

GMO Bio-Imperialism

[GMO Bio-Imperialism](#)

by [Dr. Vandana Shiva](#), [Navdanya International](#)

April 26, 2024

Over the past few decades, GMO crops have been imposed in countries around the world, touted as a solution to food insecurity and malnutrition crises. However, hunger, disease and malnutrition have increased, while biodiversity has declined and toxins have spread. GMO imperialism has destroyed the lives and livelihoods of small farmers and biodiversity in the centers of origin. These centers of biodiversity origin are the cradles of the world's food supply and protection against disease, climate challenges, natural disasters or other obstacles to food production.

In Mexico, which is the center of origin of corn, there has been a long struggle by society and organized communities against GMO imperialism which threatens the subsistence and culture of local peoples. It is following this mobilization that the Mexican society obtained a ban on planting genetically modified corn through a collective lawsuit brought against the companies Bayer-Monsanto, Syngenta and Corteva Agriscience. This ban is still in effect.

Recently, the Mexican government issued an executive order phasing out the use of glyphosate and banning the use of genetically modified corn in tortillas, a staple food. Faced with this decision, the US government, on the basis of the United States-Mexico-Canada Free Trade Agreement (USMCA), activated the dispute resolution mechanism with the aim of canceling the order and forcing the introduction of GMOs into the country.

The Mexican government as well as the non-governmental organizations from Mexico presented their Technical Opinions before this Panel, based on detailed scientific evidence, including new found evidence by Mexico's scientific advisory board CONAHCYT, rooted in scientifically rigorous evidence from academic institutions. This evidence pointed out and warned about the multiple risks that make it pertinent and urgent to stop the presence of genetically manipulated maize in the food of the Mexican population, and as raw material for other industries.

From 12 to 16 March 2024, Navdanya International, together with Latin American partners and the Mexican Government, organized a series of events in Mexico City to build a common strategy against the imposition of new and old GMOs. The mobilization in Mexico City counted on the presence of representatives of Latin American movements such as Argentina, Colombia, Bolivia, Costa Rica and others, in collaboration with Mexican civil society organizations, the Ministry of Agriculture and Rural Development, the Ministry of Environment and Natural Resources and the Ministry of Culture. It was at the Ministry of Culture that the Garden of Milpa, the biodiverse traditional farming system of Mexico, was blessed at the Museum of Corn.

The case of Mexico represents the attempt of a people to protect their biodiverse cultures, their thousand-year-old food heritage, the health of their population and ecosystems. It is the case of a people who demand respect for their sovereignty and represents a beacon of hope for the places where this imposition continues. People have the right to have sovereignty over their health, and that starts with food sovereignty.

However, the GMO agenda has always been about patents and profits, not food and health. Food sovereignty is a high-level concept, because it implies the sovereignty of beings to manage and organize themselves and protect their right to

health. This is why the goal of industrial agriculture has always been to push farmers off the land. It is inherent in the very definition of industrial agriculture. The sovereignty of people, farmers and nature has been violated by the imposition of agrottoxins, GMOs and ultra-processed foods, destroying diversity and ancient food cultures and threatening land, water and biodiversity.

Agribusiness and biotechnology giants are trying to circumvent existing biosafety regulations, such as the Cartagena and Nagoya Protocols of the Convention on Biological Diversity, by subtly making changes to GMO regulations, in order to promote GMOs under new acronyms, such as NBT (New Breeding Techniques), NGT (New Genomic Techniques) or TEA (Techniques of Assisted Evolution). These new GMOs have been silently inserted into the agricultural legislation in force in various countries, with the aim of maintaining patent monopolies in the hands of the chemical and biotechnology giants.

Today, our seed sovereignty is threatened by intellectual property rights and new GMO technologies that have transformed seeds from a common good into a commodity under the control and monopoly of multinational agri-food companies. Impositions continue to take place, violating the sovereignty and rights of people and nature, in furtherance of the corporate agenda. While multinationals get rich by stealing our biodiversity. Faced with this, building relationships, based on common struggle and the vision of an ecological future, contributes to creating international networks of resistance and solidarity. Together, as global citizens, we must unite to oppose the bullying of GMOs and defend our seeds.

Citizens are rising up against the unscientific, anti-democratic and anti-ecological imposition of GMOs by multinationals and the US government. The first generation of GMOs failed. But multinationals continue to impose genetically modified organisms, or new GMOs, in centers of diversity. They continue to shift the narrative towards framing nature and

biodiversity as commodities to be commercialized and monopolized. In the wake of Mexico's battle against the United States, it is necessary to support and strengthen international solidarity against the corporate imposition of industrial food systems.

[Connect with Dr. Vandana Shiva](#)

Cover image credit: [Nguyen_Khac](#)

Bio-imperialism vs. Bio-diversity

[Bio-imperialism vs. Bio-diversity](#)

by [Navdanya International](#)

April 15, 2024

Global Context: Seeds and GMOs

Seeds are emblematic of the connections between our lives, our food, our health and our freedom. They are the first link in the food chain. They embody our heritage and enfold the future evolution of life. The cultivation of seeds and their free exchange among farmers is the core foundation of our biodiversity and our food security. To have control over seeds is to have control over our lives, our food and our freedom.

Bio-imperialism severely threatens this freedom today through intellectual property rights. Old and new GMO technologies that have transformed seeds from a commons shared by farmers,

to a commodity under the control and monopoly of agribusiness corporations. This imperialism seeks to appropriate the world's seeds, destroying the lives and livelihoods of peasant communities, as well as biodiversity, but more seriously, in territories recognized as centers of origin. These centers of origin of biodiversity are the cradles of the world's food supply, and the protection against plague, climate challenges, natural disasters or other hindrances to food production.

Also read: [Resisting GMO Imperialism – Events in Mexico – March 2024](#)

Over the last few decades, GMO crops have been imposed in countries all over the world, advertised as a solution to food insecurity and the malnutrition crisis. However, hunger, disease and malnutrition have increased, while biodiversity has declined and toxins have spread. Corporations have forced the introduction of genetically manipulated seeds to impose Food Imperialism through various tools such as regulatory frameworks for intellectual property of seeds, such as UPOV 91, and other legal mechanisms like Trade Dispute Settlement Panels. GMO imperialism has destroyed the lives and livelihoods of small farmers and biodiversity around the world and especially in these centers of origin.

Most recently, agribusiness and biotech giants are attempting to bypass existing biosafety regulations, such as the Convention on Biological Diversity's Cartagena and Nagoya Protocols by quietly making changes to GMO regulation around the world, in order to promote these new GMOs under new acronyms, such as NBTs (New Breeding Techniques), NGTs (New Genomic Techniques), or TEAs (Techniques of Assisted Evolution). These new GMOs have been silently dovetailing into different countries' existing agricultural legislation, with

the aim still being patent monopolies in the hands of the big chemical and biotechnology giants.

This deregulation would allow gene edited crops to:

- Be commercialized with no environmental or consumption safety testing
- Require no labeling
- Have little to no traceability
- Be free from public disclosure of gene edited organisms
- Mass deregulation
- Be patented without disclosure

These new GMOs are leaving farmers, and citizens completely in the dark as to what is in their food and are an attempt to subvert sovereign governments, the United Nations Convention on Biological Diversity and biosafety laws, with their imposition. The biotech industry has claimed that their gene edited products, including seed, plants, microorganism, and animals, are to be considered the same as their conventional counterparts. This deregulation of old and new GMOs absolves the biotech industry from any responsibility and is a continued attack on food sovereignty.

Agribusiness companies have not solved any issue for humanity on the pretext of false narratives around GMOs solving problems of food supplies. The true basis of the world's food supply is free seeds, the heritage of humanity that contain the answers to pests, climate challenges and other threats to the world's production of healthy and sufficient food, not GMOs and Bio-Imperialism. GMOs cannot be forced upon communities, violating norms of democracy and freedom.

All over the world, citizens are rising against the unscientific, undemocratic, anti-ecological imposition of GMOs by corporations. The first generation of GMOs has failed, but corporations continue to impose gene-edited organisms, or new GMOs, in centers of diversity. They continue to shift their

narrative towards framing nature and biodiversity as commodities for commercialization and patent monopolies.

Imposition of GM corn in Mexico has global ramifications

In Mexico, which is the center of origin of maize, just as in other centers of biodiversity, there has been a long struggle by society and organized communities against GMO imperialism threatening the subsistence and culture of its peoples. To date, Mexican society has achieved a ban on the planting of GM maize in Mexico through a class action lawsuit filed against the companies like Bayer-Monsanto, Syngenta and Cortiva Agriscience. This ban is still in force, which since 2013 has prevented the planting of genetically manipulated maize in Mexican territories.

Mexican NGOs have bravely continued to resist genetically modified maize to strengthen access to healthy, sustainable and culturally appropriate food for all people; to defend the food sovereignty of peasant and indigenous communities, responsible for developing the 59 breeds and thousands of varieties of maize existing in Mexico, which are also part of the milpa, a holistic, sustainable and biodiverse system that involves other staple foods such as beans, chili peppers, squash, quelites and amaranth.

Recently, the Mexican government issued an executive order that proposes the gradual prohibition of the use of glyphosate and the use of GM maize in food products, such as tortillas, a staple food for Mexicans. GMOs compromise access to healthy, sustainable, culturally appropriate foods free of genetically modified organisms. Faced with this decision, the U.S. government, based on the U.S.-Mexico-Canada Free Trade Agreement (USMCA), and under the duress, of agribusiness lobby, installed a dispute settlement panel to reject the Mexican government's decision to restrict the use of genetically manipulated (modified) maize in human food and the importation of glyphosate, citing lack of scientific evidence

of their harm. This Dispute Settlement Panel neglects the risks to human health, the environment and biodiversity associated with genetically manipulated maize. In addition, it jeopardizes the food sovereignty of the entire Mexican population, since maize is an indispensable food.

In response to this omission, on March 15th, non-governmental organizations from Mexico presented their Technical Opinions before the Panel, arguments based on reliable scientific evidence, including [new found evidence by Mexico's scientific advisory board CONAHCYT](#), rooted in scientifically rigorous evidence from academic institutions. This evidence points out and warns about the multiple risks that make it pertinent and urgent to stop the presence of genetically manipulated maize in the food of the Mexican population, and as raw material for other industries.

In stark contrast, the [US refused to do new experiments](#) and engage in real science and continued to stick to pseudo-science funded by the same agribusinesses that produce this GM corn and [make the unscientific claim that it is safe to consume](#) this GM corn.

The case of Mexico is a people's attempt to guard their biodiverse cultures, inheritance, food, health and fields. It is a case of a people demanding their sovereignty be respected. It is a statement to the world and to agribusiness that they cannot continue to impose their system that violates and destroys sovereignty at all these levels, and has wave after wave destroyed health, the land and biodiversity.

On March 5, 2024 Mexico published its [formal response to the dispute](#) where its submission presented evidence supporting the implementation of precautionary measures aimed at safeguarding consumers from potential health risks associated with imported GM corn from the U.S. and residues of glyphosate. They noted that the scientific data regarding the safety of GMOs presented by the U.S. was outdated, with a significant portion

originating from industry-sponsored studies lacking peer-reviewed support. They pointed out that the regulatory process in the U.S. lacks sufficient stringency to guarantee the safety of products for consumption by Mexicans. Furthermore, the [Mexican submission highlighted](#) that Genetically modified (GM) corn, designed to eliminate insect pests, has strong potential to pose negative effects on non-target animals with research that has demonstrated that mammals can experience harm to their digestive systems due to a GM trait that targets the guts of pests, leading to unintended consequences.

While the US claimed that Mexico's ban is "unscientific", [IATP Senior Advisor Timothy A. Wise highlighted](#) that Mexico's response "refutes that claim, presenting hundreds of academic studies that show cause for concern about human health and the threat to native corn diversity."

Significantly, The US claim that Mexico's ban is unscientific is completely unjustified as the US never signed onto the Convention on Biological Diversity and the Cartagena Protocol on Biosafety. It has no biosafety regulatory organism to judge the safety of these GM foods. It is based instead on "substantial equivalence" which is [not enough to be considered as a safety assessment in itself](#). This principle doesn't prioritize consumer protection from health risks nor does it provide consumers with comprehensive information regarding the actual level of risks and hazards associated with "novel foods" (in this case GMO foods) compared to traditional ones.

In its formal submission to the trade dispute panel, Canada aligned itself with the arguments presented by the US government, claiming the safety of genetically modified (GM) corn for consumption in Mexico. However, CBAN's ([Canadian Biotechnology Action Network](#))'s response [refuted this stance by asserting that scientific evidence supported Mexico's precautionary measures](#), particularly due to the extensive use of minimally processed corn in the daily diet of the majority of Mexicans.

[Lucy Sharratt of the Canadian Biotechnology Action Network \(CBAN\)](#), stated that, “Mexico is a sovereign nation with the right to determine the future of its food supply and its needs to take action to protect native corn from GM contamination.”

Globally, Mexico’s case is important due to the current context of the world. Due to the industrial food system, we are seeing the rise of chronic diseases rooted in metabolic disorders, increasing ecological disasters, lack of water and declining biodiversity. Mexico defending its cultural and food heritage is equivalent to a country taking a stand, backed by scientific evidence and government support, against the continuation of these multiple crises.

Furthermore, the significance of this case is that an unfavorable resolution for Mexico in this Panel, would limit Mexican people’s right to decide which seeds to plant and which types of maize to feed themselves with. This directly jeopardizes the traditional Mexican cuisine which is central to the cultural identity of the communities that practice and transmit it from generation to generation and has been [recognised as Intangible Cultural Heritage of Humanity by UNESCO](#).

This in turn also has the potential to devastatingly affect all other centers of biodiversity and interconnected food cultures around the world who will continue to face such attacks on their sovereignty.

Mexico holds the legacy of being [one of the first constitutions globally](#) to incorporate enforceable social rights, encompassing health and a clean environment (Article 4). Thus, a right to health is [a legally enforceable provision](#) under its national constitution. This along with achieving [universal health coverage \(UHC\) for its 100 million citizens](#) makes Mexico a country that continues to stand up for biodiversity, for health, for the environment.

Convergence: Interconnected strength, interconnected resistance

In the face of this local and global Bio-imperialism, Navdanya International joined together with the campaign Sin Maiz No Hay País, and Via Orgánica, along with the Ministry of the Environment and Natural Resources (SEMARNAT), the Ministry of Agriculture and Rural Development (SADER) and the Ministry of Culture, along with other Latin American movements to organize events from March 12th to 16th in Mexico City to carve a common strategy against the further imposition of new and old GMOs around the world, sharing experiences, struggles and solidarity in defense of Biodiversity, Food and Seed Freedom, through strengthening the support and solidarity, in cultivating and connecting different organizations, movements and people.

These meetings and convergences helped create a gathering place for solidarity by bringing together representatives from movements from all over Latin America and beyond to demonstrate that this struggle goes beyond individual borders. All over the world the impositions continue to take place, directly violating the sovereignty and rights of people and nature, in favor of corporate agenda.

José Bernardo Magdaleno Velazco (Nino), President of the Peasant Union, Totikes, Chiapas emphasized that “we are not alone in this fight”. Together with activists and organizations such as the Campaña Nacional Sin Maíz No Hay País, Semillas de Vida, Vía Organica, Regeneration International, Bloque Verde, Probioma, Naturaleza De Derechos, and Semillas de Identidad- Colombia, Navdanya International joined the demand for governments around the world to stop genetically manipulated seeds, which threaten the survival of food and agricultural systems based on biological and cultural diversity.

These events carved a convergence of movements, to stand in

defense of our biocultural diversity and food heritage across the world, in resistance to old GMOs and new GMOs.

It is in this coming together of different movements and voices united in their goal of food and seed sovereignty that these events in Mexico led to the emergence of an interconnected strength and resistance. Where the nurturing of solidarity and a reminder of a common resistance despite varied contexts, echoed and re-iterated that together, we are all more than the sum of the parts. Building relationships and connections, across organizations, across movements and beyond countries is necessary for effectively resisting this GMO imperialism. This interconnected strength is what we have to tap into, to continue our struggle in defense of life, diversity and freedom.

Significance: Food sovereignty as a driving force for political sovereignty

The current socio-political context of Mexico's demand of autonomy based on being a center of diversity and cultural heritage is unique because food sovereignty is the driving force behind the political sovereignty of the people. This reiterates that every kind of autonomy is rooted in food and seed.

At the event held on **March 12, 2024** at Mexican Ministry of Agriculture and Rural Development (SADER), Mexico City called "In Defense of Food Sovereignty", Dr. Vandana Shiva, President of Navdanya International in her keynote lecture on food sovereignty, mentioned that it was so important to celebrate cultures where cultural diversity and biodiversity are not seen as separate. She added that "Food sovereignty is a high level concept, because it implies the sovereignty of beings to manage and organize themselves toward health." The cultivation of biodiversity has to imply sovereignty at all levels. Sovereignty is needed at all levels for organisms to be able to freely develop and evolve, self organize toward health.

Leydy Pech, evocatively added in the same event that “In Maya, we have no word for GMO, we call them instead seeds that have no heart, seeds with no life.” Furthermore, she asked a significant question, potent for everyone around the world: “Our seeds, our knowledge is our inheritance, with this destruction what will we inherit in the future?”

As also highlighted by Jesús Ramírez Cuevas, general coordinator of social communication and spokesperson for the Government of the Mexican Republic, “Mexican sovereignty starts with food sovereignty.” It is food sovereignty and the sovereignty of all interconnected beings to self-organize and grow with health that holds the power of resistance politically, economically and socially.

GMO imperialism is an attack on this sovereignty of all interconnected beings at all levels of self organization. It is an attack on life itself.

As Leydy Pech echoed: “You cannot call what goes against life, development”. Dr. María Elena Álvarez-Buylla Rocés, general director of the National Council of humanities, sciences and technologies (CONAHCYT) said that “On a global level the deregulation and imposition of GMOs and toxic food systems is a denial of sovereignty and right to health on multiple levels.” She added that Mexico’s success in asserting its own sovereignty on seeds and food policies would be a beacon for other countries to be able to assert their food sovereignty and seed freedom in turn.

Biodiversity at all levels

A Seminar on Biodiversity Protection titled “Protection and Conservation of Biodiversity in Centers of Origin” was held on **March 15, 2024** at the Mexican Ministry of Environment and Natural Resources (SEMARNAT) Headquarters, Mexico City. This seminar analyzed and discussed strategies to conserve and protect natural resources in countries that are centers of origin and genetic diversity of species, through a dialogues,

work round tables, and discussions for common strategy with key actors of the Mexican government, representatives from Latin America, Asia, the United States, and others in the protection and conservation of biodiversity in Latin America and other regions.

Maestro Iván Rico López, Subsecretary of Environmental Planning and Policy, SEMARNAT highlighted that “Megadiverse countries, the centers of origin of crop varieties, have greater responsibility in protecting the world’s biodiversity. We have learned that our plant genetic heritage is our cultural heritage. Natural and Social aspects go hand in hand, as those who have preserved the genetic diversity are the indigenous peoples.”

Columba López, Director of the Commission for Natural Resources and Rural Development, CORENADR, emphasized the key to this biodiversity being in the hands of the farmers. It is the farmers who are the custodians of these biodiverse foods, cultures, seeds, knowledges. She said that “We work on native seeds in our Seed Houses. We cultivate and replicate seeds through agroecological practices in the field. We develop seeds that adapt in the mountains or near the water, that are climate resilient and we do it through farmers’ participatory breeding.”

Biodiversity at all levels produces health, diversity in our farms, our seed, our foods, our cultures etc. having a biodiverse field in line with local ecosystem and cultural heritage, gives us a diversity of foods, and a diversity of food cultures. This is how we create health first in our fields all the way to our plates and our guts.

Dr. Vandana Shiva, of Navdanya International highlighted that, “Indigenous peoples and communities know that seeds continuously evolve. By turning biodiversity into technology they (corporations) deny the creativity of biodiversity, they go against how nature works. Diversity is a living necessity.”

She further reiterated that, “The colonizing mentality considers living beings as disposable and nature as raw material to be extracted. Mexico is recovering the dignity of natural resources, which are the basis of our health and well-being & the health of the planet.”

Similarly, at the event held on **March 16, 2024** held at Cencalli, Museo de maíz y centro de la cultura alimentaria, Los Pinos, Ciudad de México, in the presence of the Alejandra Frausto Guerrero, from the Ministry of Culture, Victor Sanchez reaffirmed the need to resist the food imperialism that destroys our cultures by defending our biodiversity and strengthening seed freedom. Navdanya International co-organized this event with [Campaña Nacional Sin Maíz No Hay País](#), [Via Organica](#) and [Regeneration International](#). Andre Leu, Director of Regeneration International, discussed the latest evidence of negative health effects caused by exposure to glyphosate: “There’s scientific evidence about the correlations between the introduction of glyphosate and transgenic crops and the increase in diseases such as cancer, obesity, kidney failure and autism.”

Mercedes López Martínez from [Vía Orgánica](#), Mexico, discussed the great importance of protecting small farmers and indigenous communities as the backbone of a thriving food culture. Miguel Ángel Crespo of [Probioma, Bolivia](#) shared how, “The fight to protect biodiversity and genetic resources is also political, legal and scientific.”

It is this interconnection of diversity at all levels, including diversity of organizations and movements reflecting the interconnection and sovereignty of organisms that is needed to resist GMO imperialism from the ground up.

Also read:

[Vandana Shiva makes an International call to support Mexico in](#)

[the defense of Seed Freedom and Biodiversity](#)

[Events in Mexico: Resisting GMO Imperialism](#)

[Joint Declaration in Defense of our Biodiversity, Seed and Food Freedom – Resisting GMO Imperialism](#)

[Open Letter from Diverse Women for Diversity to World Leaders](#)

[US pressure to impose GM corn in Mexico threatens global genetic heritage of Maize Diversity](#)

[Connect with Navdanya International](#)

Cover image credit: [GildAix](#)

How Green Is Lab-Meat?

[How Green Is Lab-Meat?](#)

by [Navdanya International](#)

July 28, 2023

Synthetic foods are the next generation of ultra-processed foods made through the hyper-processing of industrially produced crops, a combination of processed and artificial ingredients and completely new ingredients produced through synthetic biology, (or so called 'precision fermentation'), and cell-culturing. These products use a combination of gene editing used for the precision fermentation, industrial ingredients, and traditional commodity supply chains to create a product that only further entrenches our already highly

problematic and destructive globalized food system.

Why lab-made meat and dairy is not an option:

- **These false solutions will only reinforce and continue industrialization- which is the real culprit of the climate crisis.** The issue of unsustainable food systems comes from the inherent unsustainability of the industrialization of all areas of food and agriculture. Whether that be through the industrial raising of animals through CAFOs (Concentrated Animal Farm Operations) where animals are force-fed industrially grown, pesticide-laced grains and soy, or the further industrialization of food now being made in a lab. These two things stem from the same corporations, the same mentality and the same denial of the industrial, globalized food systems devastation on the planet.
- **Lab-cultured food is a [fake solution](#) that aims to replace products without challenging the power structures that underlie the corporate, industrialized agricultural model.** It moves attention away from the real solutions offered by the growing regenerative agriculture movement and disregards the role of small producers and food communities in shaping our food systems. Regenerative, agroecological farming practices have the potential to [sequester 52 gigatons of carbon dioxide](#), as they can harvest 733- 3000 kg or more of carbon dioxide per hectare, per year from the atmosphere, equivalent to the amount needed to stay below the 2 degree centigrade range. By increasing carbon absorption, [organic farming has a lower climate impact](#) than industrial agriculture.
- **The dichotomy does not stand as industrial CAFOs versus lab-meat.** This false binary erases the role of agroecological small farmers, and pastoralists and treats them as if they were the same as industrial

agriculture. Both CAFOs and lab-cultured meat concentrate power into the hands of a few. While agroecological systems are based on generations of ecological knowledge, local food culture and ecological resilience that support local food sovereignty.

- **The true solution is agroecological systems that work in harmony with nature**, that regenerate ecosystems and ensure the health and well-being of plants, animals and humans. Ecological systems based on integration of agroecosystems promote food sovereignty, food democracy. The real solution does not lie in creating substitutes for food, it lies in understanding the needs of the ecosystems we are embedded in and healing our connection with nature.
- **The same circle of businessmen and corporations that pushed for the Green Revolution, and the industrialization of food systems, are the very actors behind these lab-made products**. Actors such as Bill Gates, Jeff Bezos and meat industry giants like Tyson foods, JBS, Cargill, Nestlé, and Maple Leaf Foods are behind the push for this new market where investment has now reached \$2.78 billion. synthetic and lab-cultured foods are quickly becoming a next means to consolidate even more power and profit into the hands of a few food giants without holding them accountable to the consequences of the system they perpetuate.
- **Handing over control of our food to a handful of multinational companies only makes us more dependent on them**, creating a fully integrated food and agricultural system, controlled by profit. This erodes our food sovereignty, and food security, while having potentially detrimental consequences on local food systems, and ecological systems. What is at risk is the final elimination of small farmers, of traditional agroecological practices, and traditional diets. To

follow through with the massification of lab-grown meat would mean the final, complete separation of food from nature.

- **These products still rely on long-distance globalized supply chains, and derivatives of the industrial food system.** For example, to run, these bioreactors require large amounts of nutrients for cells to grow and reproduce. Given the limited production of individual amino acid formulations suited for cell culture globally, one hope is to use [industrially cultivated soy to derive the full amino acid profile](#) necessary for cell growth. This would work to only further entrench the already destructive cultivation of soy. Therefore defining these products as environmentally friendly, and sustainable, is just a greenwashing ploy to profit off a new generation of environmentally conscious consumers who are growing critical of the grim realities of industrial food production.
- **It is unlikely these products will be any healthier or safer to eat.** These ultraprocessed foods are made from refined ingredients which means that they lack many of the nutrients found in traditional foods. Nutrients and fortifiers will need to be added as separate ingredients and [cannot be absorbed](#) as effectively as they would from whole foods, and can cause harmful interference with other nutrients. As a result our bodies may derive less health benefits from them and therefore they should not be part of a nutritious and environmentally friendly diet and should be classified as Junk Food.
- [According to a report by the FAO](#), the complex process of cell-culturing also leaves many opportunities for contamination from toxic heavy metals, organic pollutants, cleaning products, toxic bacteria, additives and preservatives, left-over antibiotics, growth hormones or other chemical or material contaminates. The

presence of any of these contaminants, whether individual or in combination, would pose serious food safety risks to consumers.

In the end, these “Frankenstein foods” dismantle our connection with nature and in doing so, they ignore the role of natural processes and the laws of ecology that are at the heart of real food production. By promoting the illusion that we live outside of nature’s ecological processes, this new technology will only serve to increase corporate control over food and health, accelerate the collapse of local food economies and further destroy food democracy. The real solution to the environmental, and health crises should be based on an active rejuvenation and regeneration of the planet by working with ecological processes through agroecological and regenerative farming practices.

Real food made through real farming is the direct result of a process of care for the land, animals, and fellow humans that celebrates the connection between food and life. It protects the life of all beings on Earth while also nourishing our health and wellbeing. [Artificial food is a direct manifestation of years of food imperialism](#) and colonization that has denied our diverse food knowledge, food cultures, and disregarded the biodiversity of the earth and its ecosystems.

[Connect with Navdanya International](#)

Cover image credit: [kartynas](#)

Green Light for New Gene Editing Techniques: Threats and Corporate Interests Behind New Wave of GMOs

[Green Light for New Gene Editing Techniques: Threats and Corporate Interests Behind New Wave of GMOs](#)

by [Navdanya International](#)

July 8, 2023

For the last few years, agribusiness and biotech giants have been quietly making changes to GMO regulation around the world, deepening and entrenching their monopolistic grip on the global food system.

Today the effects of this lobbying also reached Europe.

On July 5, 2023, the European Commission released [a proposal](#) to exclude a large part of the new GMOs, or organisms genetically modified through new genetic editing techniques, from existing GMO regulations that require traceability, labeling, and risk assessment for genetic engineering products. The new regulation considers plant products deriving from genetic editing, of “category 1”, or equivalent to those that “could have been achieved with classic techniques like seed selection and crossbreeding”.

Through this proposal, the products obtained with genetic editing can contain up to 20 different genetic modifications and would be considered “equivalent” to all conventional plants and products, without the need to explicitly declare their nature as genetically modified.

The European Union represents the last bastion against the imposition of these new technologies. Therefore, it is essential for environmental, ecological, and human health and safety to require that these new genetically modified organisms be labeled, and subjected to independent evaluations. Also meaning that their process of production, sale, and distribution be carefully regulated.

Second generation GMOs

Over the last five years, new gene-edited technologies, denominated under an alphabet of new acronyms, from NBTs (New Breeding Techniques), NGTs (New Genomic Techniques), and TEAs (Techniques of Assisted Evolution), have been silently dovetailing into different countries' existing agricultural legislation to by-pass any existing regulations and safety checks set in place for GMOs.

The logic used around the world to justify the deregulation of what is nothing but a new generation of GMOs is based on statements coming from the influential biotechnology sector. According to them, these products obtained through genetic editing (including seeds, plants, microorganisms, and animals), are to be considered harmless as gene editing would allow them to mimic nature's natural mechanisms of genetic evolution and reproduction, now only faster. According to the large agrotech companies operating in the sector, since these techniques do not involve the insertion of foreign DNA through transgenesis, they cannot be considered equivalent to the first generation of GMOs and can therefore be regulated like conventional crops, microorganisms, and animals.

A question of biosafety

As demonstrated by numerous independent studies, however, gene editing is not as accurate, safe, or sustainable as the industry claims. The process, considered as a whole, induces hundreds [of unwanted mutations](#) throughout the plant genome. This may affect multiple gene functions with unknown

consequences to cell protein biochemistry and metabolic activity.

We have already seen how the promises of food security, sustainability, and adaptation to climate change which in the past justified the use of highly toxic chemicals, GMOs, and the unlimited expansion of monocultures, have been severely disregarded.

Considering the devastating consequences already caused by the industrial food system in terms of environmental pollution, loss of biodiversity, climate destabilization, and the destruction of small rural economies, there is little reason to believe that the scenario will be different for new genetic editing techniques. Especially when the actors behind this push are the same ones who have fuelled an agricultural model of exploitation and ecological disaster for decades.

The exclusion of gene edited products from regulation, traceability, and labeling and the lack of independent research on their actual safety for human health and the environment, would leave consumers and farmers unaware of the type of GMOs released into nature, the risks associated with their spread and the ecological and/or health damage they can cause. Directly violating the precautionary principle to protect the rights of citizens, farmers, and of the environment.

Food sovereignty under attack by multinationals

This lack of transparency appears to serve to absolve manufacturers of any responsibility and represents a further attack on food sovereignty. Also understood as the fundamental right of people to healthy and safe food, produced by ecological methods and adequate information on the origin and production methods of food.

The lack of in-depth research on the safety, as well as the long-lasting effects of gene edited products on the

environment, undermine this fundamental right and encourages the centralization of food systems to the detriment of local food systems.

A closer analysis is sufficient to bring out all the interests at stake in this very dangerous game. Indeed, the deregulation of gene editing around the world has opened the door to the advent of a new "bioeconomy," which is a new method of economic production based on manipulating the genetic information of microbes, plants, and animals to "program biology" to make it more economically productive.

What is really at stake is a further process of corporate appropriation and control not only of our food system but of all living systems. In this new "bioeconomy," the goal of biotech and agrotech companies is to make gene editing and biological engineering the main tool for producing and processing all natural material, reducing agribusiness production to an artificial system of exclusive patents and licensing.

"Organic" and "No GMO" labeling are thus likely to disappear in favor of more generic labels such as "healthy" or "sustainable," regardless of the process used to create the product.

The deregulation of gene editing biotechnology is opening up huge new profit potential for the major players in global agriculture. Regardless of the regulatory definition that equates these products with conventional ones, companies continue to file hundreds of patents using these new technologies to further strengthen their control over food systems.

The advent of these new technologies is enabling companies to patent specific genomic sequences by circumventing the foundations of current biosafety regulations established by the Convention on Biological Diversity and the Nagoya

Protocol.

The real solutions to the climate and food crises

The agribusiness industry's attempt to reduce the complexity, diversity, and richness of life forms to a mere matter of genetics, treating food and crops as mechanical products, only further endangers the world's biodiversity, ecological systems, and people's health.

The desire to control everything living, and the very constitution of living things, is an attack on diversity and life. Diversity is the basis of life on the planet and is the only antidote we have to create ecological, health, and climate resilience.

After centuries of dominance of a mechanistic, reductionist, and linear worldview, we should see that the solution to the multiple crises of the present cannot come from further manipulation or control of nature.

New gene editing technologies continue to shift attention away from the real alternatives that can drive ecological regeneration. The solutions lie in the creation of ecologically integrated systems based on biodiversity, care, and science that understands and respects the interconnections between life and nature.

[Connect with Navdanya International](#)

Cover image credit: [dmncwndrlch](#) & [congerdesign](#)

The Attempted Destruction of Land-based Cultures

[The Attempted Destruction of Land-based Cultures](#)

by [Navdanya International](#)

March 1, 2023

Real food is how our bodies are [interconnected](#) to the web of life on Earth. We are so deeply interconnected that our [microbiome forms a continuous, reciprocal macro-organism](#) with the microbiome of the soils. We are so connected that the debilitation of health of one aspect of our food web, goes on to have a direct effect [on our health](#).

But since the advent of industrialization, we have been systematically displaced from the deep, inherent relationships we hold with our food. This systemic displacement of our relationships with the Earth, and with our food systems, has now resulted in multiple overlapping global emergencies: the ecological crisis, the health crisis, and livelihood crisis. These multiple emergencies are not separate, they are interconnected and they have their root in a growing dependence on a dysfunctional paradigm.

The industrial, [globalized food system](#), based on toxic chemicals, monocultures and unsustainable globalized supply chains, represent a denial of the fact that our health is a continuum coming from the health of our planet. From the biodiversity in the soil, of our foods and in our gut microbiome. The **destruction of biodiversity, thanks to industrial agriculture**, is now contributing to disease and sickness for the Earth and her beings, including humans. **The planet's health and our health are inseparable.**

Through the imposition of industrial systems small farmers and **local food communities have deliberately been destroyed** in favor of corporate power, and the health of people, the planet and food systems has been purposefully disregarded. Now the very corporations who have perpetuated the Earth's destruction are attempting to try and convince us they [hold the solutions](#) to our multiple crises.

In order to erase the last remaining small farmers, **corporate-sponsored narratives** are now **pushing for the reduction of complex ecological collapse, and climate change, into dualistic narratives around [plant versus animal](#)**, instead of addressing the larger crisis of how current industrial practices are destroying the Earth's ecosystems. In these false dichotomies [animals are now being blamed instead of industrial systems as a whole, for the food system's impact on climate and health.](#)

This has been the case with the **Brucellosis disease spreading through [buffalos in Italy](#)**. A disease caused by the industrial CAFOs of buffalos, which is now being used as an excuse to push false solutions to climate change and food shortages. Small-scale farmers were forced to cull their animals due to the diseases caused by industrial production, **effectively [destroying the livelihoods](#) of the real small-scale producers** of mozzarella. Amid this destruction of real food, and real food culture, **Fake Food companies**, like German start-up company Formo, **received [record funding](#) to produce lab ricotta and mozzarella**. Allowing them to take advantage of the destruction already caused by the industrial system.

The integral, complex, and interconnected husbandry of animals in many traditional cultures around the world is now being lumped in with industrial animal production, effectively erasing the importance of these traditional land-based cultures. In these false climate narratives, **animals have also been reduced to mere products for protein**, that can

simply be replaced by more efficient technologies such as [lab-engineered products](#).

Climate reductionist narratives and their false solutions are effectively **ignoring the [multidimensional and essential roles animals can fill in diverse agroecosystems](#)**. It thus completely ignores our relationship with nature and creates a rift separating humans from nature and food from life. While it is a fact that all industrial production systems, whether for plants or animals, are heavily responsible for ecological collapse, agroecological and small-scale systems are not one in the same.

So, are we going to look to those who regard land, food, and life as extractible, commodifiable, profitable objects to solve the problem which stems from the fundamental disconnection to the Earth and Life? Or do we look to the **generational stewards, the indigenous people who speak for their lands, the independent scientist evolving the science of agroecology, and the careful small farmer**? Who are the ones that can teach us how to care for the Earth?

Sardinia as an Example Under Threat

One example of where this conflict is raging is the island of Sardinia. For centuries human settlements in Sardinia have been characterized by the presence of shepherds who have a **long-standing tradition of co-existence and integration between human communities, animals and the surrounding ecosystem. Animals have always been part of community life, culture and traditions, especially in relation to food and agriculture.**

In the Sardinian context, many define the local food systems as **agro-pastoral systems**, highlighting the inherent integration of pastoralism (e.g. traditional animal husbandry) and agricultural practices. Moreover, **Sardinia is an emblematic area of inquiry** in terms of **complex and genuine food systems** in the Italian context. The region has the

highest number of traditional shepherds and is world famous for its historic dairy culture and diversity in food products. **Animals are intricately intertwined with local culture, traditional food and the islands' identity,** as many shepherds see themselves as custodians of the agro-pastoral history and tradition of their regions. Through their work and practices they maintain their language and typical food systems alive and pass their knowledge to the next generations.



In these systems **shepherds consider their animals part of their family.** They could not live without their animals and take care of them each and every day, and they see this relationship as a reciprocal exchange between humans, the environment and the animals.

Pastoral systems in Sardinia also maintain **a high-degree of multifunctionality in agricultural practice and biodiversity cultivation.** Small-scale shepherds integrate several agricultural activities in their work, such as cultivating their own hay for their animals, growing their own vegetables,

organic olive oil production, organic wine production, with many having a variety of animals and trees, plants in their farms.

Traditional systems also require the local wild biodiversity to thrive and co-exist with the animals and farming activity. Especially as animals are deeply integrated and are used for the maintenance of marginal, and wild territories. For example, sheep and goats that graze in the mountainous wild areas, where fire risk in the current hot summers is higher, help keep the ecosystem in balance. Small-scale shepherds are not deforesting to make space for their farms, but are integrating the animals in the wild environment, taking care of the risk of overgrazing through a small amount of animals for extensive areas.

Nonetheless, over the past fifty years, along with the modernization & industrialization processes in agriculture and livestock farming, the **dairy and meat industry in Sardinia** has grown to unprecedented rates, switching to **intensive animal cultivation and large-scale export of local products** (milk, dairy products, and meat). Replacing the well-structured, local community exchange networks and local food economies where shepherds would traditionally sell their products to their local communities, contributing to the local economy and providing fresh genuine food to the territory.

In this context **many traditional small-scale shepherds and farmers are struggling to survive** with many traditional shepherds and pastoral communities disappearing. Therefore, the Sardinian context stands as a lively battlefield between small-scale, traditional, multifunctional shepherds and farmers and large scale, industrialized farms and dairy producers.

The disappearance of these communities means much more than just the transition of farmers to other forms of work. It means a loss of deep cultural ties, intimate knowledge of the

Sardinian territory. With their work so dependent on natural cycles and wild ecosystems, **shepherds have acquired a profound and ancient knowledge of the territory.**

They know their land more than anyone else and continue to inhabit inhospitable areas that would otherwise be abandoned. With their knowledge they are able to actively monitor changes in climate, water availability and the health of the soils. **If agro-pastoral tradition is lost, so is the cultural heritage, identity, local economy and liveness of local communities in Sardinia.** Real food and a crucial example of real sustainable practices that are being disregarded by current reductionist climate change solutions.

What about Fake Food

The case of **fake food is emblematic, among the false solutions** that are threatening land-based cultures and as a consequence of the false narrative that do not consider the huge difference between large scale animal farming in industrial food systems and the role of animals in ecological small-scale farming systems, like the ones in Sardinia.

Proponents of fake food [claim](#) that it provides a real solution to climate change, and environmental degradation, due to it not needing intensive water and land resources, while also [addressing concerns](#) over animal greenhouse gas emissions and animal welfare in the admonished meat industry. However, **the true purpose could not be further away from ending climate change or world hunger.**

These technologies represent a new wave of the [patenting logic](#) that was first applied to seeds during the Green Revolution. By being able to now fully control the entire food supply chain, from the genetic manipulation of these fake foods, to their lab production, to the distribution chains already controlled by big agribusiness. The Earth and small farmers will no longer be needed, with the exception of the mass monocultures already controlled by agribusiness.

Not to mention that **ultra-processed 'plant-based' fake, synthetic foods** that rely on dangerous technical innovations such as synthetic biology, CRISPR-Cas9 gene manipulation, and [new GMOs](#). These techniques involve **reconfiguring the genetic material of an organism** to create something entirely new, and not found in nature. Some companies are also investing in [cell-based meat](#), grown from real animal cells. The result is a whole range of lab-grown fake meats, eggs, cheese, and dairy products swarming the market to ultimately replace animal products and alter modern diets.

These foods are now quickly making their way into global markets, as for example, the US government has recently [opened the US market to synthetic meat](#), declaring it safe for human health and authorizing the Californian company Upside Foods to produce laboratory-made chicken meat. The first applications for authorization into the European market could start by this year.

As the agrifood industry is threatened by consumer apathy, big companies that stand to lose significant profits are trying to **tap into a new market of environmentally aware consumers** looking for alternatives. Hence, the promotion of these synthetic foods is nothing more than a **clever way to reorient profits back to the same old companies** by re-purposing the destructive technologies of the Green Revolution combined with new biotechnologies as a well-disguised 'sustainable alternative'.

Real Food cultures

Although it might seem that the issue of fake food is far from the day by day struggles that shepard's face in Sardinia, local communities, farmers and local movements are well aware of how it represents a present and future threat to their economy, and have been organising [events and debates](#), also thanks to the intense information campaign that has been carried out at national level by civil society

movements, [including Navdanya International](#).

Small producers, farmers and shepherds of Sardinia, are very keen on explicitly manifesting what they think is healthy food. To them, real food is food their ancestors would recognize. The foods they've eaten since time immemorial. Foods coming from their land, and local cultivation practices. This is especially the case as local food systems have been built through **well-structured local community networks, creating a local economy, where** shepherds sell their products to local shops or markets or through well-established informal solidarity networks in their communities, contributing to local economy and providing fresh genuine food to the territory.

What is now at stake is the erasure of millennia old food cultures, which throughout time have created complex expressions of culture, territory, and identity all entwined with co-beneficial relationships between agricultural cultivation, animals, wild biodiversity, landscapes and human communities.

We must see the **recentering of economies to be local, circular, and regenerative**, in line with ecological rhythms and boundaries that support these **symbiotic relationships. Not the destruction of them for the sake of corporate profit and reductionist ideals.** The defense of real food, and real food/land-based cultures is now more important than ever, as it also represents the defense of the small farmer, and the defense of our [relationship to life itself](#).

This means stepping back onto the path of life which has sustained humanity over millennia where **communities and cultures have co-evolved in their ways according to their climates, soils, and biodiversity, contributing to the diversity of food and farming systems, weaving biodiversity and cultural diversity symbiotically.**

© Navdanya International

[Connect with Navdanya International](#)

Cover image credit: [AdinaVoicu](#)