

FAIR AND HEALTHY FOOD

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WHAT IS FAIR?

*“Why did I opt for organic farming? I always give the numbers.
We had 120 calves a year, getting up 300 nights a year;
14 vaccines and 180 euros per calf for the veterinarian,
And then another 25 percent loss.
You have no life. You are a caricature of a farmer.
A thermometer in one hand and the needle in the other.
But I know now, from an ecological point of view, that it is not good. It is not good for your health. The
taste of the meat is gone.”*

Farmer André Grevisse in the documentary *Les Liberterres* (2016)

This farmer's quote is just one example. If we zoom out to the agricultural and food sector as a whole, we perceive a systemic crisis, fuelled by decades of yield maximization and export-oriented policies in a globalising economy. Food, turned into a commodity to generate (more) profit, feeds the greed of the few rather than the stomachs of the many. And local producers like André Grevisse become pawns.

Harmful economic, social and environmental trends have broken our food and agricultural chain, and it has become impossible to continue business-as-usual. We have come to a turning point. Witness the growing critique of the current system, but also the many new alternative approaches to food and agriculture.

In this paper, we will first shed light on the current situation and its many aspects, but also on the promising new developments that can be conceived as the building blocks of the Fair and Healthy Food System we urgently need to develop.

AGRICULTURE: A CLOSER LOOK

André is not an isolated case, since many farmers can barely keep their head above water. In 2017, Eurostat reported 12.5% lower income in rural areas as compared to the EU-28 average.¹ At the same time, European farmers are pushed to make investments to grow and become more competitive on global markets. The consequence is that more than one out of four farms disappeared from the European landscape between 2003 and 2013. The situation is not likely to improve soon, since in one out of three farms in operation, holding managers are aged 65 or over and do not have a successor.²

A 2017 report of IPES-food (International Panel of Experts on Sustainable Food Systems) notes that farmers, now more than ever, are relying on barely a handful of suppliers and buyers, squeezing their already meagre incomes even further and eroding their ability to choose what to grow, how to grow it, and for whom.³

In the meanwhile, a wave of mega-fusions is sparking unprecedented consolidation in seed-, pesticide-, fertilizer- and farm machine industries, while creating ever-bigger players in the processing and retail sectors. Mega-mergers – like that of Bayer and Monsanto in 2018, for instance – increase the companies' share of the market for patented seeds and associated pesticides. These moguls claim reduced losses from disease and increased yields for farmers: *"putting more money per acre in their pocket"* by *"bringing them the tools needed to maximize efficiency and profit"*⁴. These tools however – like (expensive) patented seeds, which are often linked to one single associated pesticide – are trapping local farmers in a straitjacket of uniformity.

European agricultural policies encourage farmers to grow and to play with the big dogs. But, in reality, these systems put local farmers in a precarious, dependent financial situation, which it is difficult to get out of.

How did we arrive at this point? Let's take a leap back in time.

HISTORY OF THE COMMON AGRICULTURAL POLICY (CAP)

In the 1940s, World War II had caused a lot of hunger and "no more hunger" justly became the new credo after the war. The world had to keep up with population growth and the associated rise in food demands. Countries started investing a lot of money to increase food production and to keep food prices low, the crucial goal being food security for all. Modern food systems and agriculture were gradually made more industrial. Priority was given to the production in large volumes of a relatively narrow range of produce. Europe set out the goals for what in 1957 would become the Common Agriculture Policy: securing food supplies through increased productivity, stabilizing the markets, and ensuring a fair income for farmers. As a result, the CAP developed a market and pricing policy setting minimum prices for farmers, a European trade policy involving support for export and restrictions on import, and a common market and regulation. The EEC also concluded a deal with the USA removing all restrictions on the import of oilseeds and protein crops (fodder), as long as it could protect its market from produce like cereals, milk, sugar and cattle. As consequence, the massive imports of cheap fodder from the USA led Europe to intensify its livestock production.

What used to be a circular food (production) chain gradually became a linear food chain. Once autonomous farming was now relying heavily on external inputs and on cultivating single crops across large areas. Uniformity was preferred to diversity. And everything was running on fossil fuels. Together with upscaling, this led to a spectacular increase in production. Thanks to the CAP, farmers got guaranteed prices and surpluses were bought. But overproduction and surpluses led the EU to create subsidies for export to the South and this subsidized dumping obviously distorted local markets. After frequent criticism, the CAP was adjusted: rather than subsidizing the surpluses, quotas on the volume of production were introduced.

By 1992, farmers were receiving direct support per hectare or animal instead of a guaranteed price, in order to boost global competitiveness. Market liberalisation now became the credo. But, in combination with deregulation, it created many dysfunctions: for instance, a blind fixation on cost reduction through upscaling and monoculture. Production moved to where it was cheapest to produce.⁵

The most (negatively) affected countries were those classified among the “Least Developed Countries”. They were not able to make similar investments and got trapped in a system in which they lack self-sufficiency, being highly dependent on (cheap) food imports, while local farmers struggle to achieve a viable income.⁶ Notably in the global South, many local farmers have been expelled from their land to make space for large plantations, where they now work for a starvation wage. They are the victims of exploitation, earning, for instance, 0.01 pounds for a box of tea worth 1.60 pounds in the UK.⁷ But farmers in developed countries are also struggling. In Belgium, for example, the evolution of the price paid by the consumer is inversely proportional to the price paid to farmers, as figure 2 shows very strikingly.

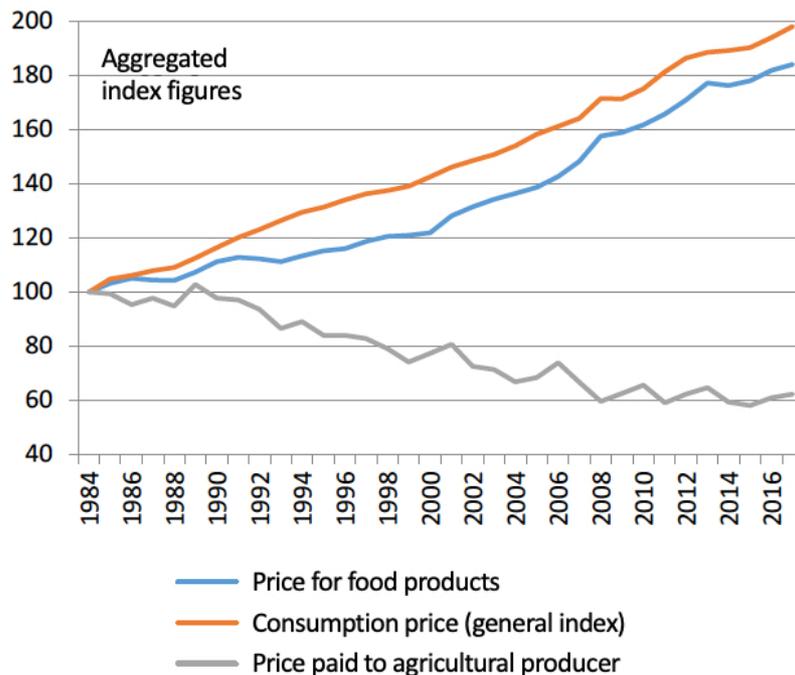


Figure 1 Evolution in Belgium of the producers' price and consumer price index (source: economie.fgov.be)

A BROKEN FOOD SYSTEM

Food is one of the building blocks of human life: a product of nature. We need it to grow, to be healthy, to stay alive. However, unlike water, adequate food is not recognized as a human right. Instead, it has become a commodity in a neoliberal price war between a handful of global corporations, while local farmers struggle to survive with dignity.

Our current food system is unsustainable in several ways. To quote professor **Marjolein Visser**: “Our food system sucks up oil. Our lips are dripping with oil”.

Consumers are not always aware of the real (production) cost of the produce they buy or of the distances travelled by it: beans from Kenya, apples from New-Zealand, grapes from Chili.... Combined with international trade deals, unsustainable food habits have only made our derailed food system worse.

“Our food system sucks up oil. Our lips are dripping with oil” Marjolein Visser

For example, 20 years ago, the European poultry industry flooded the African market with cheap frozen chicken parts. European exports crushed the poultry industry in countries like Ghana and Cameroon, as a consequence of which hundreds of thousands of people lost their jobs. Previously, in the nineties, the local markets were protected from cheap imports by stringent restrictions and high import duties. During this time, however, Ghana received loans from the World Bank and the IMF on condition that it would open up its markets. The rest is history.⁸

But this race to the bottom to produce the cheapest foods inevitably undermines food quality, leading to contaminated foods, as the dioxin or fipronil crises have shown. Moreover, today's unsustainable food and agricultural systems are kept in gridlock by legislation, patents, pricing and even violence.

Although global food production has increased – we produce even more than what is needed to feed the world's population – this food system somehow fails properly to nourish billions of people. The number of undernourished people in the world has been on the rise since 2014. More than 820 million people went hungry in 2018, according to the UN Food and Agriculture Organisation⁹, while a third of all people did not get enough vitamins. At the same time, 600 million people were classified as obese and 2 billion as overweight, with serious consequences for their health. In addition, more than 1 billion tonnes of food is wasted every year: a third of the total produced.

These staggering numbers speak for themselves: our food system is failing.

IPES Food published a report in 2017 on the impacts of concentration in the agri-food sector. According to its findings, dominant firms have become too big to feed humanity sustainably, too big to operate on equitable terms with other food system actors, and too big to drive the types of innovation we need. The high and rapidly increasing levels of concentration in the agri-food sector reinforce the industrial food and farming model, exacerbating its social and environmental fallout and aggravating existing power imbalances.¹⁰

It is estimated that until the beginning of the 20th century, tens of thousands of plant varieties were grown for human foods. Seed production was developed without intellectual property rights, and it had brought forth a vast diversity of crops. Today, however, seeds are no longer considered as a “common”, but rather as a costly commodity for farmers, leading to an enormous loss in biodiversity. A lack of availability of traditional seeds on the legal market deprives farmers of their right to plant breeding and forces them to use uniform, commercial, non-organic and unbreedable varieties (so-called ‘terminator seeds’).

Today, the number of plant varieties has sunk to 120 delivering 90% of vegetable foods for humans. Only 12 plant varieties and 5 animal species account for more than 70% of all human foods. Half of all human foods comes from barely 4 plant species (potatoes, rice, maize and wheat) and 3 animal species (cows, pigs and chickens).¹¹

As incomes increase and people migrate to cities, meat consumption also rises.¹² Livestock production has obviously followed this trend, leading to megafarms that are not infrequently criticized in the media for animal mistreatment or the use of prohibited substances (cf. Fipronil). In Europe alone, 71% of farmland is now used to feed livestock.¹³

What is sustainable about a system that exports Dutch herring to Africa, but imports Danish herring for its own population?

Fisheries are just as problematic. In 2016, global fish production peaked at about 171 million tonnes, with unsustainable and polluting aquaculture representing 47 percent of the total. Despite the continuing growth of aquaculture, the state of marine fishery resources has continued to decline.¹⁴ Just like other food domains, the current fishery system requires new thinking on climate change, international trade, environmental (ocean) pollution, consumer protection and sustainability as a whole.¹⁵ But what

is sustainable about a system that exports Dutch herring to Africa, but imports Danish herring for its own population?

Food has become a for-profit commodity for some, rather than a universal right for all. At the same time, there is a rapidly escalating competition between the demand for land functions that provide food, water and energy and those services that support and regulate all life cycles on Earth. According to the United Nations Convention to Combat Desertification, we are losing 24 billion tons of fertile soil and 13 million hectares of forest each year.

Up to 130 national academies of science and medicine around the world have already expressed their concern about negative tendencies in food, nutrition and agriculture. After all, global food systems are connected to a complex interplay of issues spanning the environment, health, nutrition, climate change, ecology and human behaviour.¹⁶ But trade, jobs and the economy are also involved. It is therefore of vital importance that the future of food security and agriculture is addressed from a global and multidisciplinary perspective, taking into account the dynamics of trade and the architecture of global markets, the prevention of major food crises, competition policy and standards for foreign direct investment, transboundary natural resource management, transboundary food safety, and the generation and use of science and innovation.

In recent years, this holistic viewpoint has become more and more vociferously shared and documented. It acknowledges the interconnection between agriculture, food, climate and biodiversity. Let's have a closer look.

THE CONSEQUENCES OF A BROKEN FOOD AND AGRICULTURAL SYSTEM

Environmental impacts

1. Climate change

Agriculture, forestry and other land-use alone – excluding food transport and other energy-intensive processes – contribute around 24% to annual global emissions: mainly, from deforestation, agricultural emissions from soil and nutrient management, and livestock.¹⁷ Land-use is thus second only to transport as a major driver of climate change. Overall agricultural and food production is largely dependent on fossil fuels. This includes food processing and packaging, conservation and transport, production of fertilizers, herbicides and pesticides, and tillage, irrigation and fertilization. Agriculture also accounts for 53% of EU methane emissions (mainly coming from ruminant animals).¹⁸ In total, as much as one-third of greenhouse gases from human activity is linked to how food systems are developed.¹⁹ With the increase in overall food demand over the first half of the 21st Century, GHG emissions from agricultural outputs are expected to grow even more: especially in connection with (GHG intensive) vegetable oils and animal products.

2. Soil degradation

Forty per cent of the Earth's land surface is accounted for by agriculture: either growing crops or raising livestock. Consumption of the Earth's natural resources has doubled in the past 30 years, with a third of the planet's land now severely degraded.²⁰ Land degradation is caused by soil erosion and grazing livestock. Soil erosion is the acidification, salinization and loss of organic carbon in soil that can be caused by water and wind (washing or blowing away topsoil), but also by pollution (from excess use of nitrogen-rich manure or fertilizers in tillage). Livestock grazing destroys vegetation, leaving land vulnerable to erosion. According to the FAO's 2015 [Status of the World's Soil Resources](#) report, at

least a third of global soil resources are in poor or very poor condition. We may even have as few as 60 years of harvests left due to intensive (or factory) farming.²¹

3. Water scarcity

Worldwide, 70% of our collective annual freshwater use goes to agriculture. Some 40% of the world grain harvest is grown on irrigated land. Increasing competition for scarce water resources is creating tension on regional and international levels. For instance, in the USA, water withdrawals from the Colorado River cause it to run dry before it reaches Mexico's Gulf of California. In Africa, foreign land acquisitions for farming in Ethiopia and Sudan will affect the availability of fresh Nile water in Egypt. In Asia, dams in China diminish the Mekong flow available to Thailand, Viet Nam, and other downstream users.²² Worries over water stress and scarcity are increasing in Europe too. Around one third of EU territory is exposed to water stress conditions: either permanently or temporarily. Agriculture will continue to be the largest water consumer for years to come, because more and more farmland needs to be irrigated: especially, in southern European countries.²³ But global water scarcity is caused not only by the physical scarcity of the resource, but also by the progressive deterioration of water quality in many countries.

4. Pollution

Agriculture also plays a major role in air and water pollution. Farms discharge large quantities of agrochemicals, organic matter, drug residues, sediments and saline drainage into bodies of water. In the Flemish speaking region of Belgium, investigations recently revealed large-scale fraud in the use of organic and chemical fertilisers. Despite existing regulations, 50% of the use of chemical fertilizers is illegal, causing excessive nitrate and phosphorus values in bodies of water, which in turn threatens biodiversity and ecosystems.²⁴

By extension, agriculture is also responsible for 94% of EU ammonia emissions in the air (3,751 kilotonnes in 2015).²⁵ Air pollution (from ammonia, among other things) has significant impacts on human health, as we will see further on.

Impact on biodiversity

1. Biodiversity loss

All across Europe, agricultural intensification (creating more uniform landscapes) has been a major driver of the altering and outright disappearance of lakes, ponds and streams and of the long-term declining trends in population size, range, habitat intactness and functioning of terrestrial species. In addition, the frequent application of insecticides, herbicides and fungicides in agroecosystems are leading to a loss of biodiversity and important ecosystem services. Too much nitrogen and phosphorus in the water, for instance, give algae free rein. Because they breathe in enormous amounts of oxygen, they threaten other plants and fish.

One million animal and plant species are currently threatened with extinction. Key culprits, in descending order, are: (1) changes in land and sea use, (2) direct exploitation of organisms, (3) climate change, (4) pollution, and (5) invasive alien species. Fewer and fewer varieties and breeds of plants and animals are being cultivated, raised, traded and maintained around the world, despite local efforts.²⁶

2. Deforestation

Because of agricultural expansion, over one third of terrestrial land surface is now being used for growing crops or animal husbandry: mostly at the expense of forests. From 1990 till 2015, according to the World Bank, every hour we lost forest cover equivalent to the area of 1000 football fields worldwide. Commodity-driven deforestation was the dominant driver, associated with 27 percent of gross global tree cover loss between 2001 and 2015, equivalent to a deforested area approximately a

quarter the size of India. Trees are cut down to make way for activities like agriculture, mining, and oil and gas production. We see the most commodity-driven deforestation in the tropical forests of Latin America and Southeast Asia. In Malaysia and Indonesia, for instance, forests are cut down (often illegally) to make way for producing palm oil, which can be found in many processed foods. In the Amazon, cattle ranching and farms — particularly soy plantations — are the key culprits.²⁷

GMOs questioned

Can genetic engineering help our agricultural system to become more productive, our harvest more nutritious, our crops stronger? There has been heated debate on this subject for years. Before debating the technique in itself, it is indispensable to look at who owns it and what purpose it serves. Research shows that GMOs are currently used mainly by for-profit multinationals for the production of (more) monoculture crops, chemical fertilizers and pesticides. From this perspective, the food and agricultural crisis is viewed as a technical and economic problem, which can be solved by modifying the genes of one plant variety in the isolated laboratory of biotechnologists. As we saw earlier, however, the real root of the problem is located on the societal and environmental levels.²⁸ The example of Golden Rice illustrates this. In South-East Asia, the agroindustry is trying to tackle blindness due to a shortage of vitamin A by increased vitamin A in rice. It does not deal with the fundamental problem, however: for the nutritional deficits of the local population are caused by the practice of monoculture in a region that was once rich and varied in produce. The agroindustry offers change in one crop variety as a narrow answer to a much larger systemic crisis caused by the Green Revolution of the 1970s. At the time, rich and diversified agricultural systems were replaced by intensive monocultures of industrial rice varieties. This transformation led to different dietary patterns, which are unilaterally based on rice.

A 2009 study showed that after 20 years of genetically modified maize and soya cultivation in the United States, these GMOs accounted for only a negligible increase in yield or even a decrease in yield compared to similar non-GMO cultivation in Europe. Moreover, genetic engineering is and will remain a very expensive technique. So, before considering if it can be implemented positively, safely and fairly in a sustainable agricultural system, it is useful also to evaluate the process: Is it free from industrial interests and export-oriented market strategies? Does it allow farmers to preserve their choice and freedom? At this point, the answer to both questions is 'no'.^{29 30}

Impact on human health

1. Respiratory diseases

Food systems contribute significantly to air pollution via the emissions created by the trucking and shipping of food and feed around the world. Agricultural and fish commodities account for over 12% of global CO₂ emissions from international transport.³¹ The agricultural sector is also responsible for more than 90% of ammonia emissions.³² Air pollution is a major cause of premature death and disease and is the single largest environmental health risk in Europe.³³

2. Antimicrobial resistance

The spread of bacteria that have developed resistance to the antimicrobials that are increasingly used in intensive livestock production (and on fish farms) is another major health concern transiting through the environment. In many regions of the world, antibiotics are regularly administered to animals in nontherapeutic ways: i.e., in constant low doses to prevent disease outbreaks and/or accelerate the growth process. More antibiotics are used worldwide for these purposes than to treat human diseases.³⁴ Antimicrobial resistance or AMR currently causes around 700,000 global animal and 33,000 global human deaths annually.³⁵

3. Endocrine disruptors

For farmers, lower-dose, chronic exposure to many pesticides, and particularly Endocrine Disrupting Chemicals (EDCs), have been clearly linked to a number of possible long-term health effects: like cancer or adverse reproductive effects.³⁶ Studies have already shown that Parkinson's is a direct consequence of the use of pesticides. Consequently, in France, since 2012 Parkinson's disease can, under certain conditions, be recognized as a professional disease among farmers.³⁷

Endocrine disruptors are also omnipresent in our food systems, however. They are found in the pesticides used on conventionally grown crops, in the hormones used in meat, poultry, and dairy production, in the inside lining of canned foods and some plastic containers, in compounds used as food preservatives, and even in non-stick cookware.³⁸

4. Malnutrition (undernutrition, micronutrient deficiencies, and overweight & obesity)

Overconsumption of animal products, on one hand, has been connected to health problems like heart disease, diabetes, and various cancers. On the other hand, as mentioned earlier, agricultural intensification has led to strongly reduced crop varieties, thus making our food palette narrower.

Today, our food system fails to nourish billions of people properly. Despite improved food access in

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some regions, diet quality is declining in certain respects. The problem is compounded by continuing issues of affordability. The drive for calories in food production is bringing about health challenges, including obesity. Unhealthy diets are responsible for 49% of the burden of cardiovascular disease – the leading cause of

death in the EU. Increased consumption of sugar-sweetened beverages, animal products and saturated fats have harmful effects on our health and well-being. A 2017 British report on advertising during TV shows popular with children showed that 59% of the advertisement were for foods high in fat, salt or sugar. Fruits and vegetables accounted for just over 1% of food and drink advertisements during family viewing time.³⁹

Socio-economic impacts

1. Increasing inequality

As we saw above, rapid consolidation and major power imbalances are omnipresent in the agribusiness and food retail sector, either pushing small-scale farmers into a corner or forcing them to intensify. About 3% of farms now account for 52% of EU farmland, and 20% of farms receive 80% of subsidies under the CAP. Rural landscapes could be set for further upheaval as the farming population ages: in 2013, almost half of farm holders were aged over 55 and one quarter were over 65.

In its 2019 report on a Common Food Policy for the European Union, IPES Food points out that currently 70% of the global agrochemical industry is in the hands of only three companies and up to 90% of the global grain trade is controlled by four multinationals. Dominant food industry players have been able to drive down prices and undermine working conditions in supply chains – affecting seasonal migrant labourers, food retail staff, and self-employed delivery workers alike. Farmers in particular are paying a high price: their input costs (seeds, fertilizers, pesticides from multinationals) rose by 40% between 2000 and 2010. Poverty and inequality in rural areas has increased worldwide. This development is especially distressing in the global South, where the majority of the world's hungry are located. Sub-Saharan African and other economically weak countries also became the target of “land-grabbing”: grain importing (rich) countries and other investors turned to buying or leasing tracts of land in other countries on which to grow food – a very lucrative business, but to the

detriment of the local population, which is losing jobs and land. These questionable land acquisitions have become an integral part of an increasing global power struggle for control of the earth's land and water resources.⁴⁰

Back in the EU, the share of food chain value going to agriculture (i.e. the average share/percentage of the final price that farmers receive for their produce relative to the share/percentage received by other actors in the food supply chain) has dropped from 31% in 1995 to around 21% today. In this context, the viability of farming (particularly for smallholders) has been severely challenged.

At the same time, within families, household income often determines the healthiness of a diet. Nutritious, fresh foods tend to be more expensive. Thus, when household resources for food become scarce, people turn to less expensive foods, which are often high in calories and low in nutrients, leading in turn to more family members being overweight or obese. This is particularly true in urban settings in industrialized countries, where so-called food deserts (i.e. areas that have limited access to affordable and nutritious food) are disproportionately found in disadvantaged neighbourhoods.

2. Loss of resilience

In addition, reductions in the diversity of cultivated crops mean that agroecosystems are less resilient against future climate change, pests and pathogens.⁴¹

The exceptionally warm and dry summer of 2018 led to a drop in EU cereal harvests. Sweden for instance, experienced its worst harvest in more than 50 years. Although a cereal exporter, in 2019, it has had to import. The figures for potatoes are even worse than during the disastrous harvests of 1867 and 1899, which led to famine.⁴² In Belgium, as a result of an increase in extreme weather, the Flemish agricultural disaster fund will stop providing compensation for damaged crops as of September 2019. Insurance companies will replace compensation by the fund with a (subsidized) weather insurance.

3. Alienation from nature

The erosion of traditional food cultures and the emergence of fast-paced urban lifestyles has also transformed food preparation and consumption habits, allowing people to lose touch with how food is produced and with concepts such as the seasonality of fruits and vegetables. At the same time, food crises are on the rise, causing people to lose trust in the modern food systems on which they increasingly rely. A recent survey found that only 35% of EU citizens trusted supermarkets and only 38% trusted food manufacturers to provide information about food risks.⁴³

A NEW WAY FORWARD

So how do we tackle all these challenges, taking into account the global tendencies of growing population, urbanisation, environmental and climate change, economic inequality and market instability, political disruptions and social injustices? The key lies in bridging the divide between food and agriculture, in reconnecting the public with the process of food production, in introducing a circular food chain that respects biodiversity and ecosystems. This means adopting an integrated approach to developing a system of sustainable farming and fair and healthy food. Such a system would allow farmers to regain their autonomy, reconnect more closely with consumers, and rebuild a shared sense of responsibility with them. This implies that food should be re-linked to *agriculture*, as well as to its social environment. It offers opportunities for increased resilience, better food quality and fairer pricing.⁴⁴ It offers a fundamental alternative to the current situation, in which actors at both end of the food chain, i.e. farmers and consumers, lose: farmers do not get a decent income and consumers do not get healthy food. By reconnecting them in short chains, the autonomy of both groups is expanded.

We can identify five levers that support rebuilding food systems on new and healthier foundations:⁴⁵

1. Raise **awareness** of the food system's complexity and of the need for a global transition to a more healthy and sustainable system.
2. With the help of scientific research, aspire to a more transparent and **holistic view** on food: not just an economic view, but one that also takes into account indicators such as nutrition, health, happiness, and social and cultural well-being.
3. Bring sustainable existing **alternatives** to light; support and promote them.
4. Adopt the **precautionary principle**, by starting from ecological, social and cultural determinants of health in reforming food systems.
5. Build integrated food policies under **participatory governance**.

The foregoing considerations lead us to an agricultural approach that requires us to focus on a global scale: agroecology.

Agroecology

Agroecology is an integrated approach that simultaneously applies ecological and social concepts and principles to the design and management of food and agricultural systems. It seeks to optimise the interactions between plants, animals, humans and the environment, while taking into consideration the social aspects that need to be addressed in a sustainable and fair food system.⁴⁶

Agroecology seeks ways to enhance agricultural production by reconnecting to natural processes. It reduces the need for external inputs (like chemical fertilizers and pesticides) and unwanted outputs (like pollution and climate change), by stimulating natural circular interaction between trees, plants, animals and insects on the same soil. The core principles of agroecology thus include recycling nutrients and energy on the farm; integrating crops and livestock; diversifying species and genetic resources in agroecosystems over time and space; and focusing on interactions and productivity across the agricultural system. Agroecology gains more and more support, as it is increasingly seen as a way to improve the resilience and sustainability of food systems.

Olivier De Schutter, former Special Rapporteur on the right to food for the UN, already indicated in 2010 that similar approaches, like *agroforestry*, incorporating multifunctional trees into agricultural systems, can lead to spectacular results. In Tanzania, for instance, 350,000 hectares of land have been rehabilitated in the Western provinces of Shinyanga and Tabora using agroforestry. Similar large-scale projects have also been developed in other countries in the global South, raising overall agricultural productivity and in turn reducing rural poverty, improving nutrition and leading to climate change mitigation.⁴⁷

The Food and Agriculture Organization of the United Nations identified 10 interconnected elements of agroecology that could help to guide the transition to sustainable food and agricultural systems⁴⁸:

1. **Diversity**: Managing and conserving agro-biodiversity, enhancing the provisioning of ecosystem services, including pollination and soil health, upon which agricultural production depends. Diversity also strengthens ecological and socio-economic resilience, including by creating new market opportunities. For example, crop and animal diversity reduces the risk of failure in the face of pests or climate change. A variety of income sources helps to stabilize household incomes, and a diverse range of cereals, pulses, fruits, vegetables, and animal-source products contributes to improved nutrition.
2. **Co-creation and sharing of knowledge**: Blending traditional and indigenous knowledge, producers' and traders' practical knowledge, and global scientific knowledge by promoting participatory processes and institutional innovations that build mutual trust.
3. **Synergies**: Enhancing ecological functions, leading to greater resource-use efficiency and resilience by paying careful attention to the design of diversified systems that selectively combine

annual and perennial crops, livestock and aquatic animals, trees, soils, water and other components on farms and agricultural landscapes.

4. **Efficiency:** Producing more using less external resources, thus reducing costs and negative environmental impacts of their use, and ultimately empowering producers thanks to reducing their dependency on external resources by increasing their autonomy and resilience to natural or economic shocks.
5. **Recycling:** Closing nutrient cycles and reducing waste that translates into lower dependency on external resources, increasing the autonomy of producers and reducing their vulnerability to market and climate shocks.
6. **Resilience:** Maintaining a functional balance helps agroecological systems to resist diseases. Diversification and integration reduce producers' vulnerability should a single crop, livestock species or other commodity fail. A lower dependence on external inputs can also reduce producers' vulnerability to economic risk.
7. **Human and social values:** Putting the aspirations and needs of those who produce, distribute and consume food at the heart of food systems, thus protecting and improving rural livelihoods, equity and social well-being. Agroecology empowers people from the bottom up to become their own agents of change.
8. **Culture and food traditions:** Supporting healthy, diversified and culturally appropriate diets, thus contributing to food security and nutrition while maintaining the health of ecosystems. Agroecology seeks to cultivate a healthy relationship between people and food. It can help realise the potential of territories to sustain their peoples.
9. **Responsible governance:** Promoting transparent, accountable and inclusive governance mechanisms at different scales.
10. **Circular and solidarity economy:** By reconnecting producers and consumers, it provides innovative solutions for living within our planetary boundaries, while ensuring the social foundation for inclusive and sustainable development.

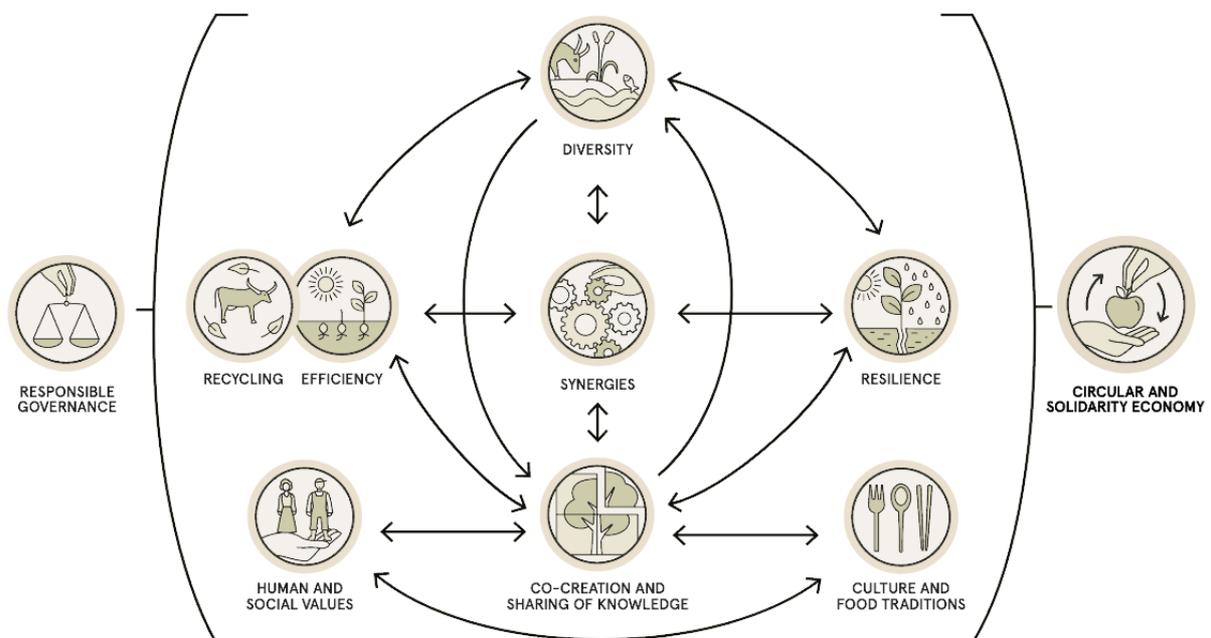


Figure 2 The 10 elements of agroecology

Though we are still far from this ideal scenario today, there are 3 major change agents that can help us to move in the right direction: 1) healthy diet, 2) sustainable food production and 3) governance reform.

Healthy diet

There is substantial scientific evidence that links diet with human health and environmental sustainability. Studies show that if we adhere to a healthy diet, the yields of organic farming will allow us to meet the needs of a growing population, even despite an expected decline in production. The planetary health diet, as it is called by the EAT Lancet Commission, contains, in particular, fewer animal products (but those consumed are of better quality), less sugar, more fibre, and more (seasonal) fruit and vegetables, with an average of 2500 calories a day.⁴⁹

Sustainable food production

Our global food system especially requires sustainable intensification. This implies doing “better with less” by improving efficiency in the use of resources and inputs. For instance, reducing livestock numbers and reconnecting livestock production with crop production helps, on the one hand, to restore the natural reserves of fertilisers (closing the nitrogen cycle and halting its unnaturally excessive use) and, on the other, to restore protein self-sufficiency (halting soya imports and accompanying tropical deforestation). Crop rotation and mixed cropping help foster biological control of parasites and weed reduction, thus allowing us to reduce the use of pesticides and supporting more heterogeneity in landscapes. The maintenance of grasslands can in turn foster soil carbon storage.⁵⁰ In addition, farmers need to regain the right to freely breed and produce, to share or sell, independently of patented seeds. These alternative methods to the dominant monocultures are gathering momentum. For instance, OpenSourceSeeds, a German non-profit organization, set a new trend by creating a new open-source license for seeds, in order to protect seeds against patents, and against plant variety protection.⁵¹ And, thanks to the new European rules on organic products to be implemented starting in 2021, important factors such as maintaining genetic diversity and increasing resistance to disease will be taken into account when defining criteria for organic seeds.⁵² This will allow traditional seeds and farmers’ own varieties to be placed on the market.

Governance reform

If we want to be able to pursue an agroecological approach to food and agriculture, then we will also need **effective governance** to support this transition. It is only through transparent, accountable, inclusive and multilevel governance mechanisms that we can enable a transition for producers and consumers. Successful examples include school feeding and public procurement programmes, market regulations allowing for branding of differentiated agroecological produce, and subsidies and incentives for circular systems. In this respect, organic farming provides numerous examples of successful policies. Sikkim in India, for instance, is the first 100% organic state in the world. All of its farmland is certified organic. The policy implemented a phase out of chemical fertilisers and pesticides and achieved a total ban on sale and use of chemical pesticides in the state. The transition has benefitted more than 66,000 farming families. At the same time, Sikkim’s approach goes beyond organic production and has proved truly transformational for the state and its citizens. Embedded in its design are socioeconomic aspects, such as consumption and market expansion, and cultural aspects, as well as health, education, rural development and sustainable tourism. The Sikkim tourism

sector, for instance, benefited greatly from the new organic image: between 2014 and 2017 the number of tourists increased by over 50 per cent.⁵³

An example closer to home is Denmark with its Organic Action Plan. Developed by involving a broad spectrum of stakeholders, the plan represents a holistic strategy that increases, on the one hand, the overall demand for organic products and, on the other hand, stimulates research and product innovation. Supported by substantial dedicated funding, the Plan has produced very clear positive outcomes: today, Denmark has the highest market share of organic products in the world, with almost 80 percent of Danes purchasing organic food. Moreover, thanks to high demand, the Plan has amply met its original target of doubling organic farmland as compared to a 2007 baseline. Furthermore, the Plan motivated municipalities through a national goal to achieve 60 per cent organic in all public kitchens; thereby, for instance, the city of Copenhagen met the goal of 90 per cent organic food in 2015, without an increase in meal prices.⁵⁴

Well thought out policies, like the above for organic farming, can also inspire specific policies for supporting agroecological farming. Food and land need thereby to be re-linked. But transitional governance also requires revision of **trade regulations**, since such regulations tend to undermine the rule of law and to ignore differences in environment and health standards between territories. Free trade agreements tend to lead to a race to the bottom. Decision-making needs to be **re-democratized**, so that democracy can regulate the economy again, in order to achieve better social protection. Instead of *free*, we need *sustainable* trade agreements, which allow flows of goods, services and investments to be regulated in a democratic way. Less trade freedom – or more trade in a sphere of reciprocity and solidarity, instead of competition and greed – can lead to more food security.⁵⁵

TOWARDS FOOD DEMOCRACY AND A COMMON FOOD POLICY

The current EU Common Agricultural Policy (CAP) needs to be profoundly rethought to meet these requirements. In fact, many countries lack a food policy that can satisfy primary needs like nutrition, health or socio-economic and environmental stability. Fairness in the food industry is missing. We need greater transparency and accountability, as well as more democracy among all the different stakeholders involved: citizens/consumers, producers, retailers and governments.

This is why the IPES Food has called for a Common Food Policy for the EU⁵⁶. A patchwork of different policies are all affecting food systems, and not necessarily positively: agriculture, trade, food safety, environment, development, research, education, fiscal and social policies, market regulation, competition, and so on. There are many shortcomings in and inconsistencies and discrepancies among these parallel policies, and they hamper the formation of a coordinated, integrated vision for fair and healthy food.

In line with the aforementioned reflections on healthy diet, food production practices and governance reform, and with the European Commission's long-term vision for implementing a sustainable development strategy, the development and promotion of a *Common Food Policy* can prove its worth. It aims to guide the transition to sustainable food systems by means of five paradigm shifts, as shown in Figure 3 below :

1. Ensuring access to land, water and healthy soils
2. Rebuilding climate-resilient, healthy agro-ecosystems
3. Promoting sufficient, healthy and sustainable diets for all
4. Building fairer, shorter and cleaner supply chains
5. Putting trade at the service of sustainable development



Figure 3 The objectives of a Common Food Policy: five paradigm shifts (source: IPES Food)

On many local or municipal levels, the first traces of re-democratization of food systems can already be perceived today.

REDISCOVERING FOOD AS COMMONS

The dominant narrative, which suggests that large-scale, mechanized monocultures controlled by transnational agribusiness corporations are more productive than smaller-size and more diversified forms of farming, is starting to lose momentum. It is time for a new narrative, for initiatives capable of shifting our food and agriculture systems from an extractive and individual to a generative and collective mode, with more community use and sharing, outside of the dominant market and state logics.⁵⁷ This holistic and rich approach corresponds to the concept of “food as commons”. As Jose Luis Vivero Pol points out, this means we have to value food differently, to “re-conceptualize the entire food-system so that it bolsters human health, nature stewardship, farmers’ livelihood and landscape protection”.⁵⁸ If we start looking at food from the perspective of the commons, we realize that it is

wrong to consider food as a mere commodity: it also has multiple non-economic dimensions. The cultural importance of food cannot be expressed in euros. Food in different places have different meanings for the people involved. We have to let go of the dominant view of food as only a commodity and consider it a human right, a public good and a commons.

This new perspective can be found in many new initiatives, as well in a myriad of customary practices that successfully resisted the wave of commodification. Farmers are shifting away from corporate exploitation, but also consumers are becoming more and more aware of the negative effects of the extractive economy. They are starting to reorganise around goods/foods that are (re)produced and managed collectively while respecting both humans and nature; they are strengthening their democratic self-determination. New forms of production are linking farmers and consumers more closely together in a fairer, healthier and more sustainable food (production) system, and these so-called commons are rapidly gaining importance on a global scale.

Current examples of successful reform-oriented (mini)systems are plentiful: ranging from community supported agriculture to food policies on the municipal level. Let us look at some examples in Belgium.

Local initiatives

Food teams

Food Teams in the Flemish region of Belgium is an initiative developed along the lines of a Japanese model from 1965, which brings together local residents into groups for weekly purchases at local and regional farms. This system aims to offer fair, sustainable and organic foods from the region, which are produced in harmony with the four seasons, while respecting the earth and nature and guaranteeing the farmer's autonomy in terms of choice and pricing. Today, there are around 180 *Voedselteams* or "Food Teams" in Flanders.

Community supported agriculture

The Community Supported Agriculture (CSA) farms represent another interesting example. CSA is a form of collaboration between citizens and local farmers, in which citizens pay an annual contribution to cover the production costs of the farm. In exchange, they receive a part of the yield and participate in harvesting and/or in collective decision-making. CSA-type farming first emerged in the United States in 1984, but was later widespread adopted. In Belgium, 50 CSA farms have been founded since 2007.

Besides these new types of common agriculture & food initiatives, initiatives at the municipal level are also emerging. The latter are quite promising, since they bring together different actors in the food chain and offer the possibility of upscaling alternative practices.

Food strategies on the municipal level

Gent en Garde

In 2015, 100 cities worldwide signed the Milan Urban Food Policy Pact for the sustainability of food systems. Gent is one of those cities: in the form of "Gent en Garde", it created a food council and food policy for a sustainable food system based on 5 strategic goals: (1) a visible, shorter food chain, (2) sustainable production and consumption of food, (3) avoidance of food loss, (4) re-use of food waste, and (5) a stronger, social surplus value via food initiatives.

Through calls for proposals, Gent en Garde launches innovative, sustainable food initiatives like Food Savers, which collects food surpluses and redistributes them to social organisations in the city. Since its start in 2017, the project has collected 1,000 tonnes of food surpluses and redistributed them to

106 social organizations. Another local example is Vanier: an online marketplace where HoReCa (Hotel, Restaurant and Café) professionals or shopkeepers can buy local food products directly from local farmers and other food producers.

Ceinture Aliment-Terre Liégeoise (CATL)

Our last example is an initiative that emerged in 2013 out of a local transition group. It was launched by a coalition of citizens, economic actors and cultural actors whose objective was a thorough transformation of the regional food system. They were spurred on by the regional agricultural crisis, on one hand, and by new dynamics in the field of local and short chain farming, on the other. CATL was founded to unite all these initiatives in a single network that aims to develop a common strategy. It seeks to lay the foundation for reflection on and an action scheme to bring about a significant increase in the consumption of local produce in the province.

These successful examples have in common that they reconnect producers and consumers and adopt a circular approach to food and agriculture. Together with the countless similar examples, they demonstrate the possibility of a much-needed transition towards a more sustainable agricultural and food system. A more local and integrated food system is on the rise: one that respects farmers, consumers, the environment and animals and that has the potential to tackle all the problems cited previously.

CONCLUSIONS

In this paper, we showed how our food and agricultural system is broken and how it is putting our resources, our environment and thus our food security under pressure. An urgent transition to more sustainable modes of food production are needed. Agroecology is the compass that can help us move towards a new, holistic narrative, using three major change agents: first of all, a healthy diet, consisting of less meat, less sugar, more seasonal vegetables and fruit, and more fibre; secondly, sustainable food production, meaning “doing better with less”, giving farmers back their autonomy and dignity, cultivating a wide and diverse variety of produce, reconnecting farmers and consumers in a mutually reinforcing partnership, and protecting the environment against harmful and polluting practices; and lastly, transparent, accountable, inclusive and multilevel forms of governance, including sustainable trade regulations and re-democratization.

Current policies on the EU level, however, hamper the formation of an integrated vision for fair and healthy food. We need a Common Food Policy that satisfies primary needs like nutrition, health, and socio-economic and environmental stability. This requires ensuring access to land, water and healthy soils; rebuilding climate-resilient, healthy agro-ecosystems; promoting sufficient, healthy and sustainable diets for all; building fairer, shorter and cleaner supply chains; and, last but not least putting trade in the service of sustainable development. It stands for a new narrative that reevaluates food as a human right, a public good and a commons.

On a local level, many successful examples of re-democratised food systems already exist. By respecting farmers, consumers, the environment and animals, they are prefigurative: embodying the much-needed transition. A Common Food Policy based on the principles of agroecology can raise them to new levels.

END NOTES

- ¹ Eurostat. Statistics Explained: [Farmers in the EU, 2017](#).
- ² Eurostat. Statistics Explained : [Farm Structure Survey, 2013](#)
- ³ [Too Big To Feed: Exploring the impacts of mega-mergers, consolidation and concentration of power in the agri-food sector](#). IPES Food, 2017.
- ⁴ See www.monsanto.com
- ⁵ *Vrijheid & Zekerheid*, Dirk Holemans. EPO, 2016.
- ⁶ *Political economy of food systems reform*, Olivier De Schutter. 2017
- ⁷ Dirk Holemans. *Vrijheid & Zekerheid*, EPO, 2016.
- ⁸ Dirk Holemans. *Vrijheid & Zekerheid*, EPO, 2016.
- ⁹ [The State of Food Security and Nutrition in the World](#), FAO, 2019
- ¹⁰ [Too Big To Feed: Exploring the impacts of mega-mergers, consolidation and concentration of power in the agri-food sector](#). IPES Food, 2017.
- ¹¹ *The Law of the Seed*, Vandana Shiva. 2013
- ¹² *Political economy of food systems reform*, Olivier De Schutter. 2017
- ¹³ [Feeding the problem. The dangerous intensification of animal farming in Europe](#). Greenpeace, 2019
- ¹⁴ [The State of World Fisheries and Aquaculture](#). FAO, 2018
- ¹⁵ [The State of World Fisheries and Aquaculture](#). FAO, 2018
- ¹⁶ [Opportunities for future research and innovation on food and nutrition security and agriculture The InterAcademy Partnership's global perspective](#). IAP, 2018
- ¹⁷ [Climate Change 2014: Mitigation of Climate Change](#). IPCC, 2014
- ¹⁸ [Air pollution from agriculture: ammonia exceeds emission limits in 2015](#), EEA, 2017
- ¹⁹ *Political economy of food systems reform*, Olivier De Schutter. 2017
- ²⁰ [The Global Land Outlook: Better land use critical for 2030 agenda](#), UNCCD, 2017.
- ²¹ [Only 60 Years of Farming Left If Soil Degradation Continues](#). In: [Scientific American](#), 2018
- ²² Full Planet, Empty Plates: The New Geopolitics of Food Scarcity. Lester R. Brown. Earth Policy Institute, 2012
- ²³ <https://www.eea.europa.eu/signals/signals-2018-content-list/articles/water-use-in-europe-2014>
- ²⁴ See [De Standaard](#), 23 May 2019
- ²⁵ Air quality in Europe - 2018 report. EEA, 2018
- ²⁶ [The Global Assessment Report on Biodiversity and Ecosystem Services. IPBES, 2019](#).
- ²⁷ [Classifying drivers of global forest loss](#). Philip G. Curtis, Christy M. Slay, Nancy L. Harris, Alexandra Tyukavina, Matthew C. Hansen. In: [Science](#), 14 September 2018.
- ²⁸ [‘Ons voedsel moet twee keer zo duur worden’](#). Interview with Marjolein Visser in [De Standaard](#), 14/08/18
- ²⁹ Wouter Vanhove. [Agro-ecologische analyse van ggo's in mondiale landbouw- en voedselsystemen](#). In: [Oikos](#) 76, 2016.
- ³⁰ In the EU, citizens have clearly expressed strong opposition to GMOs. They do not want them on their plates. But the current undemocratic authorisation procedure and shortcomings in the risk assessment (not taking all economic, social and environmental consequences into account) still allows them to be placed on the EU market. In fact, the European Commission authorises GMOs even in the absence of a qualified majority of member states in favour, and the European Parliament has no veto power.
Because of citizen pressure, many member states are reluctant to agree to EU authorisation of GMO's for cultivation and have banned them on their own territory, despite the push by the agro-chemical sector and the European Commission. However, this does not mean the EU is GMO free, as a large number of GMO crops are authorised for import into the EU for food and for animal feed. During the current mandate of **Jean-Claude Juncker** as President of the European Commission, more than 30 new GMO varieties will have been authorised for import on the EU market: including maize, soya, cotton and oil-seed rape. These mostly end up (fully or in traces) in the feed of EU farm animals. It is time to review the authorisation procedure, in order to fulfil citizens demands and be consistent with adequate socio-economic and environmental requirements.
- ³¹ [Unravelling the food-health nexus: addressing practices, political economy, and power relations to build healthier food systems](#). IPES Food, 2017.
- ³² [Emissions of the main air pollutants by sector group](#). EEA, 2018
- ³³ Heart disease and stroke are the most common reasons for premature death attributable to air pollution. These are followed by lung diseases and lung cancer. Both short- and long-term exposure of children and adults to air pollution can lead to reduced lung function, respiratory infections and aggravated asthma. (Air quality in Europe - 2018 report. EEA, 2018)
- ³⁴ [Unravelling the food-health nexus: addressing practices, political economy, and power relations to build healthier food systems](#). IPES Food, 2017.
- ³⁵ [The State of World Fisheries and Aquaculture](#). FAO, 2018
- ³⁶ [Effect of Endocrine Disruptor Pesticides: A Review](#). W. Mnif, A. Hassine, A. Bouaziz, A. Bartegi, O. Thomas and Benoit Roig. In: [Int J Environ Res Public Health](#), 2017.
- ³⁷ [Les agriculteurs et la maladie de Parkinson](#). Santé Publique France, 2018.
- ³⁸ [Unravelling the food-health nexus: addressing practices, political economy, and power relations to build healthier food systems](#). IPES Food, 2017.
- ³⁹ [A 'Watershed Moment': Why it's Prime Time to Protect Children from Junk Food Adverts](#). OHA, 2017

-
- ⁴⁰ Full Planet, Empty Plates: The New Geopolitics of Food Scarcity. Lester R. Brown. Earth Policy Institute, 2012
- ⁴¹ [The Global Assessment Report on Biodiversity and Ecosystem Services. IPBES, 2019.](#)
- ⁴² [En proie à la sécheresse, la Suède connaît ses pires récoltes depuis 50 ans.](#) Le Monde, 3 January 2019.
- ⁴³ [Towards a common food policy for the European Union: the policy reform and realignment that is required to build sustainable food systems in Europe.](#) IPES Food, 2019
- ⁴⁴ Dirk Holemans. *Vrijheid & Zekerheid*, EPO, 2016.
- ⁴⁵ [Unravelling the food-health nexus addressing practices, political economy, and power relations to build healthier food systems.](#) IPES Food, 2017.
- ⁴⁶ [The 10 Elements of Agroecology. Guiding the transition to sustainable food and agricultural systems.](#) FAO, 2018
- ⁴⁷ [Report submitted by the Special Rapporteur on the right to food,](#) Olivier De Schutter, to the UN General Assembly on 20 December 2010
- ⁴⁸ [The 10 Elements of Agroecology. Guiding the transition to sustainable food and agricultural systems.](#) FAO, 2018
- ⁴⁹ [An agroecological Europe in 2050: multifunctional agriculture for healthy eating,](#) IDDRI, 2018
- ⁵⁰ [An agroecological Europe in 2050: multifunctional agriculture for healthy eating,](#) IDDRI, 2018
- ⁵¹ [German Nonprofit Creates New Open-Source License for Seeds.](#) Shareable, 2017.
- ⁵² https://ec.europa.eu/info/food-farming-fisheries/farming/organic-farming/future-organics_en
- ⁵³ <https://www.worldfuturecouncil.org/p/2018-agroecology/>
- ⁵⁴ <https://www.worldfuturecouncil.org/p/2018-agroecology/>
- ⁵⁵ Dirk Holemans. *Vrijheid & Zekerheid*, EPO, 2016.
- ⁵⁶ [Towards a common food policy for the European Union: the policy reform and realignment that is required to build sustainable food systems in Europe.](#) IPES Food, 2019
- ⁵⁷ J-L. Vivero-Pol, T. Ferrando, O. De Schutter, U. Mattei. *Routledge handbook of food as a commons.* 2019
- ⁵⁸ See https://www.commonsnetwork.org/wp-content/uploads/2019/06/OUR_COMMONS1.pdf

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