontrolled spread of “superweeds” like amaranth, especially in the south-eastern states, where approximately 92% of RR cotton and soybeans are infested²⁵. As a consequence, farmers have started to increase the use of pesticides by combining glyphosate products with 2,4-D active substance produced by Dow AgroSciences (a subsidiary of Dow Chemical), while Monsanto started to market new crops resistant to both glyphosate and Dicamba, branded as Xtend TM²⁶. Dicamba based herbicides and Dicamba resistant seeds have been widely adopted in the US Midwest for the 2017 soy season, but a widespread problem caused by the product’s volatility is mounting as neighbouring non Dicamba resistant soybean fields as well as other crops and vegetation have been reporting Dicamba related injuries throughout an impressively wide area of the US. (read more about Dicamba damage in the box below).

As famously stated by Einstein “no problem can be solved with the same consciousness that created it”²⁷. But solutions proposed by agrochemical corporations to solve the increase of weed resistance are based on their insistence



of using and combining more pesticides, therefore still more use of chemicals, which lead to the so called “Pesticides or Chemical Treadmill”, where “farmers are forced to use more and more — and increasingly toxic — chemicals to control weeds that develop resistance to pesticides”²⁸.

Figure: Increase in weed resistance in the US (1975 - 2015)²⁹



Source: Heap, I. The International Survey of Herbicide Resistant Weeds. February 7, 2016.

The phenomenon of living organisms developing resistance to the kind of “aggression” engineered within GMOs, is not confined to herbicide tolerant crops. The second most popular type of GMOs are those developed with the Bt technology, where a particular strain of *Bacillus thuringiensis* is inserted in the seed causing it to produce its own insecticide. This is the technology which was supposed to control the bollworm pest in Indian cotton, which instead has become resistant to Bt cotton, causing enormous devastation for Indian farmers. In addition new pests have emerged, forcing farmers to use even more pesticides.



Photo: Naturaleza de Derechos

ARGENTINA AND SOY MONOCULTURES

Argentina is one of the countries that has experienced one of the most devastating impacts of industrial agriculture where, since 1990, an intensive agricultural model, based on monocultures and on the use of GMOs and chemicals was imposed. In 1996, the government of Argentina approved the cultivation of transgenic soybeans, thus opening the door to the market of GMO soy produced by Monsanto, RoundUp Ready, resistant to RoundUp³⁰. These glyphosate based pesticides are applied through low-altitude airplanes, carpet-bombing not only farmers fields but also agricultural workers and villagers in the adjacent areas. From 7 million in 2003, the production of transgenic soy increased to 20 million in 2010³¹, and the harm, both to humans and the environment, caused by the intensive use of agrochemicals has revealed over time the true costs of this toxic industrial agricultural model. The “Human Cost of Agrotoxics” is portrayed in the pictures of Argentine photographer Pablo Piovano³², who denounces the consequences of this agricultural system in the worst affected areas of Argentina.

GLYPHOSATE USED AS PRE-HARVEST CROP DESICCANT

The use of RoundUp goes beyond weed control and is also used as a pre-harvest technique, as it works as a desiccant. This technique was first applied in Scotland in the 1980s, allowing farmers to harvest crops as much as two weeks earlier than they normally would. The toxic substance is sprayed on wheat seed when it is already developed, thus absorbing the herbicide directly and leading to an accumulation of the substance in the crop. This practice is common especially in wheat-growing areas of North America such as the upper Midwestern U.S. and Canadian provinces such as Saskatchewan and Manitoba.

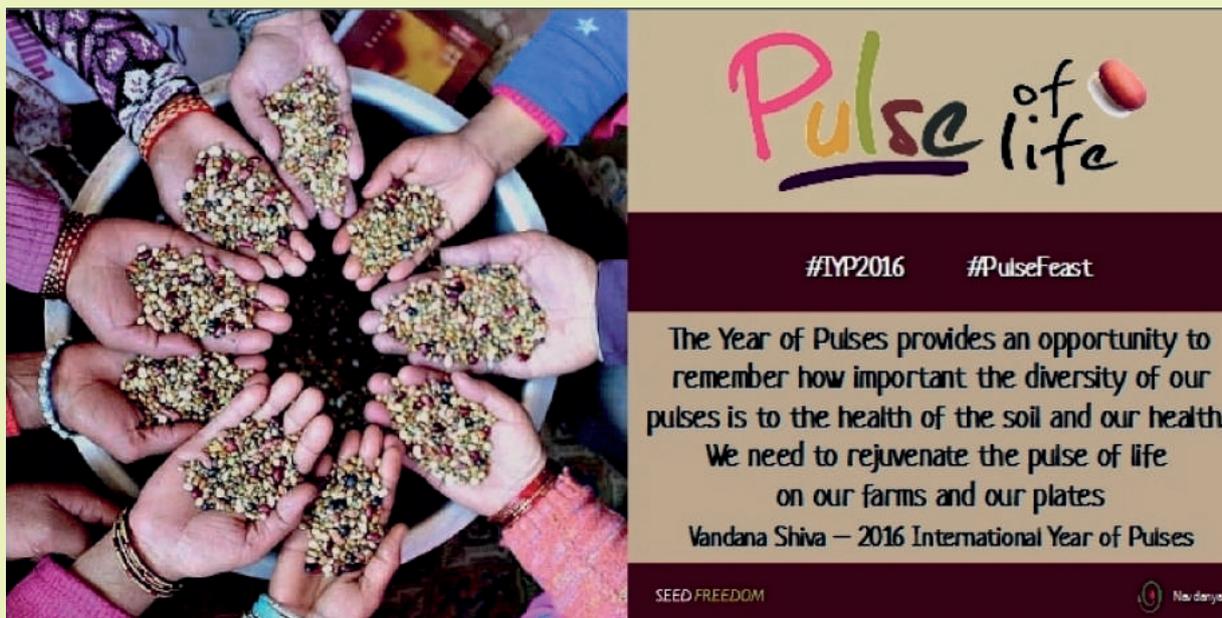
Other crops on which glyphosate is used to desiccate include: lentils, peas, non-GMO soybeans, corn, flax, rye, triticale, buckwheat, millet, canola, sugar beets, potatoes and sunflowers³³.

These glyphosate - laced products are then exported to various parts of the world thus also affecting other countries, where imports are often subsidized by global and national market policies.



Photo: Anselm Hook (Flickr)

India's originally abundant pulses production, its diversity and its use in mixed cropping practices had a major decline with the advent of the Green Revolution and its monocultures of rice and wheat supported by chemical inputs³⁴. The consequence of an artificially created scarcity made India the biggest importer of pulses, in particular from US and Canada, where the use of glyphosate as pre-harvest desiccant is common in the coldest climate areas³⁵. This resulted in a heavy loss of pulses biodiversity, as well as the disappearance of an important sector of an Indian local economy and in the poisoning of the population, forced to consume these imported products.



Graphic Navdanya



Photo: Manlio Masucci

In Italy 4.8 million tons of wheat and 2.3 tons of durum wheat are imported in for pasta production. Of these, over half (a total of 1.2 million tons) are imported from Canada. Driven by globalization policies, the market is pushing Italian farmers to struggle with falling wheat prices, despite the fact that Italy is still Europe's largest producer of durum wheat for pasta production with 4.8 million tonnes, about 60% of the market, cultivated on an area of about 1.3 million hectares, as stated by a recent dossier published by the Stop TTIP Italia Campaign³⁶. The situation would only get worse with the approval CETA - (Comprehensive Economic and Trade Agreement between Europe and Canada), as it would see the dumping of glyphosate sprayed Canadian wheat on the on European economies and have a huge impact on the already suffering Italian wheat production and consequently on pasta and all its derivative products [^{37,38}], while forcing the Italian population to ingest more poisons.

Throughout 2016 and 2017 a widespread opposition has risen to CETA in Italy to put pressure on the Italian government not to ratify the Free Trade Agreement, which was approved in February 2017 by the EU Parliament, but still needs the final approval of member states in order to come into effect. As is common in all the new generation of free trade agreements, the secretive negotiations format of CETA would impact all EU environmental, social, food standard regulations by triggering a "downward harmonization" of standards in terms of environmental and animal health protection, public health, food safety and consumer information³⁹.

At a Conference in Rome on "Poisons at the Door - Food, health and environmental risks in the new global market", Dr. Vandana Shiva declared: "These agreements are basically allowing the dumping of poor quality food or heavily contaminated by hazardous chemical substances on any country, to the point of subverting the balance of local supply chains and of national and local economies. These rules are dictated by a 'Poison Cartel' of giant transnational agribusiness corporations, that have brought us GMOs and pesticides, disease and malnutrition, and the subversion of the democratic principles of our civilization. We will not be forced to be dominated by these poisoners. Let us write together the new rules of economy and trade in which there is respect for the planet and for human rights. We cannot leave this policy making power in the hands of poison producer. If we do not set rules that are ethical and ecological and fair, with a vision towards the future, they will continue to prevail."

GMO MYTHS

Building on the propaganda about the benefits of chemical agriculture (See "The Myth of Safe Pesticides" below), the agrochemical/biotechnology industry has promoted in the last decades the false promise that its genetically engineered crops would feed the world, produce higher yields, resist climate change and reduce the use of pesticides. But none of these promises has been fulfilled,

- The vast majority of GM crops, such as corn and soy, are primarily used as animal feed or converted into biofuels⁴⁰
- Evidence shows that there has been no significant increase in yields⁴¹
- Indigenous seeds are more resilient and practices of seed breeding in synergy with any natural environment conditions maintain the evolutionary potential of crops, which is needed to cope with climate change⁴²

Pesticides use has increased with the introduction of GM crops, due to weeds and pests developing resistance and needing additional or more powerful chemical.

Further common myths about GMOs, which are widely spread and promoted by an aggressive PR campaign by the biotech industry have been debunked in the report “GMO Myths and Truths: A Citizen’s Guide to the Evidence on the Safety and Efficacy of Genetically Modified Crops and Foods”⁴³, by Claire Robinson, Michael Antoniou PhD and John Fagan PhD. It argues that:

- GMOs are not an extension of natural breeding, they are laboratory-made and pose different risks from non-GM crops
- GMOs are neither safe to eat nor adequately regulated for safety. They can be toxic, allergenic or less nutritious than their natural counterparts
- GMOs neither benefit the environment nor can help solve problems caused by climate change. They harm soil quality, disrupt ecosystems, reduce biodiversity and do not offer effective solutions to climate change
- GMOs do not reduce energy use, but are as energy-hungry as any other chemically-farmed crops

Furthermore, as Dr. Vandana Shiva has often pointed out⁴⁴

- Genetic engineering does not create a plant or an organism and therefore GMOs are not an “invention” of corporations that can be patented and owned, it is merely a tool to transfer genes across species. Living organisms are self-organizing, self-replicating systems. They make themselves. Unlike machines, they cannot be engineered.
- Genetic engineering is not more accurate and precise than conventional breeding. The introduction of genes from unrelated species is a blind technology, neither accurate nor precise. When genes are introduced into the cells of a plant using a gene gun, it is not known if the cell has absorbed the gene or not.
- Genetic engineering is based on an obsolete paradigm of genetic determinism, a linear and deterministic flow of information from genes, which are called “master molecules”, to proteins. Genetic determinism assumes that genes are atoms of biological determinism, with one gene carrying one trait, and determining the traits in an organism. But these are assumptions that come from the idea of control and domination; this is patriarchal ideology, not science. Cutting-edge science teaches us that these assumptions are false. Genes are fluid, not fixed⁴⁵. Each gene contributes to multiple traits; each trait is an expression of many genes acting in concert.
- There is no free choice with GMOs. The myth of “free choice” begins with a “free market” and “free trade.” When a handful of transnational corporations control the seed market, it is not a free market; it is a cartel. When corporations write the rules of “free trade,” it is corporate dictatorship, not free trade. When enforcing patents and intellectual property rights (IPR) laws written by themselves, corporations prevent farmers from saving seed; it is not “free choice”, it is seed slavery.

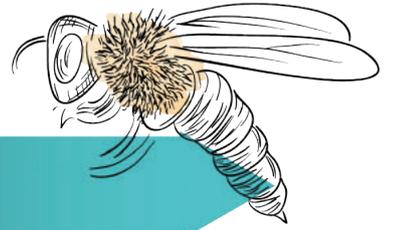


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02 CHAPTER



Monsanto Tribunal, Marcelo Firpo, ABRASCO, Brazil. Photo : Navdanya

“It is impossible to produce monocultures without destroying biodiversity. The problem is the relationship between agribusinesses and politics. Agribusinesses needs non-democratic regimes in order to be allowed to violate human rights. Health, for example, is not a question of contamination, health is a human right, health is justice, health is the right to our future. I want to underline this because real figures can be 50 time higher than official data on cases of deaths from agro-toxic poisoning. Currently in Brazil many rural areas have an index of cancer higher than in urban bases and the most important factor is the high exposure to agro-toxics. Moreover, Monsanto currently have agro toxics with 3 active ingredients in Brazil that are not allowed in the European Union.”

— Marcelo Firpo, ABRASCO, Brazil - People’s Assembly, The Hague, October 2016.



IMPACT ON ENVIRONMENT

Monsanto and the agrotoxic industry insist on claiming that glyphosate is not only safe for humans but it is biodegradable and safe for the environment despite several independent studies showing its adverse effects. Here are two such claims:

“Remember that environmentally friendly Roundup herbicide is biodegradable. It won’t build up in the soil so you can use Roundup with confidence along customers’ driveways, sidewalks and fences. This non-residual herbicide will not wash or leach in the soil. It stays where you apply it” and “Glyphosate is less toxic to rats than table salt following acute oral ingestion.” Monsanto was sued for this last for false advertising and forced to remove these claims from its labels.¹

The resistance against RoundUp until recently has largely focussed on its active ingredient Glyphosate. However independent studies on toxicity have shown that it is not only glyphosate which is dangerous but also its co-formulants, which include a number of other substances, including the so-called “inert” ingredients, such as the surfactant POEA (polyoxyethylene alkylamine) which has often shown to be more toxic than glyphosate itself².



Photo: Jeff Vanuga

Together with glyphosate and POEA, its primary acid AMPA (metabolite aminomethylphosphonic acid) it is among the most frequently detected substances in ground and surface waters and in some marine environments. These chemical substances cause high levels of water and soil contamination, resulting in lower water quality and soil degradation³.

A recent US Geological Survey study sampled waterways in 38 states and found glyphosate and AMPA in the majority of rivers, streams, ditches, and wastewater treatment plant outfalls tested. Glyphosate was also found in about 70 percent of rainfall samples⁴. Independent studies on the effect of RoundUp



Photo of a 2009 algal bloom on the southeast shore of Pelee Island, Ontario. Photo: Tom Archer

on aquatic ecosystems show that it is related with alteration of natural communities and ecological balance leading to disastrous algal blooms, with some studies showing a 70% reduction of tadpole species and a 40% increase in algae. Many negative effects have been analysed on aquatic animals, especially amphibians, as one of the most vulnerable species, such as: reproductive abnormalities, developmental abnormalities and malformations, DNA damage, immune effects, oxidative stress, modified enzyme activity, decreased capacity to cope with stress and maintain homeostasis, altered behaviour, and impaired olfaction⁵.

Studies in the US indicate glyphosate residues detected in soils of crop production fields range from 25 to 1000 $\mu\text{g kg}^{-1}$ soil⁶. Moreover, glyphosate tends to accumulate in soil, both because of repeated applications during any crop season, and also because 95% of any applied dose is absorbed by the soil itself or by the roots of the plant, while only 5% gets to the targeted weed. In addition, due to the considerable amounts of glyphosate and AMPA detected in soils⁷, further concerns about possible negative effects on non-GE crops production have been raised, indicating the need for long term monitoring of glyphosate and AMPA soil residues in cropping systems in areas of high glyphosate use.

A pilot study on soil contamination by the Joint Research Centre of the European Commission and Wageningen University⁸ in which soil samples have been collected in various parts of Europe have found pesticide traces in over 66% of the samples analyzed, while only 34% of the samples were clean. The most commonly recognized substances are glyphosate (46%), DDT (25%) and fungicide products (24%). The study points out that Glyphosate and AMPA (Aminomethylphosphonic acid), can concentrate on very small soil particles that are easily eroded and transported by wind and water. This shows that there is actual risk of contamination even at very long distances. Based on the evidence Professor Violette Geissen, Coordinator of the project, has called for more

appropriate international standards for pesticides residues long term persistence and impact in the soil.

Prof. Don Huber at Purdue University has shown the deep environmental impacts of RoundUp conjunct with RR crops, such as negative long-term impact on the system of plant nutrition, predisposition to diseases and disease interaction, as glyphosate sprayed plants defences are weakened while the pathogen population and its virulence increase. The soil microflora is modified and soil micronutrients involved in disease resistance are immobilized by the chemical substance while it accumulates in the root, shoot, and reproductive tissues of the plant, altering physiological efficiency⁹. He states "because of its persistence and broad impact on the physical-chemical and biological environment, glyphosate damage is often subtle and attributed to other causes such as drought, cool soils, deep seeding, high temperatures, crop residues, water fluctuations, etc."¹⁰

Another recent study has empirically proved that between 1994 – 2003 glyphosate contributed to population decline of adult monarch butterflies due to its ability to reduce milkweed plants [¹¹ .¹²].

Glyphosate's impact on the environment also affects the overall balance of ecosystems, affecting crop production, because of the development of antibiotic resistance in pests and harmful bacteria, causing an increase in plant disease both in fields where the product is applied as well as in surrounding areas. Glyphosate also impacts organisms of animals, which are crucial for digestion and disease resistance, and is leading to the decimation of bees, frogs, lizard and other animals, including birds and mammals¹³.



Changeover to Non-GMO Soya, experiences in Denmark (Ib Borup Pedersen). Infographic by Malina

The impact of RoundUp connected with RR crops on animals has also been analysed by Monika Krüger, a German veterinarian, in a study related to malformed piglets by the Danish farmer Ib Borup Pedersen¹⁴. The analysis revealed high rates of glyphosate concentration in different organs, linked with GM soy animal feed, that leads to a possible correlation between the herbicide, the GM crops and the malformations¹⁵.

TABLE: Impact of glyphosate on plant nutrition and disease - source (Johal and Huber, 2009)

1. Glyphosate is a strong mineral chelator (for Ca, Co, Cu, Fe, Mn, Mg, Ni, Zn) – in the spray tank, in soil and in plants.
2. It is rapidly absorbed by roots, stems, and leaves, and moves systemically throughout the plant (normal and RR).
3. Accumulates in meristematic tissues (root, shoot, legume nodules, and reproductive sites) of normal and RR plants.
4. Inhibits EPSPS in the Shikimate metabolic pathway and many other plant essential enzymes.
5. Increases susceptibility to drought and disease.
6. Non-specific herbicidal activity (broad-spectrum weed control)
7. Some of the applied glyphosate is exuded from roots into soil.
8. Immobilized in soil by chelating with soil cations (Ca, Co, Cu, Fe, Mg, Mn, Ni, Zn).
9. Persists and accumulates in soil and plants for extended periods (years) – it is not readily 'biodegradable,' but is immobilized by chelation generally.
10. Desorbed from soil particles by phosphorus and is available for root uptake by all plants.
11. Toxic to soil organisms that facilitate nutrient access, availability, or absorption of nutrients.
12. Inhibits the uptake and translocation of Fe, Mn, and Zn at very low, non-herbicidal rates.
13. Stimulates soilborne pathogenic and other soil microbes to reduce nutrient availability.
14. Reduces secondary cell wall formation and lignin in RR and non-RR plants.
15. Inhibits nitrogen fixation by chelating Ni for ureide synthesis and is toxic to Rhizobiaceae.
16. Reduces physiological availability and concentration of Ca, Cu, Fe, K, Mg, Mn, and Zn in plant tissues and seed.
17. Residual soil activity can damage plants through root uptake at 1/40th of herbicidal concentrations.
18. Increases mycotoxins in stems, straw, grain, and fruit.
19. Reduces photosynthesis (CO₂ fixation).
20. Causes fruit (bud) drop and other hormonal effects.
21. Accumulates in food and feed products to enter the food chain as a concern for food safety





Photo: wuzefe

MONOCULTURES AND BIODIVERSITY EROSION

The current industrial and intensive cultivation system of today's agri-food production model dots of calls for increasingly frequent use of monocultures, patented seeds and agrototoxic substances.

Monocultures involve intensive cultivation of a single plant species on a vast territory. In order to maximize crop yields and shorten harvest times, monocultures require large quantities of fertilizers and pesticides, as well as modified seeds. This model can be considered among the main causes of the global loss of biodiversity and has low resilience and huge vulnerabilities to climate change. According to the FAO, more than 90% of all plant variety has disappeared over the last 80 years¹⁶. Moreover, with the introduction of GMOs, four primary crops — corn, soy, canola and cotton — have all been grown at the cost of other crops for the royalties they generate for every acre planted¹⁷.

Even more alarming is the fact that monocultures are increasingly replacing areas covered by forests, which are cut down to make room for agricultural fields, expelling indigenous communities and small farmers from their lands. Besides uprooting local communities from their territories and along with their system of traditional agriculture this model also imposes an increasingly standardized diet to the detriment of both biodiversity and typical local diets, which are compromised by the loss of traditional crops of indigenous varieties.

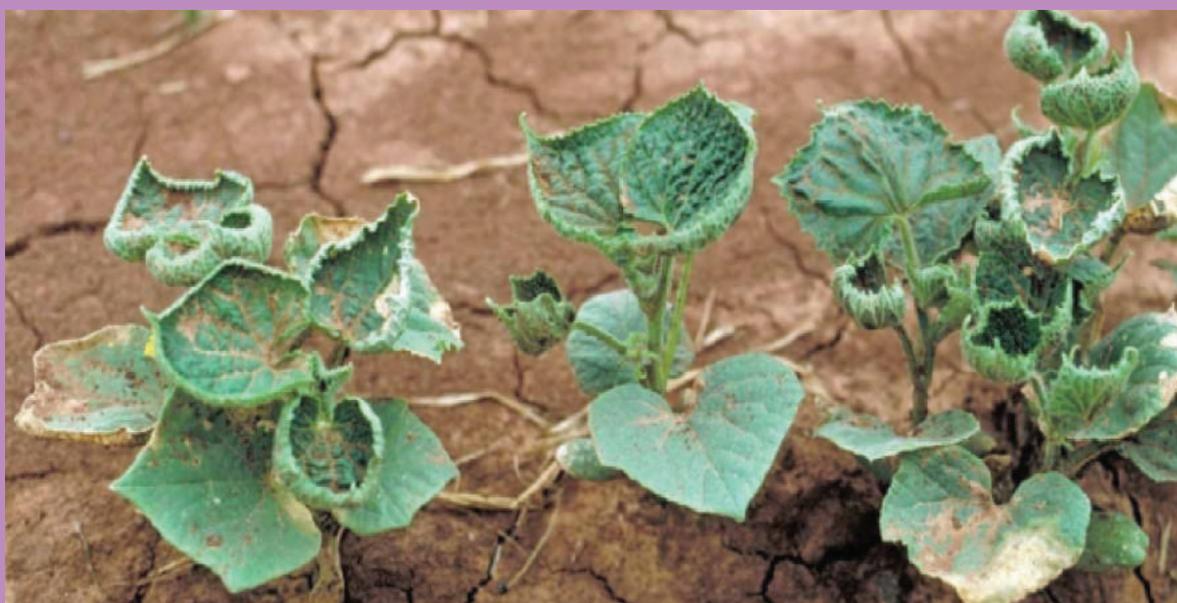
Monocultures, through intensive cultivation of patented seeds, mean huge profits for a few mega corporations and control of the global seed market.



DICAMBA, THE LATEST THREAT

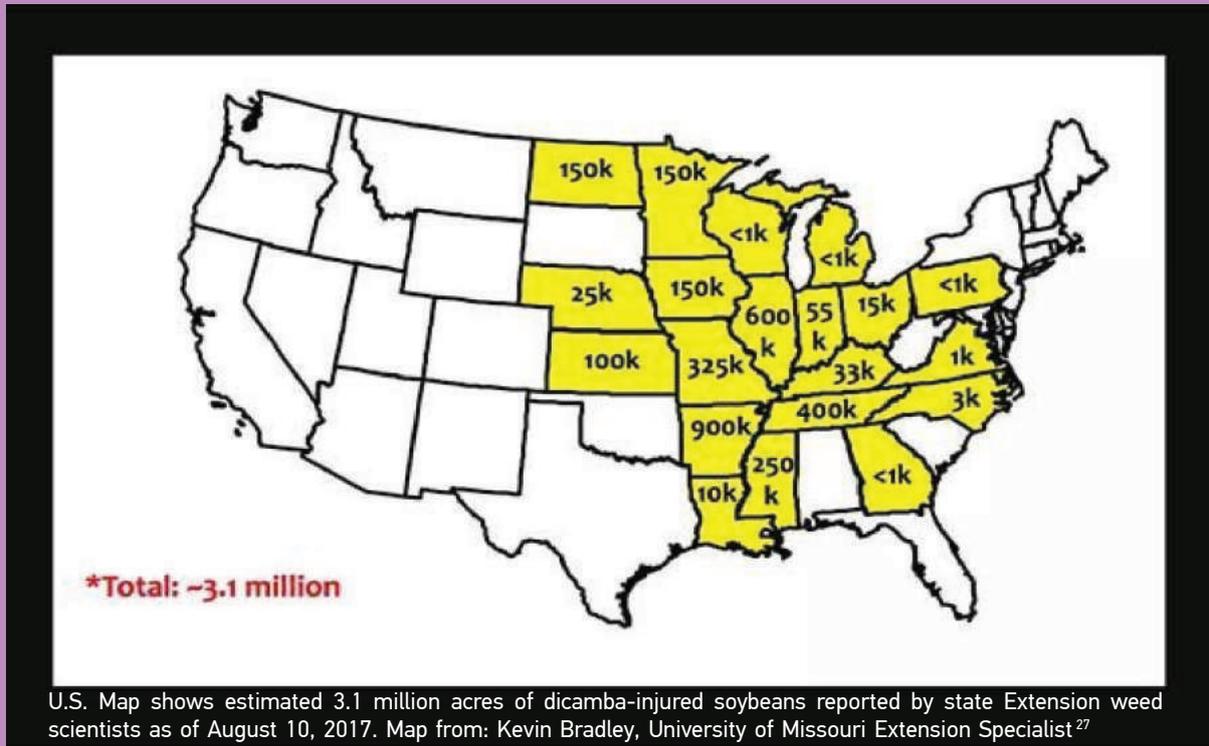
In 2017 farmers across the US Midwest planted a new variety of GM soybean seeds, tolerant to the herbicide Dicamba and marketed by agrochemical companies Monsanto, Dow, DuPont and BASF.

GM DT (Dicamba Tolerant) seeds have been adopted by a great number of farmers as a solution to the problem of a new breed of super-weeds¹⁸, which have evolved to be resistant to glyphosate based herbicides spraying, still the most used herbicide in the world. But those farmers who have not turned to the new technology and still use glyphosate based herbicides, started reporting that Dicamba is traveling from other fields and severely affecting their crops. One of the most disturbing twists of this situation is that many farmers see themselves as being forced to adopt the new technology in order not to lose their yield¹⁹.



Dicamba has been used since the 1960's and known to be volatile, but Monsanto managed to obtain EPA (Environmental Protection Agency) approval for its XtendiMax herbicide (which contains both glyphosate and Dicamba) in November 2016²⁰. This in spite of the fact that already before the approval, Texas grape growers and Missouri peach farmers complained that their own crops were destroyed after their neighbours' dicamba had drifted to their orchards. Cases of trees, fruits and vegetables left cupped and distorted when exposed to the chemical have been reported throughout the US, and other crops and are being investigated [21, 22]. Not surprisingly Dicamba manufactures are blaming the farmers, who they say are misusing either the product or the spraying tools, etc...²³. It turned out that Monsanto denied requests by university researchers to study its XtendiMax with VaporGrip for volatility, which is a measure of its tendency to vaporize and drift across fields - as reported by Jason Norsworthy at the University of Arkansas, Kevin Bradley at the University of Missouri and Aaron Hager at the University of Illinois²⁴. New tests however by the University of Arkansas have confirmed that this new generation of dicamba herbicides are indeed volatile, though less volatile than previous formulations²⁵.

By mid August 2017 more than 2,200 complaints for damages caused by dicamba had been filed in the U.S. since the beginning of the 2017 season²⁶, particularly in Arkansas, Illinois, Missouri, Ohio, and Tennessee.



GENETIC CONTAMINATION

Genetic contamination is a substantial threat to biodiversity and the environment which can occur through pollination whenever there is wild, related flora growing nearby GE crops. In addition, non-GE or organic crops are growing in neighbouring fields, they can be pollinated by the GE crop. It may also happen that a semi-wild, weed or 'feral' population of GE plants develops if the GE crop survives in the agricultural or natural environment. Furthermore, genetic contamination can occur through micro-organisms in the soil or the intestines of animals eating the GE crop, which have acquired the foreign genes. Essentially, environmental damage caused by genetically engineered crops cannot be confined to the original habitat in which they are first introduced²⁸.

Most importantly, the release of specific GE crops in "centres of origin" of those same crops represents a threat to the future of biodiversity at a global level²⁹. From these areas, the world derives the genetic diversity needed to maintain its production in case of new plagues and climatic challenges.

At present:

- India has lost most of its cotton indigenous seed varieties because of contamination from GE Bt Cotton³⁰
- In Mexico, the "cradle of corn", its immensely rich biodiversity is threatened by Monsanto's GE corn³¹
- Bangladesh is a centre of origin of eggplant (brinjal) and is now facing genetic contamination from the GM Bt varieties through natural cross-pollination³²..
- Again in India, the biodiversity of native mustard is threatened by the release of GM mustard would pose a high risk of contamination of mustard germplasm in a primary centre of cultural diversity³³..

Ironically, often, the farmer whose crops have been contaminated finds himself sued by biotech seed corporations for patent infringement cases, as happened in the case of Percy Schmeiser³⁴. (see box below).



CANADA - BIOTECH SEED CORPORATIONS SUE FARMERS WITH PATENT INFRINGEMENT CASES AFTER CONTAMINATION



People's Assembly, The Hague, October 2016 - Fernando Cabaleiro, Percy and Louse Schmeiser, Dr Vandana Shiva. Photo: Navdanya

Canadian canola farmer, Percy Schmeiser, was sued by Monsanto for patent infringement in 1998, after his fields were found to contain Monsanto's patented GM canola. Rather than submit to Monsanto's bullying, he fought back and has since been fighting for farmer's rights³⁵.

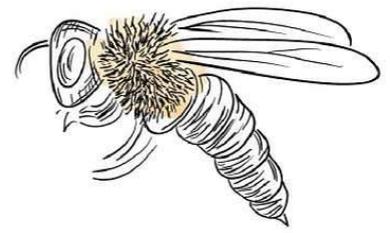
GMOs, mainly canola, cotton, soya, and corn were introduced into Western Canada in 1996 which led to devastating economic and environmental issues, due to property law implications and the amount of chemicals which were introduced. Appearing as a witness at the Monsanto Tribunal in the Hague, he spoke of the strong-arm tactics Monsanto uses against farmers: "Imagine the fear in a farm family when you get an extortion letter from a billion dollar company, telling you to send them \$500K because they think you're growing their patented crops without their agreement". At the time Monsanto was even running advertisements in newspapers inviting farmers to report their neighbours if they thought they were growing Monsanto's crops without a patent contract and offering rewards for doing so. Schmeiser described how Monsanto uses the culture of fear backed up by an intense investigation, which can include former police officers on their payroll, as well as threatening strangers patrolling their property at all hours of the day or night. "Farmers are too scared to say anything or even try to take Monsanto to court, something very few farmers have the means to do anyway. My own 10 year court case victory against Monsanto was important to me not because of the compensation money – which was minimal – but because finally it created a precedent, namely that if you contaminate, you must pay for the damages you do and that there is something you can do to fight back".

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03 CHAPTER



Andre Leu, IFOAM Organics International. Photo: Manlio Masucci

“Glyphosate is a pesticide that kills everything. Testing shows that glyphosate and its main metabolite AMPA are found in: creeks, rivers, rainfall, air and soil. In human breast milk and the placenta, in the urine of most people tested, in beer, bread and many foods, in vaccines. If you don’t eat exclusively organic food, we all have glyphosate in our bodies. Of greatest concern are children because they do not have the enzymes in their liver and metabolites that will break down glyphosate. Studies have found that there is no safe level of glyphosate in children. Regulators are using non-peer reviewed science that is based on commercial data, classified as confidential. The independent science that is published proves that glyphosate is highly dangerous.”

— Andre Leu, IFOAM Organics International - People’s Assembly, The Hague, October 2016.



IMPACT ON HEALTH

Looking at the impact of agro-chemicals on health, we remind readers that Glyphosate is the most widely used agricultural chemical in history.

Contrary to the prevailing myth that Glyphosate is harmless, concerned scientists and citizens have been declaring for years that independent studies and experience in the field point to the fact that the opposite is true. This concern was confirmed in 2015 when the International Agency for Research on Cancer (IARC) of the World Health Organization (WHO) determined that Glyphosate, the active ingredient in Monsanto's RoundUp herbicide, was probably carcinogenic to humans¹.

Since 1974 when Monsanto introduced the herbicide into the market, the global use of glyphosate is estimated to have reached 8.6 billion kilograms, 19% of which, some 1.6 billion kilograms, just in the U.S.².

Numerous independent studies over the years, which have had little, if any, media coverage, have investigated the risks associated with prolonged use of glyphosate based herbicides³.

Glyphosate is associated with a wide range of illnesses, including cancer, genetic damage, liver and kidney damage, to name a few⁴. Emerging pathologies have indicated the connection with different types of cancer – in particular Non-Hodgkin Lymphoma⁵. It is also considered to be an endocrine disruptor with effects on the reproductive system, gestation and growth of the unborn child⁶. Exposure to glyphosate-based products has been associated with the onset of growth disorders, spontaneous abortion, semen abnormalities, and decreased sperm count⁷.

A study by Paul Winchester found that mothers with high levels of glyphosate in urine have shorter pregnancy and children with less weight at birth, which may result in lower cognitive abilities in the age of development and higher risk of metabolic syndromes⁸. Also of note, glyphosate was found in the urine of 93% of consumers undergoing toxicological investigation during the project, launched in 2015, by the University of San Francisco - California (UCSF).



Round Up RoundUp

What is RoundUp?

RoundUp is a highly toxic herbicide made by Monsanto. The active ingredient in RoundUp is Glyphosate. RoundUp sales around the world are approximated at **US\$6 Billion annually** and projected to be worth US\$ 8.79 Billion by 2019 due to demand created by the company's proprietary **RoundUp Ready** genetically modified crops. The sole purpose of these RoundUp Ready crops is to drive up sales of RoundUp

RoundUp Kills Pollinators

"the population of monarchs that completes the North American migration and spends winter in Mexico has declined by more than 90 percent,"
-National Resources Defense Council

Federal approval of the key ingredient in Monsanto's Roundup has caused the monarch butterfly population to plummet 90 percent since 1997.

<http://www.courthousenews.com/2015/03/02/environmentalists-link-plunge-of-monarch-butterfly-to-herbicide.htm>



RoundUp Runoff is Destroying the Oceans

Round-Up goes hand-in-hand with chemical fertilisers and GM crops. The combination leaches into ground water and eventually finding it's way to oceans- creating 'Dead-Zones'

There's even an aptly named variant of Glyphosate called Dead Zone



RoundUp Destroys the Soil

RoundUp destroys all life in the soil. It kills all microbes that would typically help in plant growth - by providing nutrients- and protect the plants from diseases. RoundUp triggers over 40 plant diseases.

<http://www.responsibletechnology.org/posts/monsanto-s-roundup-triggers-over-40-plant-diseases/>

RoundUp and GM crops are a recipe for disaster

Genetically modified crops do not have greater yield nor do they have greater nutrition. Those traits come from the plant that RoundUp Resistance and Bt-toxin traits and forced into. All GM crops do is allow for unrestricted use of RoundUp rendering the soil dead, devastating biodiversity and causing death and diseases in plants, animals and human beings. It is not in the interest of Monsanto to feed the world or reduce the use of RoundUp.

For the sowing season of 2010, in the US, Monsanto reduced the price of RoundUp by 50%. The price decrease coupled with restructuring of the product value proposition resulted in an increase of gross profit by 46% in 2010 due to increased volume. Did the US obtain more farmland or did Monsanto force farmers to use almost 3 times the RoundUp that was used in 2009? In India, Monsanto's net sales of RoundUp for Financial Year 2013-14 were ₹208.89 crores, up by ₹69.86 crores (50%) over the Financial Year 2012-13 net sales of ₹139.03 crores. This increase, according to Monsanto is due to higher volumes. Reducing chemical use doesn't seem to be a priority for Monsanto.

<http://www.viglafjournal.com/pricing/2012/06/monsanto-the-global-glyphosate-market-case-study/>

RoundUp is dangerous!

CANCER

Exposure to Glyphosate has been shown to cause **tumours** of the mammary glands in rats. The International Agency for Research on Cancer has linked Glyphosate exposure to cancer. RoundUp is many times **more toxic** than Glyphosate alone.



[http://www.thelancet.com/journals/lanonc/article/PIIS1470-2045\(15\)70134-8/abstract](http://www.thelancet.com/journals/lanonc/article/PIIS1470-2045(15)70134-8/abstract)

KIDNEY FAILURE

On the island of Sri Lanka, 20,000 people have died due to kidney failure attributed to Glyphosate exposure.

<http://www.lankabusinessonline.com/news/sri-lanka-kidney-disease-linked-to-glyphosate-phosphate->



BIRTH DEFECTS

<http://overgrowthesystem.com/argentina-the-country-that-monsanto-poisoned-photo-essay/>
Argentina has seen a rise in birth defects, cancers, kidney failures, infertility and various other diseases in an otherwise healthy people due to unchecked use of RoundUp.

DISRUPTS ENDOCRINE SYSTEM

The Endocrine system regulates metabolism, growth and development, tissue function, sexual function, reproduction, sleep, and mood, among other things.

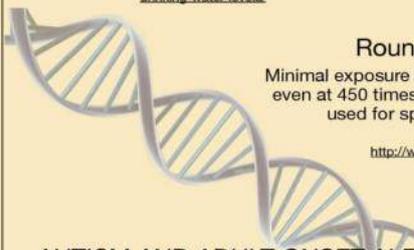
Glyphosate alone wreaks havoc on the endocrine system at levels permitted for drinking water. RoundUp is even more toxic at the same concentration levels.

<http://www.gmo-evidence.com/dr-young-roundup-herbicide-is-endocrine-disruptor-in-human-cells-at-drinking-water-levels/>

RoundUp DAMAGES DNA

Minimal exposure by inhalation of Glyphosate - even at 450 times less concentration than that used for spraying- damages DNA in the cells.

<http://www.ncbi.nlm.nih.gov/pubmed/22331240>



AUTISM AND ADULT ONSET ALZHEIMER'S DISEASE

At today's rate, by 2025, half of US children will be autistic. RoundUp usage is rampant in countries like the US where GM crops have taken over the farm systems.

The original patent on Glyphosate was given for its chelation properties. Glyphosate chelates useful micronutrients leading to Autism and Alzheimer's Disease.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3945755/>

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www.navdanya.org www.seedfreedom.info



NAVDANYA

In a study promoted by the European Union on the impact of organic food and agriculture on human health, research was undertaken on the overall impact of pesticides on human health. The research showed the impact of exposure to pesticide in food especially in vulnerable subjects, such as children and pregnant women, and can harm brain development & the nervous system of human beings. The report states “100 pesticides are known to cause adverse neurological effects in adults, and all of these substances must therefore be suspected of being capable of damaging developing brains as well”. The impact of neurological issues linked to pesticides use is also of import from a mere financial perspective: lower IQS caused by prenatal exposure to agrochemicals lead to a social economic cost that amounts to 125bn per year.

Toxic chemicals can also pass from pregnant women to fetuses through the umbilical cord, affecting children’s future health and development, as confirmed by studies conducted in the last decade by EWG and other researchers¹⁰. Moreover a new set of recent studies based on epigenetics shows that some chemicals may alter gene function in ways that can have a transgenerational effect, harming also future, unexposed generations¹¹.

As currently the industry only has the obligation to demonstrate the safety of the active ingredient, neither the hazard of the product formulation nor the synergic interaction of the mixture with other chemical products and its impact on health and environment is actually being tested.

However, researchers have determined that the “inert” ingredients in glyphosate products, especially POEA (polyethoxylated tallow amine) – a surfactant commonly used in glyphosate and other herbicidal products – are even more toxic than glyphosate itself¹².

RoundUp, in its formulation, is therefore much more toxic than its single active ingredient, glyphosate, These products continue to be sold with very low risk information compared with the grade of real toxicity^[13, 14], leaving users unaware of what they are exposed to. The World Health Organization Agency for Research on Cancer (IARC) classified a total of five active substances as active ingredients of various agro-toxics as “probable carcinogenic to humans”: by organophosphorus tetrachlorvinphos, parathion, malathion, diazinon and glyphosate¹⁵.

The IARC Monograph states that the population is mainly exposed to these substances in residential areas adjacent to the areas of application, during domestic use, and through nutrition, where the level of the observed exposure is generally low.

The US Environmental Protection Agency (EPA) had filed glyphosate as a “carcinogen” (category C) for humans in 1985, but then moved it in the category “non-carcinogenic” (category E) in 1991, following a laboratory study on mice¹⁶. IARC condemned this move, based on the argument that there were no statistical basis to justify the change of category, since two crucial statistical tests which were recommended by IARC itself were not considered.

Dr Patrizia Gentilini, oncologist and member of Doctors for the Environment in Italy (ISDE)¹⁷ at the Conference “Poisons at the Door¹⁸”, held in Rome stated: “Poisons are inside us and not only gly-

phosphate. There are hundreds of chemicals in our body, which have been detected through several tests. In particular, the amount of chemicals found in a sample of 300 pregnant women in the United States raises questions about their impact during embryo-fetal development and the increased incidence of childhood cancer, which is particularly high in Southern Europe. Currently, we are all victims of chronic exposure to low doses of large number of chemicals. What some science arrogantly appears to ignore is that a living system is an extremely complex system, and they base risk assessments about the impact on life forms on a mechanistic concept, a totally inadequate and scientifically outdated concept. Added to this, in the toxicological assessments made by regulatory agencies we are still at the point where only the active principle is considered, not the commercial formulation, not the set of molecules, not the combined action of different products. And as if that is not enough, all assessment is still substantially based on the data provided by the manufacturers, ignoring independent scientific studies.”

THE MYTH OF SAFE PESTICIDES

In the “Myth of Safe Pesticides” (Acres U.S.A., 2014)¹⁹ Andre Leu, President of IFOAM, states: “Until the use of pesticides is regulated on the basis of current, published, peer reviewed science, there is no scientific basis on which to base the belief that the residue levels in our food and environment are safe”²⁰.

There are a number of important publications showing that agrichemicals are responsible for decrease in biodiversity, along with increasing environmental and health problems. The body of science, which continues to grow, includes:

- The US President’s Cancer Panel 2010 report²¹,
- The IAASTD report²²,
- The State of Science of Endocrine Disrupting Chemicals 2012, United Nations Environmental Program²³,
- The United Nations Millennium Ecosystem Assessment Synthesis report²⁴.

Andre Leu analyzes and debunks a series of myths promoted by the pesticides industry propaganda about the safety in the use of chemicals in agriculture, including:

The myth that ‘Pesticides are Rigorously Tested’: Besides the fact that, for instance, only a few hundred of the 80,000 chemicals used in US are tested for safety (USPCP), regulatory agencies only test the active substance of individual pesticides, based on the indication provided by the manufacturers, avoiding to investigate either the toxicological risk of the product as a whole - complete with co-adjuvants and a co-formulants - or in combination with the overall mix of pesticides available on the market and often simultaneously used in fields and gardens. Such a limitation is particularly alarming, considering that the risks to human health and the environment of the co-formulants contained in the individual pesticides are often higher than that of the active substance;

Also that **‘The residues are too low to cause any problems’**: Today’s toxicology tests are based on the notion that the lower the dose the less the effect of the poison. The Average Daily Intake (ADI) is determined by the observation of ill effects in animal tests and this becomes the basis Authorities use to determine the level below which no health problems are expected to occur. Nevertheless, according to a significant number of studies, these parameters are

inadequate, as in many cases higher adverse effects, in terms of hormone disruption, are detected even in situations of very low toxicity parts per million²⁵. E.g.: lower sperm counts, increases in breast, uterine, testicular and prostate cancers and deformities in the genital-urinary tracts;

And, “Once a chemical degrades, it disappears and is harmless”: instead, most agrichemical products leave breakdown products or daughter chemicals called metabolites. A substantial number of agricultural pesticides such as organophosphates become even more toxic when they break down into metabolites. Very little research has been done to determine safe intake levels for metabolites or the by-products of agricultural poisons;

And most importantly, that “government regulatory authorities ensure agricultural poisons are used safely and cause no adverse health or environmental problems” which must be seen as a myth. Regulatory authorities use unpublished, non peer reviewed industry sponsored studies to base their regulatory decisions whilst ignoring a large body of published science which shows how the actual risk assessment methods are inadequate. Moreover, as further analyzed in other sections of this report, the amount of evidence of collusion with the agrichemical industry, conflicts of interests, cases of scientific frauds and undermining of independent research in the

most important regulatory agencies such as EPA and EFSA continues to grow.

ARGENTINA HEALTH CRISIS

In Argentina, the effects on health of RoundUp and RR crops have been denounced by many doctors because of the unusually high incidence of pathologies, especially in the areas affected by industrial agriculture. The increase in some diseases, such as cancer and birth defects, in



communities adjacent to soybeans fields has not gone unnoticed in the eyes of the medical community present in the area, which in 2010 organized the first National Meeting of “doctors of sprayed people” - Médicos de Pueblos Fumigados²⁶ - at the Faculty of Medical Sciences at the National University of Cordoba, where they shared their experiences and jointly denounced the indifference of the Ministry of Health towards the issue of pesticides exposure. At this first meeting, more than 300 professionals from 12 different provinces, as well as many scientists from CONICET (Consejo Nacional de Investigaciones Científicas y Técnicas - National Council of Scientific and Technical Research) founded an association aimed at promoting and sharing research, as well as disseminating independent scientific information and supporting local movements for the right to health, which have spontaneously arisen among the affected population. These efforts led to a number of epidemiological scientific studies on the adverse effects of exposure to pesticides. An example is the study conducted by the team of Dr. Medardo Avila Vazquez, Eduardo Maturano, Agustina Etchegoyen, Flavia Silvina Difilippo and Bryan Maclean “Association of cancer and environmental exposure to glyphosate” (2017)^[27, 28], where data show the greater incidence of cancer in rural areas affected by the use of pesticides and the consequent increase in mortality rate. In addition to this, Dr. Verzeñassi, in his testimony at the Monsanto Tribunal²⁹, presented data of his epidemiological study, conducted in 27 municipalities in four different regions of Argentina, Analyzing 63.82% of the population in these areas, the epidemiological profile has given evidence that the percentage of cases related to certain health problems, such as endocrine, thyroid, and allergic respiratory problems, is greater in the areas where the exposure to herbicides is higher. The most alarming result, however, is given the very rapid temporal evolution of the incidence of cancer cases, which is strongly increased in areas where mass GMO soy production is present and the consequent high use of pesticides. During his testimony Verzeñassi also cited the scientific work carried out by Professor Dr. Andrés Carrasco, in which it is shown that the preparation of glyphosate and its adjuvants has an effect that causes variations in retinoic acid, which plays an essential role in the correct expression of genes. His studies also have revealed the damaging effects of glyphosate at the time it reaches the placenta, causing serious damage to pregnant women who are exposed to these toxic fumes³⁰.

SRI LANKA GLYPHOSATE BAN

Roundup has been also linked to ‘chronic kidney disease of unknown etiology’ (CKDu) which has been affecting a significant number of farmers in Sri Lanka, India and Central America.

The Government of Sri Lanka banned Glyphosate in 2014³¹, following the publication of a new study on correlations between the use of glyphosate based pesticides and the presence of chronic kidney disease, with particular reference to the pathology known as Chronic Interstitial Nephritis in Agricultural Communities (CINAC). CINAC today represents a real public health emergency worldwide, with ever-increasing incidence and serious consequences, such as vascular diseases and premature deaths. The disease is commonly reported in men between the age of thirty and fifty, especially among rice growers, but there have also been cases of women and children living in the same areas, commonly characterized by tropical climate at low altitudes, high temperatures and high humidity.

After the appearance of the first case, about twenty years ago, CINAC has today become the most significant public health problem in Sri Lanka with more than 60,000 estimated patients³²



Monsanto Tribunal, The Hague, October 2016 - Kolon Saman, victim of RoundUp and Channa Jayasumana, expert environmental health, Sri Lanka. Photo Navdanya

and more than 20,000 deaths³³, and the disease is spreading epidemically. The study “Glyphosate, Hard Water and Nephrotoxic Metals: Are They the Culprits Behind the Epidemic of Chronic Kidney Disease of Unknown Etiology in Sri Lanka?”³⁴ found that this correlation occurs in areas where glyphosate use is combined with the presence of heavy metals in water.

As Dr. Channa Jayasumana, one of the leading authors of the study, who appeared as a witness at the Monsanto Tribunal³⁵, attested “glyphosate has the ability to act as a carrier of these heavy metals up to the kidneys.” The research results led Dr. Channa Jayasumana to investigate the additional effects of glyphosate based pesticides and other chemicals used in the areas most afflicted by CINAC.

These new studies have brought to light new epidemic diseases in cultivated areas: high levels of diabetes, cancer and neurological abnormalities characterize the youngest segment of the population living in such areas. Environmental effects of glyphosate based pesticides have also been observed: biodiversity erosion, animal species reduction, and impoverishment of the soil.

During his testimony at the Monsanto Tribunal, Dr. Jayasumana also denounced pressures and criticisms of his scientific research by both the agrochemical companies and the academic world connected to them. The research results, however, were the basis for a great victory for the country, leading to the ban on the use of the substance, in force since 2014.



THE CASE OF COSTA RICA

Costa Rica is a country where the uses of toxic agrochemicals and genetically modified crops, especially pineapple, have threatened the environment and the health of citizens in recent years. While Government institutions are supporting an industrial farming model, many civil society movements are mobilizing to promote an alternative agricultural system.

The Government of Costa Rica inaugurated 2017 with the approval of legislative decrees highly favorable for the agrochemical sector, marking a decisive step backwards in environmental protection standards³⁶. The new regulation, to enter into force in July 2017, stipulates that substance registers may be renewed for periods equal and consecutive of ten years³⁷. Agro-biologist and representative of the Ecological Federation of Costa Rica (Federación Ecologista de Costa Rica - FECON, Lic.) Fabián Pacheco Rodríguez denounced this decision as a process clearly in favour of the sale of toxic agrochemicals³⁸. In addition to recent regulatory developments, Costa Rica has been characterized by the intensive cultivation of GMO pineapples, which has provoked one of the country's major environmental socio-economic conflicts over the last fifteen years. The lack of adequate regulation and national legislation, has caused high levels of environmental contamination and massive violations of fundamental human rights across the country. One of the major emergencies affecting affected communities is the lack of access to drinking water³⁹. Studies conducted by the University of Costa Rica show that in regions heavily affected by contaminated water from pineapple agrochemicals the presence of headaches, gastrointestinal diseases and skin irritations is very high. An increase in cases of spontaneous abortion in young women has also been recorded, as well as serious eye problems among young people and children⁴⁰.

Costa Rican social and environmental organizations have been reporting the impacts of pineapple plantations in the country for many years, the main damage of which is the decline in areas for subsistence farming, contamination of water bodies, as well as the deforestation of millions of hectares of tropical forest⁴¹.



Photo: Bloque Verde

CIRCLE OF POISON

A recent documentary film⁴² by filmmakers Evan Mascagni and Shannon Post exposes how hazardous chemical products, which are banned in developed countries, are still being produced and exported to other countries with less safety restrictions. Products like endosulfan, for example, banned in 80 countries⁴³, which is causing deformities in hundreds of children in the cashew plantations of Kerala, India.

Along the same lines, an article published by The Guardian⁴⁴ (August 2017) denounced how Paraquat, banned in the EU since 2007, is being exported to developing countries from a UK factory, mainly to Brazil, Mexico, Indonesia, Guatemala, Venezuela and India. The article further reports that “Syngenta has exported 122,831 tonnes of paraquat from the UK since 2015, an average of 41,000 tonnes a year, according to export licensing data analysed by the Swiss NGO Public Eye”. On the case, Baskut Tuncak⁴⁵, the UN special rapporteur on toxic wastes declared: “The fact that the EU has decided to ban the pesticide for health and environmental reasons, but they still export it to countries with far weaker regulation and far weaker controls, is shocking to me.”



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04 CHAPTER



The People's Assembly in
The Hague, October 2016.
Photo: Manlio Masucci



“We have to democratize the decision-making process, especially in the European Union parliament and we need to examine more carefully how the decisions are being made, especially when it comes to Agriculture; GMO seeds represent a huge problem for democracy; in fact the EU is under a lot of pressure to sign trade treaties that are deemed to have negative consequences on the environment and ecosystems”. — Bart Staes, Member EU Parliament from the Green Party - People’s Assembly, The Hague, October 2016.

ATTACK ON KNOWLEDGE, INDEPENDENT SCIENCE AND DEMOCRACY

As we have seen earlier, the toxic products of the poison cartel have destroyed our health, biodiversity, ecosystems. While one aspect of the impact is harm, the other side is control. The poison cartel cannot survive without totalitarian control and is attempting a complete takeover of our food and agricultural systems. Their tools totalitarian control are IPRs, patents and seed laws that make farmers varieties illegal.¹ Their techniques to rob society of knowledge and the right to know are direct lobbying of governments and institutions (such as the DARK Act), PR propaganda and the undermining of independent science through paid science and ghost writing. The Poison Cartel uses its lobbying and “paid science” to impose their interests on democratic governments. Thus they are threatening the freedom of citizens. Democracy is based on people’s participation in shaping their society and decisions, and in making informed choices, and is consequently also based on the right to know and have the necessary knowledge as well as the right to regulation in order to be protected, and protect themselves from harm. Without the right to know and to full access to sovereign science, there can be no sovereign regulation and no democracy. By targeting scientific and regulatory institutions, by undermining our choices and rights, they are deliberately destroying our freedoms as sovereign citizens.

One of the key tactics of the Poison Cartel to protect its profits at any cost has been a sustained and malicious campaign to attack independent scientists and the silencing of independent research. Using deceptive techniques to smear scientists, PR firms and so called independent academics and scientists to represent their interests, in manufacturing counterfeit science by ghost writing studies for scientific literature, suppressing evidence of the dangers of their products, industry has no limits to what it does to safeguard its profits and control of their empire. The agrochemical industry used its invasive tactics and put its lobbyists at work in order to shut down any scientific finding which would not serve their interests.



William Bourdon, lawyer of the Monsanto Tribunal, on the right to information. Photo: Navdanya

As the French lawyer William Bourdon said in his testimony at the Monsanto Tribunal: “Monsanto has been using a triple strategy – concealing information, falsifying information and persecuting all those who disseminate contrasting information. Violating people’s right to obtain information is a crime upon which we need to act so as to not lose the occasion to improve the current situation”²

Monsanto v/s IARC

Ever since IARC declared glyphosate as a probable human carcinogen³, Monsanto and its allies have begun a full fledged campaign to cut off US funding for the agency. As journalist Carey Gilliam writes “The industry is also demanding that the Environmental Protection Agency fully repudiate the IARC classification and green-light continued use of glyphosate herbicides, which spell billions of dollars in sales annually to Monsanto and the agri-chemical brethren. The industry message to EPA is loud and clear: The right to safety and Independent research and international scientific findings which are necessary to protect the environment and public health should not take precedence over protection of a multi-billion-dollar agent like glyphosate”⁴.



Claire Robinson speaks at the session “Attack on Science”, People’s Assembly, The Hague, October 2016. Photo: Navdanya

The attacks against IARC that began in 2015 have recently been exposed by the magazine Le Monde in its investigation “Monsanto papers: the war on science by the pesticides giant”⁵, where it has been defined as one of the most brutal and offensive campaign conducted against IARC by a corporation. The journalists Stéphane Foucart and Stéphane Horel reported the experience of IARC’s Director Christopher Wild: “for the past two years a raging fire has targeted the institution (...) the credibility and integrity of his work is being challenged, his experts are denigrated and harassed by lawyers and his finances weakened. For nearly half a century IARC has been charged, under the auspices of the World Health Organization (WHO), to draw up an inventory of carcinogens. But now the venerable agency is beginning to waver under the assault.”⁶ The agency’s director himself stated “Since that time, this is probably the most aggressive that it’s been. What we see is, it’s linked to classifications where there’s a very strong commercial interest”⁷.

At the scientific level, individual scientists in the US that served on the IARC panel⁸ are now being pressured through legal subpoenas to turn over their meeting notes to Monsanto⁹. Monsanto's law firm has also sent letters to IARC's members outside the US asking them to release personal emails as well as drafts related to their work related with glyphosate findings. Letters which have been defined "intimidating and noxious".

It must be noted that, to date, almost 100 scientists from 25 countries have written to support the IARC evaluation¹⁰.

The war on science conducted by MNCs has not only affected the international agency, but also other independent scientists and research teams. Indeed, after the release of the results on the level of toxicities of RoundUp, which also took into account all the hidden poisons, which are even more toxic than the active ingredient¹¹, Doctor Seralini and his research group have been under attack by Monsanto in order to undermine their findings. Claire Robinson at the session "Attack against Science" at the People's Assembly explained how a smear campaign was conducted against the Seralini study¹², which is an example on how independent scientists all over the world suffer for similar attacks: "What is Monsanto's role in attacking science and scientists who throw doubt on the safety of Monsanto's products? The Seralini study was attacked by groups associated with Monsanto; this included a PR firm called V-fluence which is run by Monsanto's former Chief of Communications, Jay Byrne. This organisation, together with another which claims to be based on science and is called AGBioWorld actually conducted a smear campaign against Seralini and his fellow researchers. A part of this smear campaign consisted in having what we call 'third-party' academics and third party scientists speaking against the study. This is a known PR technique, and it consists of putting the messages of the corporation into the mouths of supposedly independent scientists and experts because the public trusts those people: it doesn't trust Monsanto but it will trust a 'friendly' scientist. This is how it works and this is what they did in the case of the Seralini study. They put these messages into the mouths of scientists and experts, and also in articles appearing in magazines like Forbes; these were all to smear the study and to discredit the researchers"¹³.

The attack on Seralini was also reported in the series of documents published in July 2017, belonging to the so called "Monsanto Papers"¹⁴. From the documents it emerged how the scientific journal Food and Chemical Toxicology Journal was targeted. The editor was changed under Monsanto's influence and Seralini's long term study was retracted. In an email sent to FCT editor Wallace Hayes by Monsanto's collaborator Bruce Chassy, the latter states: "My intent was to urge you to roll back the clock, retract the paper, and restart the review process"¹⁵. The motivations that led Monsanto to attack Seralini's studies are many and obvious, due to the fact that the results demonstrate RoundUp has high toxicity even at small doses and the ability of GM maize to tolerate it. The research thus has potential to undermine Monsanto's main pesticide product. For this reason Monsanto had to avoid any new long-term research on GM crops and related pesticides to avoid new threats on their economic interests. Seralini's paper was later republished¹⁶. Monsanto's hand in attack on scientists, on journals, on research has now been revealed in disclosed emails [^{17,18}].

THE POISON PAPERS

Our right to information, our health and the environment are being attacked by the Toxic Capital of the Poison Cartel both by undermining any scientific result which which do not show them in good light, and by colluding with the regulatory agencies in charge of protecting the public from chemical hazards.

The "POISON PAPERS"¹⁹ clearly expose the extent of these practices.

Released at the end of July 2017 by the Center for Media and Democracy²⁰ and the Bioscience Resource Project²¹, the poison papers contain more than 20,000 documents including scientific studies, summaries of studies, internal memos and reports, meeting minutes, strategic discussions and sworn testimonies denouncing how toxicity risk assessment of many chemical substances, have been hidden from the public since the 1920s, not only by producers, but also by national regulatory agencies. What emerged from this series of documents is that several US agencies involved, such as the U.S. Environmental Protection Agency (EPA), the U.S. Department of Agriculture Forest Service, the U.S. Food and Drug Administration, the Veterans Administration and the Department of Defense, are deeply colluded with agribusiness corporations like Dow, Monsanto, DuPont and Union Carbide, and other smaller companies of the sector. Herbicide and Pesticides, such as 2,4-D, Dicamba, Permethrin, Atrazine, and Agent Orange, dioxins, and PCBs are the most discussed in the Poison Papers, and most of them are still on the market, extensively sprayed on crops which end up in the food chain. The Poison Papers reveal how EPA kept secret the poisoning effects of substances like dioxins, which, for instance, have neither been regulated nor have legal limits been set. Furthermore, efforts to edit or delete National Dioxin Study results have been reported, as part of a case of collusion between EPA and the pulp and paper industry. Also, several issues on the lawfulness of Industrial Bio Test (IBT) emerged, as since the end of the 1970s more than 800 IBT safety studies on chemical products were nonexistent, fraudulent or invalid. In addition to all the above, the Poison Papers show the intent of corporations like Monsanto to hide the negative health effects of dioxins through the issue of many misleading studies, which have, in turn, been supported by EPA²².

As Dr. Jonathan Latham, executive director of the Bioscience Resource Project, states: “What is most striking about these documents is their heavy focus on the activities of regulators. Time and time again regulators went to the extreme lengths of setting up secret committees, deceiving the media and the public, and covering up evidence of human exposure and human harm. **These secret activities extended and increased human exposure to chemicals they knew to be toxic**”²³. These practices are a serious threat to our democratic principles, due to the fact that the same agencies that should protect citizens are the ones that expose us to chemicals hazards, undermining independent science in favour of a toxic economic capital.

CONFLICT OF INTEREST AND LACK OF TRANSPARENCY

In recent years, EFSA has been strongly criticised by the European Parliament, as well as by various NGOs and by the media. A radical change in the pesticide risk assessment process has been demanded, given the involvement and strong influence of the food industry in the decision making process.

According to an investigation by Corporate Europe Observatory in June 2017, about 46% of the experts on the scientific panels of EFSA have a direct or indirect financial conflict of interest with the agribusiness industry²⁴.

In other words, very often the same subjects involved in the regulatory process had been collaborators or employees within organisations funded by those who produce the substances to be regulated. According to a 2011 report by Earth Open Source “Europe’s pesticide and food safety regulators - Who do they work for?”²⁵ several experts are linked to a US organization known as ILSI (International Life Science Institute), funded by multinationals in the pesticides and GMOs sector. Collaboration between the two bodies is carried out through workshops and conferences where risk assessment processes are redesigned, often on products of the same ISLI members, which are in the pipeline for testing. Proposals are based on less stringent and cost-effective risk assessment processes for companies at the expense of health and the environment. An astonishing example of conflict of interest is EFSA’s pesticide safety regulator, Angelo Moretto, who resigned from the Plant protection products and their

residues (PPR) sector. Moretto was simultaneously working for Melete srl, a consulting company which supports companies in complying with the process of registration, evaluation, authorization and restriction of chemicals²⁶.

In general, decision-making processes are characterized by a profound lack of transparency that is indirectly linked to the fact that public/independent research is barely considered in the authorization process.

Another example that explains the weakness of the system is represented by the events that followed the International Agency for Research on Cancer (IARC) statement, classification of glyphosate as “probable carcinogen”²⁷ which gave rise to a global debate about the fragility and ineffectiveness of pesticide regulation policies. The European Commission mandated EFSA to consider IARC’s findings on the potential for carcinogenicity of glyphosate-based pesticides²⁸.

However, at the end of this new evaluation, EFSA concluded that glyphosate is unlikely to be genotoxic and that it unlikely represents a carcinogenic threat to man.

The basis of divergence in the results is the risk assessment prepared by the German Federal Institute for Risk Assessment (BfR), which first expressed its disagreement with the IARC’s assessment, with which EFSA subsequently aligned. The decision shared by BfR and EFSA regarding glyphosate carcinogenicity has been strongly criticized by many scientists in Europe and beyond. A group of independent academics issued an open letter addressed to EFSA and BfR which expresses the need for a scientific review of the declaration of non-carcinogenicity.

Well-known German toxicologist Peter Clausing, member of Pesticide Action Network PAN - Germany and a witness at the Monsanto Tribunal²⁹ accused EFSA and BfR of scientific fraud and data distortion³⁰ in order to conclude that glyphosate is not carcinogenic. In the report “Regulatory Agencies (BfR, EFSA) use partial arguments to deny glyphosate carcinogenicity” and as part of its testimony to the Monsanto Tribunal, Peter Clausing stated that the results obtained by EFSA were in contradiction with the evidence presented in the report submitted to the European Chemical Agency (ECHA) by the German Institute for Occupational Safety and Health (BAuA). Clausing explained that male mice of all five carcinogenicity studies considered acceptable by EFSA and BfR show a statistically significant increase in the incidence of many types of cancers. Three of these five studies show a significant increase in a particular type of cancer, malignant lymphoma. And researchers of the examined studies also emphasized how experimental results can be reproduced. Clausing also stressed that - in the same European legislation³¹ - these experimental results already exceed the limits for the classification of glyphosate in class 1B (substances with presumed potential Carcinogenic to humans based on results obtained from animal experimentation³²).

This and other contradictions contained in the assessment of the German authorities are particularly significant provided that, according to the European pesticide regulation, an active substance is to be forbidden as soon potential carcinogenicity emerge from laboratory tests results emerge.

As reported in the report Buying Science³³: “BfR assessed the various glyphosate carcinogenicity tests separately, to be able to exclude them individually as individuals random results. In this way the agency could conclude the non-classification of glyphosate as a carcinogen”.

Furthermore in the latest report published by Global 2000 “Glyphosate and cancer: Authorities systematically breach regulations”³⁴ Clausing denounced how European regulation stepped back in front of industries strategies leading three European Agencies, such as the German Federal Institute for Risk Assessment (BfR), the European Food Safety Authority (EFSA), and the European Chemicals Agency (ECHA) - to affirm that glyphosate is not carcinogenic to humans. Indeed, this conclusion does not come from scientific evidences, but rather from a process of dismissal of scientific evidence and violation of scientific principle³⁵.

ECHA

On March 15, 2017, ECHA (European Chemicals Agency) released its decision, stating the non-carcinogenicity, non-genotoxicity and non-toxicity of glyphosate³⁶. ECHA's approach to scientific risk assessment does not differ from that previously used by BfR and EFSA. Although ECHA has admitted the existence of elements that corroborate the carcinogenicity of the substance in the analyzed studies, it has eliminated them as irrelevant as only "slightly higher than the baseline". The problem is upstream. According to PAN Germany, in the statement published on the website on March 16, 2017: "It can be seen in the available official reports that the "background data" - the so-called historical control data - were violating the scientific rules and purpose-made to dismiss the findings"³⁷.

This judgment is paradigmatic of the weakness of the European system as regards the proper application of the precautionary principle, the promotion of an independent science and adequate monitoring of Possible conflicts of interest. As stated in a letter from the European Unit Director of Greenpeace, Jorgo Riss, together with other civil society organizations³⁸, independence from all external interests, impartiality in decision-making, openness and transparency in decision-making, and all the other values that describe the ECHA's mission on its site³⁹ fall into the face of conflicts of interest with some members of the risk assessment committee. As outlined in the letter, President Tim Bowmer has a past in the field of risk assessment in the chemical industry in which he has worked for about twenty years, with the task of managing relationships with companies. In addition, members Slawomir Czerczak and Tiina Santonen come from public science institutes where they offer paid advice services for risk assessments to chemical companies and are responsible for signing a letter strongly contested by the Endocrine Society scientific organization on endocrine disrupters (Chemical substances that interfere with the hormone system) in line with the positions of the chemical companies.

These are direct links with sectors involved in the risk assessment process, where once again (paradoxically) the regulator and the one who needs to be regulated join in one subject, translating the violations of the principle of transparency, but above all do not satisfy the requirement for independence, which is needed for those who care for EU citizens and the environment.



French biologist, Nicolas Defarge, of Prof Seralini's Team, speaks at the Monsanto Tribunal on the corporate attack on science. Photo: Navdanya

COLLUSION BETWEEN EPA AND MONSANTO - THE MONSANTO PAPERS

In the United States, the debate surrounding risk assessment and glyphosate classification has become particularly controversial following the statement of the International Agency for Research on Cancer (IARC) of the World Health Organization (WHO), which - in May 2015 - classified it as belonging to Group 2A, that is, "probably carcinogenic to humans"⁴⁰.

On 13 March 2017, in the context of a litigation in California involving a combination of more than 55 legal proceedings against Monsanto by US citizens affected by non-Hodgkin's lymphoma, Judge Vince Chabria ordered that a series of documents, hitherto unavailable for reasons related to "industrial secrecy", were disclosed and made public⁴¹ ⁴².

The dossier contains hundreds of internal emails of Monsanto, as well as its correspondence with US Federal Agencies, the content of which reveals the magnitude of collusion between Monsanto and the EPA in order to undermine the investigation of the potential hazard of Glyphosate for human beings⁴³.

From these correspondence emerges that Monsanto have been ghost writing some studies fraudulently attributed to apparently independent academics presented as independent. The documents also show how Monsanto put pressure on the US government with the aim of delaying the product's safety assessments.

Following the revelations contained in the "Monsanto Papers", the cases against Monsanto relating to the correlation between the use of glyphosate based herbicide RoundUp and the development of non-Hodgkin's non-human lymphoma have increased exponentially. It is estimated that, as by March 2017, a total of more than 700 cases have been opened by state and federal courts⁴⁴.

By the end of July 2017, four months after the publication of the first Monsanto Papers, new documents have been released. Attorney Bren Wisner, of the firm Baum Hedlund Aristei Goldman⁴⁵, which released the document, stated that "these show that Monsanto has deliberately been stopping studies that look bad for them, ghostwriting literature and engaging in a whole host of corporate malfeasance. They [Monsanto] have been telling everybody that these products are safe because regulators have said they are safe, but it turns out that Monsanto has been in bed with U.S. regulators while misleading European regulators"⁴⁶. The documents showing how Monsanto hid information about the dangers and toxicity of Roundup and prove how science has been manipulated and how supported U.S. regulators have been corrupted, undermining health and environmental rights.

The evidence is growing everywhere. Monsanto and the Poison Cartel have corrupted science and regulatory systems. They have launched a war against knowledge, our right to know, our right to safety, our right to life.

Freedom from the Poison Cartel has become an imperative for life on the planet to flourish, for democracy to flourish, for human society to flourish. Our freedoms and the Poison Cartel cannot



coexist.

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BUILDING THE ALTERNATIVES: AGROECOLOGY-AGRICULTURE WITHOUT POISONS

The Poison Cartel shaped Industrial Agriculture based on agrichemicals on the false claims that it would increase food production, remove hunger, reduce poverty, increase prosperity. What it has given us is an epidemic of hunger, malnutrition and disease, uprooting and displacement of small farms and family farmers, destruction of biodiversity and climate change.

The current industrial food system based on monocultures, widespread use of agrochemicals and genetically modified seeds - combined with the introduction of neo-liberal free trade policies and the liberalization of trade, pose a serious threat to our social, environmental and health well being. This agriculture model has been slowly poisoning millions of people while pushing small farmers off their land. It was founded on the false do-good idea that it produces cheap and abundant food, a necessary step to feed the growing population of the world. However, having degraded the greater part of our soil and polluted water, land and our bodies, eroded biodiversity and played a key role in the current climate crisis, the industrialization of our food system has produced a relatively small portion of the global food production. While causing 75% of the planetary destruction, it only provides 30% of the food, food which is nutritionally empty and loaded with toxics .



A-Z on Agroecology and Organic Food Systems at Navdanya Farm. Dr Salvatore Ceccarelli explains Participatory Plant Breeding. Photo: Adam Breasley

The toxic products from the Poison Cartel such as Round Up (Glyphosate) & Basta (Glufosinate) or GMO seeds have led to the destruction of soils, to desertification, to the extermination of bees, to the rise in health epidemics such as cancer, and birth defects, on a long list of other such wrongs. They are contaminating and polluting ecosystems and our bodies by polluting our farms and poisoning our food systems.

Every report of the United Nations in the last few years has alerted the international community that the industrial agriculture model has failed and we need to make a rapid transition to Agroecology, an agriculture aligned with the laws of ecology and the laws of earth systems.

The International Assessment of Agricultural Science, Technology and Knowledge for Development (IAASTD¹) set up by UNDP, UNESCO, UNEP, WHO, FAO and World Bank, in its report “Agriculture at the Crossroads”, has concluded that neither the Green Revolution nor genetic engineering can address the multiple problems our agriculture systems face. Only Agroecology offers possibilities of solutions.

The UNCTAD² in its Trade and Environment Review of 2013 titled “Wake Up Before it is too late: Make Agriculture truly sustainable now for Food Security in a Changing Climate” has indicated how urgent it is to shift from the industrial agriculture model to an ecological one.

As outlined in the 2017 Report by the United Nations Special Rapporteur on the Right to Food, Hilal Elver³: “Reliance on hazardous pesticides is a short-term solution that undermines the rights to adequate food and health for present and future generations. Without or with minimal use of toxic chemicals, it is possible to produce healthier, nutrient-rich food, with higher yields in the longer term, without polluting and exhausting environmental resources⁴. The solution requires a holistic approach to the right to adequate food that includes phasing out dangerous pesticides and enforcing an effective regulatory framework grounded on a human rights approach, coupled with a transition towards sustainable agricultural practices that take into account the challenges of resource scarcity and climate change”.



Photo: Manlio Masucci



A-Z on Agroecology and Organic Food Systems at Navdanya farm. Photo: The Hummingbird Project

The Report also points out that the agrochemical industry is promoting the assertion that pesticides are instead necessary to feed the world, which is both inaccurate and misleading, because theoretically there is enough food to adequately provide for global needs, but those who mostly need it are prevented from receiving it by inequitable production and distribution systems.

Poisons are not feeding us – rather, they are killing our planet and us. The poison cartel, which includes toxic makers such as Monsanto, Bayer, Dow, DuPont, etc are together destroying both our daily bread and our freedom. They are corrupting governments, violating nations' sovereignty and imposing on our planet a model of greed, poison and corruption.

We clearly have two totally different paradigms evolving with respect to the future of food and farming. One can only lead to more poisons and chemical monocultures, biodiversity and ecological destruction, disease and death.

The second has the potential to solve the food, nutrition and health crisis, water and climate crisis, and prevent the creation of millions of climate refugees. This is the road to food security, which was abandoned by research institutes and governments under the influence of giant chemical corporations. This is the road of agroecology.

The only possible response to the growing ecological degradation, poverty, health emergency and malnutrition is to move from the present linear and extractive economic and industrial agricultural paradigm based on a one-way extraction of resources and wealth from nature and society, to, instead, a regenerative ecological and nature-based circular approach, aimed at guiding decision makers not only regarding agriculture, but to apply it to all economic and social choices⁵.

Ecological organic agriculture and local food systems can lower the ecological footprint and increase human health and wellbeing.

All over the world, small farmers and gardeners are already implementing biodiverse ecological agriculture, while rejuvenating the soil and saving and breeding their seeds. They are providing

healthy and nutritious food to their communities and bringing back food in the hands of farmers and consumers, making big agribusiness irrelevant and useless, along with their poisons and toxic food.

In October 2016, Navdanya co-organised, along with multiple civil society organizations, the Monsanto Tribunal and the People's Assembly in The Hague⁶. The People's Assembly represented the platform through which to share independent studies and real experiences of farmers and consumers across the world.

Alongside the Monsanto Tribunal, the People's Assembly was a gathering of leading movements and activists working to defend our ecosystem and food sovereignty, to lay out the effects of industrial agrochemicals on our lives, our soils, our atmosphere and climate, as well as to chart the road to our future based on Seed Freedom and Food Freedom, agroecology and farmers rights, our commons and economies of sharing, rights of nature and earth democracy. The voices of the soil, of the seeds, of farmers, consumers, and of people from all over world converged and reverberated in a new unity across diversity. The poison making industry is destroying life on Earth, our health and our democracies. The People's Assembly resolved to end a century of ecocide and genocide.



In July 2017 Navdanya organised the conference “Poisons at the Door - Food, health and environmental risks in the new global market”, in Rome, Italy. Photo: ESC

In the course of 2016, more than 110 People's Assemblies were self-organized by local communities in 28 countries throughout the world establishing a worldwide network in order to create a healthy future of food and of the planet⁷.

The global mobilization which culminated with the People's Assembly and the Monsanto Tribunal continued through 2017 through a number of actions in Greece⁸, France⁹, Germany¹⁰, and Italy¹¹ - among others - shaping a future that is GMO free, poisons free, fossil fuel free, patent free, “free trade“- free, and free of corporate control¹².



Satyagraha Yatra, India, April 2017. Photo: Navdanya

In India Navdanya organised a mass mobilization for democracy with a pilgrimage for Seed Freedom and Food Freedom¹³ - "Satyagraha Yatra" (Force of Truth), for a Poison free Living Agriculture by 2047, when India celebrates 100 years of her political independence from the British Empire (JAIVIK BHARAT 2047)

Navdanya Community and Network, with its Biodiversity Conservation Farm and learning center is one of the examples of the many initiatives taking place all over the world to work towards shaping another future based on Seed Freedom and Food Freedom, agroecology and farmers rights, our commons and economies of sharing, rights of nature and earth democracy.

Over the last 30 years, Navdanya has been conserving biodiversity through community centered, decentralized indigenous seed banks and has

Along with the Coalition against Bayer Dangers, IFOAM Organics International, Colabora and many others, Navdanya organised a "Stop Bayer / Monsanto" mobilization in Germany at the end of April 2017. Graphic: CBG Network

STOP BAYER MONSANTO!

25.4. BONN
PODIUMSDISKUSSION
"STOP BAYER/MONSANTO"
 19:30 Uhr Uni Bonn Hörsaal 17
 mit Axel Köhler-Schrura (CBG)
 ver.di-Hochschulgruppe,
 u.a.

27.4. KÖLN
TOWNHALL MEETING
"BAYER/MONSANTO:
GET OFF OUR PLATES!"
 19:30 Uhr Uni Köln Aula 1
 Fernando Lugo (Paraguay)
 Nimmo Bassex (Nigeria)
 Andre Leu (Australien)
 Johannes Remmel (NRW)
 Axel Köhler-Schrura (CBG)
 u.a.

28.4. BONN
DEMONSTRATION
VOR DER AKTIONÄRSVERSAMMLUNG
7-10 UHR
"Get up early!"
 Vielfältige
 Protestaktionen
 vor & in der Hauptversammlung
 der BAYER-Aktionäre

8:30 UHR
Kundgebung
& Musikprogramm
 u.a. Fernando Lugo,
 Platz der Vereinten Nationen
 World Conference Center Bonn

...mehr Infos?
www.stop-bayer-monsanto.de

Unterstützt von:

Bonner Jugendbewegung (BJB), ÖF 2047 Bonn,
 CFAE, Leverkusen, der B. Agrarhof Köln, GdJ
 ver.di Fachbereichsverband Bildung & Forschung
 NRW-Land, Mexiko-Initiative Köln/Bonn,
 Ifar Bonn, Erwerbslosenforum Deutschland,
 Umweltgemeinschaft

ver.di
 HOCHSCHULGRUPPE
 UNIVERSITÄT BONN

IFOAM
 ORGANICS
 INTERNATIONAL

ASAFA
 Universität zu Köln

Navdanya

CBG
 Coordination gegen
 BAYER-Gefahren



Mahila Anna Swaraj - Food Sovereignty in Women's Hands. Photo Navdanya

established over 124 seed banks in 22 states, while training over 500,000 farmers in seed sovereignty, food sovereignty and sustainable agriculture, as well as helping set up the largest direct marketing, fair trade organic network in India.

On the Navdanya farm, organic matter has increased up to 99%, Zn has increased 14%, Magnesium has increased 14%, not through external inputs. They have been produced by the billions and millions of soil microorganisms that are in living soils. Healthy soils produce healthy plants. Healthy plants are then able to nourish humans.

On the other hand, chemical farming has led to the decline in soil nutrients, which naturally translates into a decline of the nutritional content in our food.

Examples of success stories of farming without chemicals abound throughout India – producing more food, more nutrition, and at the same time increasing farmers' incomes. Wherever farmers are practicing biodiverse ecological farming and participate in diverse markets they control, there is no debt and no farmers' suicides.

People and communities everywhere are giving up poisons and adopting agroecology. They are shifting from an agriculture, which is destroying the health of both people and the planet to a regenerating healing agriculture. By waking up to the laws of Gaia and to the Rights of Mother Earth, they are enhancing their own well being and that of their communities.

Thousands of people from across the world have already joined the global mobilization to reject patents on seeds, and poisons in our food and soil. Through this initiative, people worldwide are working to reclaim their basic right of seed freedom and to promote poison-free organic farming and agroecology. Farming without poisons is in our hands. And as Navdanya's work over the last 3



A-Z on Agroecology and Organic Food Systems at Navdanya Poison Free Farm. Photo: Adam Breasley

decades has shown we can grow enough nutrition for two times the current population (Health per Acre¹⁴), we can increase farmers' incomes tenfold by giving up expenses for buying toxic chemicals (Wealth per Acre¹⁵), we can address malnutrition and chronic diseases (Annam: Food As Health¹⁶), and we can create climate resilience (How Biodiversity and Agroecology create Climate Resilience¹⁷).

It is incumbent upon us to free all the other more vulnerable species of our Earth family from the threat of these poisons. Each of us, wherever we are, whoever we are, can make a commitment, today, to grow and eat food without poisons. We can begin with our gardens and our kitchens. We can join communities which have already liberated themselves from pesticides and GMOs by going organic and local .

CALL TO ACTION

We invite you to join with people and communities around the globe, in this "Call to Action for Creating a Poison Free World" from 2nd October to 16th October 2017.

Let us assert and remember that We the People, as citizens of the Earth have more power than the Poison Cartel.

Dr Vandana Shiva, founder of Navdanya and renowned environmentalist, stated at The Hague, "At this People's Assembly, and at hundreds of others happening all over the world, people have passed their verdict. The Poison Cartel is guilty. They have destroyed life, plant and human health alike. They have disregarded all laws of nature and countries' national legislation with the result of destroying biodiversity of our fields and our foods systems".

As part of the Planetary Alliance for Earth Democracy we shall continue to resist any attempt of these poison makers to control our food, our life and democracy.



Photo: Navdanya

“It is time to overturn the myth that pesticides are necessary to feed the world and create a global process to transition toward safer and healthier food and agricultural production”. — Hilal Elver, UN Special Rapporteur on the right to food and Baskut Tuncak, Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes¹⁸



Dr Vandana Shiva, Navdanya, Andre Leu, IFOAM Organics International, Nnimmo Bassey, Health of Mother Earth Foundation. Photo: Olivia Taviah

“It’s clear that chemicals in agriculture are only there for the profits of corporations. But the effect on people’s health are not acceptable. The biggest tragedy with all these toxic chemicals in our food and all the multitude of diseases that they cause is that they are unnecessary. There is no need for this toxic industrial agriculture” — Andre Leu, President of IFOAM – Organics International, People’s Assembly, The Hague, October 2016.



Nnimmo Bassey, Health of Mother Earth Foundation, Nigeria , and Farida Akhter, UBINIG, Bangladesh. Photo: Navdanya

“Food is a celebration. Eating is a culture, a way of life. The Monsanto Tribunal and the People’s Assembly are not a struggle against a single corporation – this is a struggle for life, for freedom. It is a struggle from big companies holding Mother Earth as a slave for their profit. This is a very important moment for the future of humanity and for the future of our planet. To stop the toxic poisoning not just of our food systems, but our water systems. To stop the grab of our liberties just because the corporations have the power. I want to invite us to open our hearts and get ready to join hands in the struggles ahead”. — Nnimmo Bassey, Health of Mother Earth Foundation, Nigeria - People’s Assembly, The Hague, October 2016.



“We all agree that we live in a society in which we have degenerating soil, health, public morality and economies. It is a model that we need to move away from. We need to globalize hope. We need to change the way we eat, farm and our relationship with nature and environment. We need to break down the walls that divide us and express solidarity with each other”.
 — Ronnie Cummins, Organic Consumers Association USA - People’s Assembly, The Hague, October 2016.

Ronnie Cummins, Organic Consumers Association, USA and Rachel Parent, Kids Right To Know, Canada. Photo: Manlio Masucci

THE GLOBAL MOVEMENT TO BAN ROUNDUP AND OTHER PESTICIDES

- One of the most significant cases is California, where the Office of Environmental Health Hazard Assessment (OEHHA) has listed glyphosate based herbicide RoundUp - under Proposition 65 - and effective July 7, 2017 - as known to the state to cause cancer. It is worth taking note that Monsanto had sued the nation’s leading agricultural state, saying California officials illegally based their decision for carrying the warnings on IARC findings¹⁹.
- Several European countries and regions, including The Netherlands²⁰, France²¹, Italy²², Sweden²³, Switzerland²⁴, Flanders²⁵, UK Pesticides Free Towns²⁶, Glyphosate Free Barcelona²⁷, South Dublin County Council²⁸ - among others - have been planning to ban or restrict, if not already banned or restricted the use of glyphosate herbicides for home and garden, schools and public parks, municipal or even agricultural (pre-harvest) use.
- Also Malta has made moves towards banning glyphosate²⁹, while Bermuda has banned the import of glyphosate based herbicides³⁰.
- In El Salvador, an amendment to a pesticide and fertilizer law was approved in September 2013, prohibiting 53 chemical products, including RoundUp³¹.
- In the USA at least thirty-six states have implemented school pesticide regulations, [^{32, 33, 34}].
- In Canada, laws restricting “cosmetic” pesticide use for lawns and playgrounds³⁵ have been passed, while Ontario province banned use of 2,4-D³⁶ in lawns and landscapes.

EUROPE - EUROPEAN CITIZENS' INITIATIVE TO STOP GLYPHOSATE

With the prospect of a possible renewal of the Glyphosate license for another 15 years, the European Citizens' Initiative (ECI) to Stop Glyphosate³⁷ is asking the EU Commission to revoke the authorization of glyphosate use in all member states, to reform EU procedures for the approval of pesticides which must be based solely on independent published studies commissioned by the competent public authorities and not by manufacturing companies and to set required reduction targets of pesticides use in EU member countries. In less than five months, more than one million EU citizens have joined the ECI to Stop Glyphosate³⁸. The campaign is strengthening a European network of committed organizations for a truly sustainable agriculture and consumption model, capable of linking the issue of agri-chemicals to the issue of the right to health.



Launch of the European Citizens' Initiative to #StopGlyphosate in Rome. Photo: Navdanya

COSTA RICA: PESTICIDES-FREE ZONES

In the context of the critical health and environmental situation caused by pesticides use in Costa Rica (as described in the chapter “Attack on Health”), since 2005 various communities started the campaign “Cantones Libres de transgenicos (GMO Free Cantons)”³⁹. To date, 75 cantons have declared themselves GMO free, which corresponds to 92% of Costa Rica national area⁴⁰. It is a people’s initiative, but with solid legal grounds as it appeals to article 50 of Costa Rica constitution: “every individual has the right to a safe and ecologically balanced environment”⁴¹.



Photo: Manlio Masucci



Photo: Bloque verde

Along the same lines of the GMO Free Cantons campaign, social movements recently have launched a new campaign, "Paren de fumigar" ("Stop Spraying Pesticides).

To date the cantons of Desamparados, Aserrí and Pérez Zeledón have declared themselves pesticides free, while Tibás, Santo Domingo, Montes de Oca and the National University for E learning (UNED) have declared themselves glyphosate free⁴². Citizen's Movement in Costa Rica are also fighting to stop the intensive cultivation of pineapple. The most recent move of the industry, backed by the government, was to plan a plantation less than 5 kilometers from the heart of the Térraba-Sierpe Wetland established in 1995 as a protected area, which would also be threatened by contamination from agrochemicals such as bromacil and ametrine used in the production of pineapple. Multiple protests have been organised by citizen's movements in the last few months, which have obtained the attention of the media and the government⁴³. Under the pressure of the people and in response to a request of the Ministry of the environment, the government of Costa Rica will ban the use of the herbicide bromacil⁴⁴ throughout the country to avoid groundwater contamination⁴⁵.

RESISTANCE IN ARGENTINA

In the absence of a proper institutional health policy related to the consequences of pesticides exposure, social movements, university associations, experts and attorneys have come together to carry out citizen's health monitoring projects. Improvements in regulation regarding pesticides spraying in the vicinity of populated areas and watercourses have been obtained in some court cases⁴⁶. In December 2016 a report⁴⁷ was issued by a coalition formed by non-governmental and civil society organizations, to be submitted to the United Nations Human Rights Council to denounce as the right to adequate nutrition, information, health, access to drinking water and a healthy environment are heavily affected by the effects of the application of large amounts of agrotoxic in the country.



Photo: FINCA

NAVDANYA INTERNATIONAL REPORT: POISONS IN OUR PLATE – GLYPHOSATE AND OTHER POISONS, FROM FIELD TO TABLE

Navdanya International in collaboration with A SUD and CDCA in Italy launched a report: “Il Veleno e’ servito: glifosato e altri veleni dai campi alla tavola⁴⁸ (Poisons in our Plate – Glyphosate and other poisons from field to table)”. The report underlines the imperative that citizens everywhere should become aware not only of the very negative and disturbing effects of glyphosate on our health and environment, but also of the system which supports and promotes the distribution and commercialization of this product, as well as of the countless other poison-based products widely used in industrial agriculture, which ends up in the food on our plates⁴⁹.



Photo: Manlio Masucci

A TRIBUNAL AGAINST MONSANTO

The Monsanto Tribunal, which took place in The Hague on 15-16 October 2016⁵⁰, was an opportunity for victims, doctors, academics and international lawyers to report environmental and social damage caused by Monsanto, especially in relation to the impact on health and the environment of the company's glyphosate based product RoundUp.

The legal opinion⁵¹ of the judges of the Monsanto Tribunal was issued on 18 April 2017. The Judges concluded that Monsanto has negatively acted on the right to a healthy environment, the right to food and the right to health.

The Judges have also encouraged international institutions to prioritize the protection of the environment and of universal human rights against the conduct of corporations, which are also violating the right to freedom of scientific research. International law should now recognize, with precision and clarity, the rights of the environment and the crime of Ecocide.



Photo: Manlio Masucci

The Monsanto Tribunal confirmed the danger of toxic chemicals and products such as Round-Up (glyphosate) and Basta (glufosinate), neonicotinoids, atrazine, and other poisonous pesticides that have caused soil desertification, extermination of bees and health issues increase.

The judges have recognized how, during the last half century, companies have created the myth that poisonous chemicals are “necessary to feed the world.” For the chemical industry the only aim was to diversify and increase their profits after the end of the war, but for the planet and its inhabitants, the costs were very high: instead of nourishing, industrial food has become one of the major causes of illness and widespread poverty.



Photo: Navdanya



NOTES

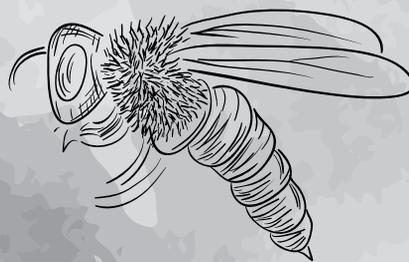
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