Giant corporations have taken control of our food. Today, just a few companies control what we eat and how it is produced. For them, food is money: companies and their shareholders aren’t interested in what food means to the people who grow and eat it, or what farming means for the environment. They are interested in the profits they can make from it.

The situation is not good, and it is getting worse: since 2015 a number of “mega mergers” have been proposed, or taken place. Six companies controlled most of the international trade in seeds and agricultural
chemicals in 2015. In the last two years, these companies have begun the process of **merging and re-arranging themselves** into just four colossal corporations. The larger these companies grow, the less we can control them. And the less control we have, the harder it is for us to build the kind of food system that more and more of us want: one that recognizes the value of people, respects the planet, and provides decent, dignified work.

**How did we get here?**

Our food wasn’t always produced this way, and it doesn’t have to be in the future.

For millennia people around the world produced food using thousands of different methods and systems adapted to their local environments. From the paddy fields of South East Asia to corn-squash-bean systems in the Americas, and beyond, people grew food in ways that were local, deeply integrated into culture, and tied to the land. Farming shaped festivals, customs, languages, arts, and religions. Farms were embedded in local ecosystems: people produced most of the fertilizers, pesticides, and fuel they needed to run their farms and most food was consumed close to where it was grown. In the last century, this has changed dramatically.

While international trade isn’t new, the amount of food moving around the world has exploded in the last hundred years. And, food has become more and more closely linked with money. Industrialization and the rise of Empires starting in the 16th century kicked off this process: global trade in wheat and sugar,
produced on large farms or on plantations worked by slaves, exploded and this cheap food helped to fuel the industrial revolution in Europe. However, while food was moved around the world in increasing quantities, until the 20th century most of the “inputs” farmers needed to grow it were produced on or near the farm. Farmers saved some seed from each harvest to be replanted, while manure from farm animals and the soil-enriching effects of plants like beans, were used to keep soil fertile.

In the 20th century, this all changed. Four discoveries made a new kind of farming possible and created huge opportunities for profit, not for farmers but for companies selling them newly marketed products. Those companies have done everything in their considerable power to make sure that this kind of farming has spread around the world. Many people today call this “industrial” farming, because it effectively turns a farm into a factory, with raw material going in and finished “products” coming out. Industrial farming was made possible by: tractors (and fossil fuels to power them), hybrid seeds, petrochemical fertilizers, and pesticides. Although many of these products were originally developed to benefit farmers, they have had far-reaching negative effects. To understand, let’s take a quick look at these products:

Hybrid seeds are crosses between two varieties of a plant. Farmers buy them because hybrid plants can produce more of a single crop in an acre of land.
But, unlike “open pollinated” seeds, the seeds of hybrid plants cannot be saved and re-planted. Seed from hybrid plants produces weak, stunted plants, or nothing at all. So, farmers using hybrid seed have to buy seed each year from a breeder. Hybrid seeds became big business in the 1920s, and opened the door to selling seeds for profit.

Tractors replaced the animals that had pulled ploughs and done other heavy farm work. The power of the machines meant farmers could plough and harvest much larger fields. They were also a key factor in driving farmers into debt, as they invested heavily to buy the machinery they now needed to compete.
The switch from animals to machines meant farmers had to buy not only fuel but also chemical fertilizers to replace manure. Chemical fertilizers became widely available when chemists discovered how to isolate nitrogen, a key ingredient in fertilizer, from the air, using “the Haber process,” an energy-intensive chemical reaction which was industrialized by German chemical company BASF in the 20th century.

Finally, pesticide is a general term for a chemical that kills weeds, bugs, or molds in order to “protect” a crop from them. In the 1940s many new chemical pesticides were developed and aggressively marketed to farmers. Pesticides can allow farmers to cultivate a larger area (e.g. because they do not need to weed by hand) and can make it possible to grow...
larger amounts of the same crop together, by killing all pests that might attack the crop (as well as other insects that might live on or around it).

In the space of a few decades agriculture, especially in Europe and North America, was transformed. Small-scale farms relying mostly on resources which were available locally for free or at an affordable price (sunshine, saved seed, human and animal labour, animal waste, and compost) were replaced by bigger and bigger farms, heavily dependent on external resources which needed to be purchased for cash: machinery, fuel, pesticides, fertilizers, and seeds.

While new technologies made this change possible, they didn’t make it happen. Many farmers resisted the shift to industrial farming, and many still do today. The shift from “on-farm” to “off-farm” inputs meant that many farmers entered, for the first time, deeply into debt. Farmers were encouraged, or pushed, to buy expensive machinery and more land.
This change made farmers’ survival dependent on their ability to sell (rather than eat) their products, and, in many cases, on their ability to secure loans to purchase necessary “inputs” at the beginning of each year.
Selling these inputs to farmers became first big business, then huge business. Agro-input companies, as the sellers of these products are called, partnered with governments, universities, and banks to make sure that this kind of farming spread, first across North America and Europe, and then to the rest of the world. In the United States, the Department of Agriculture told farmers to “get big or get out”. Farmers worked harder and took on more debt, and agro-input companies grew like weeds.

Around the world poorer countries were pushed into adopting this kind of farming as well, which reinforced internal inequalities and kept them dependent on inputs manufactured elsewhere, even as many won political independence from former colonial powers. In a process often referred to as “the Green Revolution” governments and companies pressured farmers in “the Third World” to adopt the new technologies of industrial agriculture, including commercially produced seeds and fertilizers. They argued that the higher yields these products allowed were key to bringing countries out of poverty, especially by producing food which could be sold to Europe and North America.

At the same time, new legal rights expanded what could be bought and sold internationally: the 1961 Union for the Protection of New Varieties of Plants (UPOV) (in Europe) and 1970 Plant Variety Protection Act (PVPA) (in the US) effectively decided that intellectual
property rights could be applied to living organisms like seeds. This opened the door to privatizing and controlling the sale of even those seeds which, unlike hybrid varieties, could be saved and re-used. These rights were further strengthened in the 1970s and 1980s, including rights to genetically modified organisms (plants or animals whose genes have been modified by some technology other than breeding). The “Trade Related Intellectual Property Rights” agreement of the World Trade Organization in 1994 sealed the deal.
These decisions made plant and animal genes into a kind of private property, allowing companies to charge royalties for their use, to sue farmers who save and re-use seed from a harvest, or even to encourage courts to bring criminal charges against them. Since 1997, Monsanto has, in their own words “only filed suit against farmers 147 times in the United States” for patent violations, including re-using saved seed. While many farmers, unable to afford the legal bills, settle out of court, so far Monsanto has won every case that made it to US courts and farmers have paid out more than $23 million dollars to the company.
The Companies

When international laws about plant varieties and intellectual property changed, chemical companies quickly recognized the potential for profits from selling seed to farmers, and began buying up seed companies. Together, seed and chemical companies promoted a vision of agriculture that relied on using ever larger volumes of expensive chemicals and commercial seeds, and the companies selling these products grew bigger and bigger. Meanwhile, the number of companies involved dwindled rapidly: initially, thousands of companies around the world sold seed and other inputs to farmers. By 2001 just six companies were clear global leaders: Monsanto, Syngenta, Dupont, Dow Chemicals, Bayer CropScience, and BASF. In 2013 these companies, known as “the big six,” controlled 63% of commercial seed sales globally, and 75% of agricultural chemical sales around the world. For about a decade this was relatively stable, and as
food riots broke out globally during the 2007-08 world food and financial crisis, the companies’ profits stayed high.

However, their profits began to decline in 2013: the prices of corn and wheat fell, while the price of oil (needed to produce pesticides and fertilizers) climbed, hurting their bottom line. So, companies started looking for ways to keep their profits high. Within the companies, some shareholders, including investment funds holding many shares, put pressure on them to raise profits by merging or consolidating into bigger companies.

Low interest rates made it easier for companies to borrow money to buy each other, and in 2015 and 2016 three colossal mergers were announced: Bayer-Monsanto, Dow-Dupont, and Syngenta-ChemChina (with ChemChina a new player on the global stage). While BASF, the last of the Big Six, isn’t merging it has been picking up parts of the other five companies that they have been selling off during their mergers, like 5.9 billion euros worth of Bayer’s seed and herbicide business. In early 2017, it was announced that ChemChina would merge with another Chinese chemical firm, Sinochem, to form the largest chemical company in the world.
Who were the “big 6” + ChemChina?

**Bayer:**
German multinational pharmaceutical company. Founded in 1863. Known for: Aspirin (1899) and Heroin (1898-1910). **Colluding with Syngenta to bury evidence that their “neonicotinoid” pesticides could harm honey bees.** 2016 sales: 46.8 billion euro.
Monsanto:
American multinational, founded in 1901 as a chemical company. Best known for: inventing Astroturf and RoundUp (herbicide); producing Agent Orange (herbicide), DDT (pesticide), and Recombinant Bovine Growth Hormone (rGBH). Purchased a number of seed and biotech companies in the 1990s. 2016 sales: 13.5 billion USD.
Dow Chemical Company:
Founded 1897 as a chemical and later plastics company. Best known for: producing Agent Orange, Styrofoam. Purchasing a controlling share in Union Carbide, the company responsible for the 1984 Bhopal Disaster, a leak from a pesticide plant in India which killed over 3700 people and injured hundreds of thousands. 2016 sales: 48.16 billion USD.

Artwork by Rio Roth Barreiro
DuPont:
American conglomerate founded in 1802 as a chemical company. Best known for: developing nylon, Teflon, Kevlar, and Freon (refrigerant). Bought up major seed companies (Bunge & Pioneer Hi-Bred) in the 1990s and 2000s. 2016 sales: 24.6 billion USD.

Artwork by Rio Roth Barreiro
Syngenta AG:
Swiss agrochemical and seed company. Formed in 2000 by merger between Novartis and Zeneca Agrochemicals. Novartis was formed in 1996: the oldest of the companies that formed it can trace their roots to 1758 (Geigy). Best known for: Atrazine (herbicide). 2016 sales: 12.8 billion USD.
**BASF:**
German chemical company, founded 1865. Largest chemical manufacturer in the world. Sell mainly to other chemical manufacturers. Best known for: first industrialized “the Haber process”: the process for synthesizing artificial nitrogen fertilizer. 2016 revenue: **57.55 billion euro.**

Artwork by Rio Roth Barreiro
ChemChina:
Chinese state-owned chemical company, founded in 1984. Makes a variety of chemicals, petroleum products, and agricultural chemicals. Best known for: acquiring Syngenta, the largest Chinese overseas takeover in history. Revenue 2015: 300.1 billion CNY (approx 38 billion euro).
Farmers, citizens, and regulators have all raised concerns about these mergers, but most have already been approved, and regulators show no signs of stopping the remaining deals. The “big six” companies who dominated global seed and agricultural chemical markets will be replaced with just four mega-corporations that could collectively control some 73% of the chemical and seeds industries.

What’s more, these mergers are most likely just the beginning. Unless stopped by governments, companies will continue merging and growing. ETC Group, and others argue that farm machinery companies like John Deere are likely to get involved, and that chemical and seed companies
are showing an increasing interest in “big data”. Following in the footsteps of Google and Facebook, seed, chemical and machinery companies are preparing to collect and use huge volumes of once-private information about their customers’ behaviour. In this case, information like detailed satellite data and other information about farmers’ fields and crops will become key. The interest in capturing data may drive another wave of mergers in the near future.
What is wrong with this picture?

As the power of corporations grows, the power of people, including farmers, shrinks. As a smaller number of bigger companies control more and more of our food system, an ever-smaller group of executives and shareholders have more and more power to decide, for everyone, what we eat and how it is produced.

Because these companies have to make money for their shareholders, they want farmers to use their products. And, as huge “asset management companies” increasingly own shares in all of the “big six” companies at once, investors don’t want to see one company succeed over another: they want to see the whole sector grow. While companies certainly
advertise to achieve this, they don’t hesitate to use their influence in other ways either: from lobbying to influence regulation, to partnering with universities and funding research, to re-directing international aid through “public private partnerships”, companies use their money to continually grow the markets for their products, and to ensure that they do not have to pay the costs of any harmful environmental or human health effects. Fewer, bigger companies will have even more power to shape food and agriculture.
The kind of agriculture these companies are promoting damages the environment and human health

Large-scale agriculture which relies on pesticides, chemical fertilizers and heavy use of fossil fuels has had serious impacts on the environment and human health. Here are just a few of the concerns:

• Some pesticides (historically DDT, but increasingly also “safer” pesticides like neonicitinoids) have been shown to have harmful effects on the environment including birds, reptiles, and bees.

Artwork by Mike Reger
• Evidence links intensive ploughing, irrigation, and use of chemical fertilizers with damage to soil structure, build-ups of toxins in soil, and even the expansion of deserts.

• Heavy application of chemical fertilizers and manure can cause run-off, which causes algae blooms in streams and the ocean, creating “dead zones” and destroying fisheries.

• Agricultural workers (as well as workers elsewhere in the food system) are often exploited or mistreated, including being exposed to toxic chemicals without sufficient protection.

• Farmers are increasingly pressured to grow animal feed and biofuel feedstocks rather than food for people. Key products from seed companies, like corn and soy, can be used for both of these purposes.

• Globally, there has been a dramatic increase in obesity and diet-related illnesses, including some kinds of cancer.
• Industrial agriculture and the current food system are important contributors to climate change. Some kinds of small-scale farming may have the opposite effect, helping to cool the planet.

Diversity in our food system is being lost

Different ecosystems and communities around the world have diverse needs: local producers and eaters of food should have the power to control their food. A one-size-fits-all model of agriculture, which relies on a small number of seeds controlled by an even smaller number of companies, risks destroying a rich cultural heritage. This is not hypothetical. Since 1900, 75% of plant genetic diversity has been lost as farmers worldwide turned to commercial seed. Today, according to the FAO, just twelve plant species and five animals provide 75% of the world’s food. In the Philippines over 3000 varieties of rice were cultivated before the Green Revolution: after, two varieties covered 98% of all rice-growing land.

This is a risky proposition. Relying on such a small number of crops, all produced in the same way, makes our food supply vulnerable to disease, drought, and other disasters. When the seeds needed to produce those crops are in the hands of a few huge companies, the picture looks even worse. All of this takes control and decision-making power away from local people, making peoples’ lives and livelihoods dependent on distant corporations.
“Today just twelve plant species and five animals provide 75% of the world’s food”
Farmers’ livelihoods are at risk

Many farmers today are dependent on seeds and chemicals purchased from the companies involved in these mergers. Fewer companies and less competition means companies will have less incentive to keep prices low. This trend is already well-established: seed prices have risen rapidly as fewer companies came to control the industry. Prices have been increasing by as much as 30% per year. In recent decades this has driven countless farmers off the land, or worse. Rising farm debt has been linked with tens of thousands of farmer suicides in India, has helped drive the average age of a US farmer over 58 as young people are unable to see a future for themselves on the farm, and has contributed to the disappearance of over one third of Europe’s small farms since 2003. Farmers ranging from small-scale family producers to large commercial operations have expressed concern that the mergers will drive farmers deeper into debt by allowing their suppliers to raise prices even higher.
Farmers will have even less autonomy, consumers will have even less choice

These mergers are not just about companies getting bigger, and more than prices is at stake. Each of these mergers is between a company specialized in producing seed, and one specialized in chemicals. What does that mean? Companies focus on producing “packages” of products, which are designed to be used together. A famous example is Monsanto’s “RoundUp Ready” seed: seeds are genetically engineered to be able
to survive Monsanto’s signature weed-killer, RoundUp. The seed and the weed-killer can each be used alone, but they work best together, making Monsanto a “one stop shop” for farmers, and making it hard for farmers to control which chemicals they use, or how. This can be a very profitable strategy but these “packages” limit farmers’ choices about what they can grow and how.

To get a sense of why this might be a bad idea, imagine you could only buy your car from an oil company. You might get a fuel-efficient car, but it would be a surprise. A fertilizer-and-seed company might produce a crop that thrives without purchased inputs. But you wouldn’t want to bet on it: what would the companies stand to gain?

This affects us all. If farmers’ choices are reduced, the choices of everyone buying their food also disappear.
Companies will have more power to shape policy

Bigger companies don’t just have more power in the market, they have more power to influence governments. The big six companies already spend a mind-boggling amount of money lobbying governments around the world for friendly policies. For example, although surveys consistently show that 89 – 96% of US consumers want products containing Genetically Modified Organisms (GMOs) to be labeled, legislation has been repeatedly defeated by GMO seed producers, who have spent millions of dollars lobbying against it. But this isn’t just an American problem: companies spend millions in Europe, and around the world. Questions around Monsanto’s lobbying tactics even led to the company being temporarily banned from entering European Parliament in 2017.

Companies already lobby together through trade associations (like CropLife International) but a smaller number of larger companies will be even better placed to put pressure on governments and regulators.
Companies have a strong interest in all kinds of health, environmental, and labour regulations but what they want is usually not what we want: these corporations spend millions lobbying against environmental policies, among others.

Companies have also used their political power to make sure that markets for their products keep growing. They work through aid programmes, and in partnerships with governments, universities, and research institutes, to argue that the kind of agriculture they profit from is the only agriculture that can “feed the world”. With annual revenues on par with the total GDP of mid-sized countries, these companies play a huge role in deciding what technology gets researched, and they are not interested in research that might help farmers to use less of their products.

The more important agriculture is in a country’s economy, the harder it is for them to resist pressure from companies. And, for decades, the World Bank and International Monetary Fund, guided by corporations, have sold poorer countries a vision of development that involved making their economies dependent on exporting a single crop like coffee or bananas.
We will have less control over our food

Around the world people are fighting for food systems which serve the needs of people. Farmer-led research into low-input farming is uncovering new ways for farmers to break their dependence on expensive chemicals and seeds through movements like agroecology. Bigger seed and chemical companies will have more power to resist these alternative visions, and to force governments to continue implementing policies that line corporations’ pockets rather than supporting people.
What can we do?

This all looks like a pretty discouraging picture: huge corporations are manipulating governments and the economy to make sure that they continue to profit. They are getting bigger every day, and they have put in place a system that ensures that money keeps flowing from farmers’ pockets into theirs. However, this isn’t the whole picture: peasants and small farmers still produce a huge amount of food around the world, and people are increasingly fighting back with an alternative vision of food and farming that puts control in the hands of the people who grow and eat food.

To plant the seeds of change we need to:

1. Resist these mergers, and future mergers

We need to tackle these specific mergers, and deal with the regulations and political situations which are allowing them to happen. There is a lot of regulation which is supposed to prevent these mergers, but it isn’t doing it. Almost all economists agree that when companies get too big, it is bad news for everyone. But the laws we have put in place so far to limit the size of companies are not enough. In most countries, regulators who approve mergers aren’t even allowed to consider most environmental and social harms in their decisions.

Regulation needs to be fixed to do its job: protecting people and the planet from mega-corporations. Regulators must put peoples’ needs before corporate profits.

What are people doing & how can you join?

- Push your policy makers: around the world, coalitions of people have come together to demand that their regulators take these mergers seriously. Coalitions of actors in Europe and the US, the African Center for Biodiversity and others have organized campaigns. Where mergers are still being considered, sign on to a letter in your region, or use these texts as a basis for writing directly to your own politicians.
• Learn about the mergers and the regulations that make them possible. Here are just a few sources to get you started:

• Eisinger, J & Elliot, J. (November 16, 2016) “These Professors Make More Than a Thousand Bucks an Hour Peddling Mega-Mergers” ProPublica,

• International Panel of Experts on Sustainable Food Systems (2017) Too Big To Feed: Exploring the impacts of mega-mergers, consolidation, and concentration of power in the agri-food sector.

• Howard, Philip (2016) Concentration and Power in the Food System: Who controls what we eat?, Bloomsbury Academic

• Jennifer Clapp (2017) Bigger is Not Always Better: Drivers and Implications of the Recent Agribusiness Megamergers, Waterloo, ON: Global Food Politics Group, University of Waterloo


You can find a full list of the references used for this publication at https://www.tni.org/en/GrowingPowerReferences

2. Push for alternatives

It should be clear by now that the food system we have today did not come about by accident: government policies, research, and farmer education programmes helped (or sometimes forced) farmers to make the transition from producing their own inputs and seeds to buying these products. And a few people profited enormously as a result. A new system won’t just happen either, but people around the world are working to make an alternative vision a reality:
What are people doing & how can you join? Here is a tiny sample of the thousands of initiatives, happening around the world, at every level from the village to the globe:

- Supporting farmers’ movements: Via Campesina is the world’s largest social movement, representing about 200 million farmers through 182 organizations in over 80 countries. Its name means “the way of the peasant,” and its members are primarily small farmers, defending their way of life, and a vision of a food system that respects food producers and offers the possibility for dignified livelihoods. If you are a farmer yourself, consider joining your local Via Campesina organization. If you are not a farmer, talk to your local organization and figure out how you can connect with and support farmers in your area.

Artwork by Ivy Rose
Building local control: the movement to transform food is not only for farmers: around the world urban people are also fighting for people-controlled food systems that work with local farmers to bring fresh, healthy food into cities, especially poor neighbourhoods. Food Policy Councils (like the Toronto Food Policy Council and the Kansas City Food Circle) aim to get people involved in working for better policies and regulations. Community-run stores, urban farms and other initiatives help to bring food into the city. New food systems are being built from the ground up.

Artwork by Marissa Conner
• Creating decent work: People are fighting to transform work in the food system, which is often under-paid and exploitative. Groups like the Coalition of Immokalee Workers, in the US, are building alliances between farm workers and the people who eat what they grow, while groups like SOS Rosarno, an Italian co-operative formed partially by migrant labourers, are reconnecting people to their food.

• Taking back their seeds: Around the world small farmers, and especially women, are taking control of their seeds, organizing community seed banks and local breeding programmes, to keep their independence from international seed companies. Many community seed banks, like Seeds of Diversity, Canada are also open to home gardeners, who can help to grow and save seeds.
• Building community power: Find out what is growing in your community. Initiatives are springing up around the world. From joining a community garden or composting project to getting involved with campaigns for better agricultural policies at the national or international level, you can play a part in planting the seeds of a new food system.