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FOOD SOVEREIGNTY

Rethinking the Food System

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Today, we are witnessing a growing and urgent debate over the future of food and farming.

There is real momentum behind the desire to transform the food system, to recognise its environmental and social costs and transform it into a system that is just, healthy and resilient.

The international food sovereignty movement is an alternative food and farming paradigm that advocates democratic control over localised agroecological farming systems.

This booklet provides an overview of the core principles of food sovereignty and how this approach offers a viable option to address the challenges of environmental breakdown, social injustice and climate change.

Obstacles on the road to food sovereignty are acknowledged. But these do not prevent us, as food citizens, from engaging more fully in the larger global debate, as well as supporting our local food systems and working together to effect positive change.

Food security versus food sovereignty

While the terms food security and food sovereignty are sometimes used interchangeably, they represent two very different approaches to both farming and feeding the world.

According to the Food and Agriculture Organization (FAO)¹: “Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.”

Food sovereignty broadens this idea to encompass the right of peoples, communities and countries to define their own agricultural, labour, fishing, food and land policies and to ensure these are ecologically, socially, economically and culturally appropriate to their unique circumstances.

Food sovereignty is, thus, embedded in larger questions of social justice and the rights of farmers and indigenous communities to control their own futures and make their own decisions. It also encompasses another concept: right to food.

Right to food protects the right of all human beings to live in dignity, free from hunger, food insecurity and malnutrition. The right to food is a legal right,

protected under international human rights and humanitarian law and many national constitutions.² It is recognised in article 25 of the Universal Declaration on Human Rights³ as well as in Article 11 of the International Covenant on Economic, Social and Cultural Rights (ICESCR).⁴

All three of these concepts are sometimes used interchangeably and certainly there are overlaps between them. But there are also significant differences. For many food activists, however, the concept of food sovereignty is pre-eminent because contained within it are the tools we need to change a food system desperately in need of change.

Defining principles

In 2007, groups involved in the international food sovereignty movement developed six defining principles, or 'pillars', of food sovereignty that should be integrated into our thinking but also our policies, laws and regulations around food. Known as the Nyéléni Declaration⁵, these define the scope of food sovereignty as a concept that:

Focuses on food for people The right to food which is healthy and culturally appropriate is the basic legal demand underpinning food sovereignty. Guaranteeing it requires policies that support diversified food production in each region and country. Food is not simply another commodity to be traded or speculated on for profit.

Values food providers Many smallholder farmers suffer violence, marginalisation and racism from corporate landowners and governments. People are often pushed off their land by mining concerns or agribusiness. Agricultural workers can face severe exploitation and even bonded labour. Although women produce most of the food in the Global South, their role and knowledge is often ignored, and their rights to resources and as workers are violated. Food sovereignty asserts food providers' right to live and work in dignity.

Localises food systems Food must be seen primarily as sustenance for the community and only secondarily as something to be traded. Local and regional provision takes precedence over supplying distant markets, and export-orientated agriculture is rejected. The 'free trade' policies which prevent developing countries from protecting their own agriculture, for example through subsidies and tariffs, are also inimical to food sovereignty.

While food security and food sovereignty are sometimes used interchangeably, they represent two very different approaches to both farming and to feeding the world

Puts control locally Food sovereignty gives control over territory, land, grazing, water, seeds, livestock and fish populations to local food providers and respects their rights. They can use and share them in socially and environmentally sustainable ways which conserve diversity. Privatisation of such resources, for example through intellectual property rights or commercial contracts, is explicitly rejected.

Builds knowledge and skills Technologies, such as genetic engineering, that undermine food providers' ability to develop and pass on knowledge and skills needed for localised food systems are rejected. Instead, food sovereignty calls for appropriate research systems to support the development of agricultural knowledge and skills.

Works with nature Food sovereignty requires production and distribution systems that protect natural resources and reduce greenhouse gas emissions, avoiding energy-intensive industrial methods that damage the environment and the health of those that inhabit it.⁶

These defining principles have become the main platform for individuals and civil society groups

supporting food sovereignty around the world and an international reference point for discussions on how to transform the food system.

While they seem sensible and achievable there is a very real division and paradigm clash between the prevailing food security approach to agriculture (see image page 5), which relies heavily on commodity crops and trade liberalisation, and the aspirations of food sovereignty which focus more on the rights of countries to prioritise their own food needs.

These clashes have made it difficult to make progress on these aims and right now several obstacles stand in the way of achieving food sovereignty throughout the world.

A different kind of productivity

Amongst those things that keep us 'locked-in' to the industrial farming model, the belief that we must, above all else, increase yields to "feed the world" is arguably the most destructive and misleading – and the hardest to shift.

The fact is that, globally, our farmers are

FOOD SYSTEM 'LOCK-INS'

The International Panel of Experts on Sustainable Food Systems (IPES-Food), among others, recognises that there is a series of deeply ingrained cycles, or 'lock-ins', holding industrial food systems in place.⁷ These include:

- The 'path dependency' of industrial agriculture, where upscaling, specialisation and mechanisation as a means of reducing labour costs, reinforce one another.
- The export oriented nature of food and farming systems in many countries, based around large-scale monocultures.
- The compartmentalised and short-term thinking that prevails in politics, research and business, which does not recognise agriculture as a whole system.
- The 'feed the world' narratives that focus attention on increasing production volumes of monoculture commodity crops above all else; and the narrow measures of success used to justify such food systems.
- The societal expectation of cheap food, which drives low-cost, high input (e.g. fertilisers and pesticides) commodity crop production.

- The focus on short-term growth and productivity, versus long-term sustainability.

The ever-increasing concentration of power in food systems into the hands of a very few international corporations, ensures economic and political power as well as profit, to the largest players, and helps keep these lock-ins in place.

For those who wish to transform the food system recognising that it is a complex and interconnected web is vital. The food system is comprised not just of people who produce and eat food, but of institutional and regulatory frameworks that determine trade policies, agricultural subsidies, market structures and prices, scientific research and educational priorities.

All of these need to be addressed simultaneously in order to loosen the locks that keep us trapped in an unfair, and increasingly 'unfit for purpose', food production system.

spectacularly 'productive' and have been for many decades since the onset of the 'Green Revolution'. We currently produce enough food (4,600 kcal/capita/day) to feed 14 billion people⁸ – nearly double the current world population. Half of this is lost *en route* to market through crop disease, poor storage on site and during transportation, as well as through retail and consumer waste.

What we need is a new way of thinking about agricultural productivity – one that does not focus on yield above all else, but which focuses instead on using resources efficiently while producing adequate yields of diverse and healthy foods.

Agriculture serves multiple functions in society beyond the production of tradable commodities. It provides both direct and indirect benefits, including food security, ecological services, livelihoods, bucolic rural landscapes which benefit both residents and the tourist industry, as well as identity and cultural heritage.⁹

In addition to their economic benefits, productive farms, also provide social and environmental benefits, such as biodiversity conservation, improved water and air quality, and access to local, fresh and culturally appropriate food.¹⁰

This more complex notion of productivity is the foundation of agroecology – a system of farming which is vastly different from the industrial system that dominates today. Agroecology reframes productivity in the context of sustainability and takes into account long-term cycles and impacts.

The industrial model presumes that farming is just like any other business and that its success can be measured in much the same way as any production line. This means productivity is measured by the total output (tonnes) per hectare.

This narrow focus on productivity, while simple to measure, has resulted in reductionist agricultural systems, which at best neglect the multiple benefits possible from more diverse agroecological systems, and at worst result in environmental degradation, poor animal and social welfare and loss of meaningful employment.

The food sovereignty movement has long recognised that agroecology – which encompasses disciplines such as organic, permaculture, biodynamic and what is more broadly referred to as 'regenerative' farming practices and focuses on whole system farming that makes the best use of

land and other resources – is also better for farmers, because of the way it contributes to the conservation and improvement of the farmer's most valuable asset: land.

Shortening the supply chain

The lock-ins that keep us tied to an industrial farming model are real but not inevitable. Those who believe, for instance, that it would be difficult, or nearly impossible to relocalise the food chain might be surprised by the fact that there are more than 570 million farms worldwide; more than 90% of which are run by an individual or family and rely primarily on family labour. They produce about 80% of the world's food.¹¹

Superficially this suggests that a framework for change already exists. But many of these farmers are living in poverty, even in developed nations. Their land and soil can be very degraded and their

access to the tools and support necessary to improve it is limited. They may be able to grow crops for large agricultural companies and supermarkets but unable to feed their own families.

And yet strengthening this network of small farmers, investment in their farms, and in the infrastructure needed to build and supply local, regional and national markets is one of the most promising means of combating hunger and malnutrition, while minimising the ecological impact of agriculture.¹²

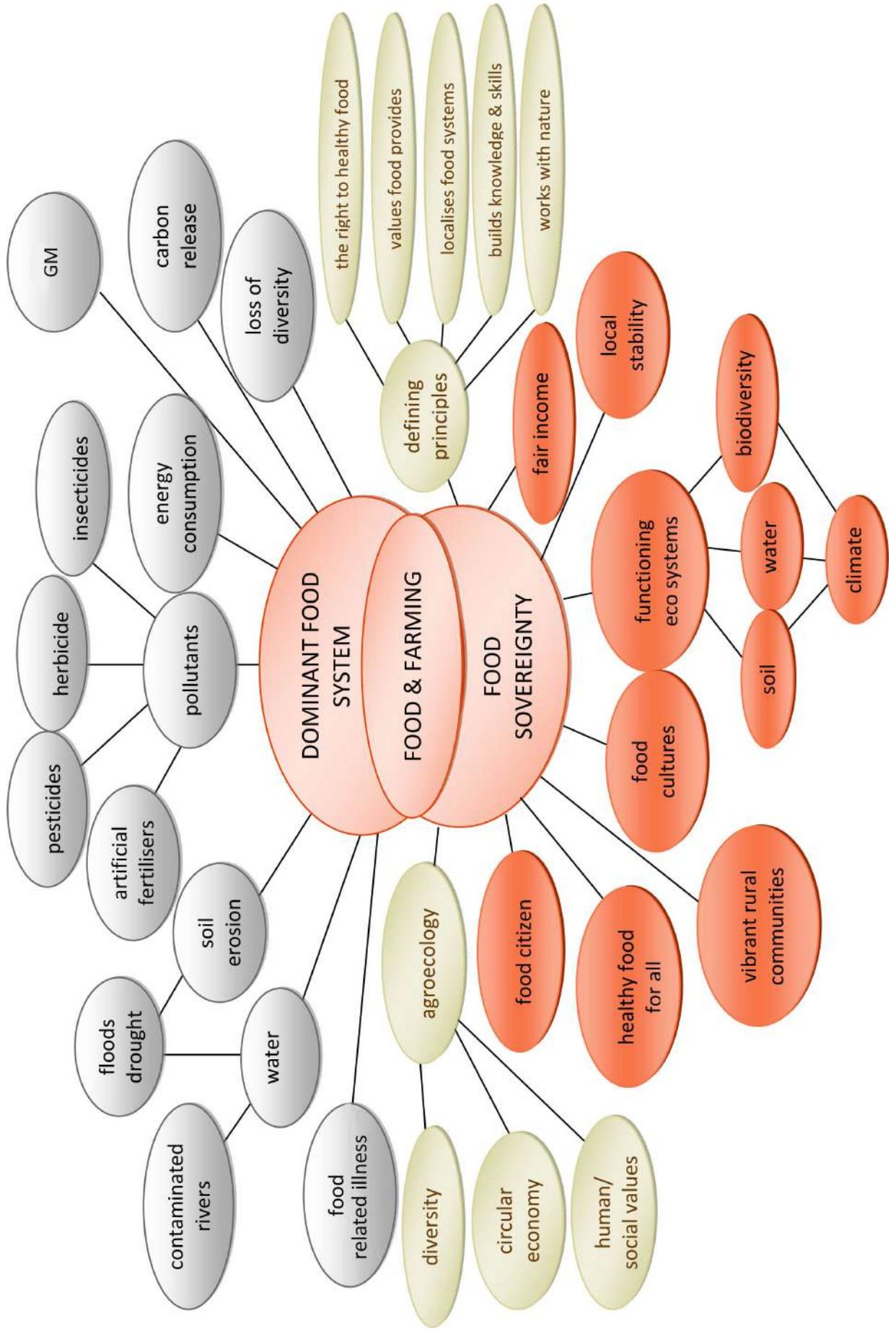
Shortening the supply chain meets the goals of food security and food sovereignty and right to food. It has benefit for farmers, as well as benefits for consumers enabling clearer information on where their food comes from, how it was grown and who grew it.

Without having to travel thousands of miles, local food is more likely to retain freshness and the nutrients needed to nourish a hungry population. Buying local food also means that money stays in the community so that it can be reinvested in land and food quality and distribution infrastructure.

Supporting small farmers also helps maintain local knowledge and skill. As farmers leave the land¹³ due to poverty and burn-out, we don't just lose a workforce; we lose skills that we need to support whole system agriculture. Those farmers that remain are more likely to follow a path of greater mechanisation and high input monoculture farming simply to make a living.

Experts recognise that there is a series of deeply ingrained cycles, or 'lock-ins', holding industrial food systems in place

A COMPLEX, CONNECTED WEB



Mono crops = mono diets

Monoculture farming – using vast tracts of land to grow a single commodity crop – has multiple drawbacks. It takes more from the land than it gives back, often leaving the soil degraded and unable to support healthy crops. Degraded soil requires more inputs of fertilisers. Crops grown in degraded soil are also more prone to disease and, therefore, require more pesticides.

These inputs are expensive for the farmer, but also costly in terms of environmental damage. Fertilisers can leach into waterways, causing algal blooms that suck the oxygen out of the water, killing off all other organisms. Pesticides leach into the water too, and along the way they can also kill plants, insects and animals vital to a thriving ecosystem.

Monoculture farming also degrades the natural diet of humans.

Today we may be eating more, but we are not eating better and the way we eat – a dietary monoculture – is leading us down the path to a different kind of global food poverty and poorer health.

For instance, using data from the Food and Agriculture Organization of the United Nations (FAO), scientists tracked more than 50 crops across more than 150 countries (accounting for 98% of the world's population) during the period from 1961-2009.¹⁴

Their work, published in 2014, showed that, over the last five decades, human diets around the world have grown ever more similar – by a global average of 36%. This trend shows no signs of slowing¹⁵, with major consequences for human nutrition and global food security.

Instead of consuming the diverse diet that humans need to thrive, most of us are consuming more calories, protein and fat, from an increasingly short list of major food crops – mostly wheat, maize, rice and soybean, along with industrially produced meat and dairy products.

Viewed from a strictly food security perspective it is argued that these monoculture foods are critical for combating world hunger. But world hunger has not reduced much since the advent of the Green Revolution and this new global diet, which has more calories and less nutrition, has become responsible for the global rise in non-communicable diseases such as obesity, heart disease and diabetes.

Trade – a double edged sword

Commodity crops, grown in large monocultures, are the staple of international trade.

On the global market they are sold to the highest bidder in transactions that exclude those who cannot afford to buy them. This has been apparent for many decades but came to a head in 2008 when a combination of rising oil prices and weather-related crop failures saw world food prices increase dramatically (in some cases by more than 100%).

These increase were passed directly onto consumers. Food riots broke out in Italy, Haiti, Bangladesh, Egypt, Uzbekistan, Africa, India, Indonesia, Saudi Arabia, Mexico and Argentina.¹⁶

Some of the worst effects were felt in those countries that depend on food imports as a key source of their national food supply.

Rather than using the crash of 2008 to learn from our mistakes, market traders

have doubled down on the idea that trade liberalisation results in more availability and lower food prices in all countries, as dictated by the forces of 'supply and demand', resulting in greater access to food and improved food security.

Even though evidence for this is lacking, most governments choose to allow that reasoning to dictate agricultural policy, even as they make noises about environmental sustainability.¹⁷

There is ample reason to question the wisdom of trade liberalisation. At the very least, looking at trade as a threat rather than an opportunity provides space for the kind of reflection and critique that focuses on smallholder farmers, biodiverse low-input farming systems and a radical reduction in the reliance on international trade for meeting food security needs.

To begin to unpick the issue of trade we need to acknowledge that there are risks, particularly for poorer countries, in relying too heavily on it.¹⁸ These include:

- Loss of autonomy over decision-making and livelihoods for smallholders.
- Increased corporate concentration and dominance of global value chains.
- Loss of land rights as agricultural land is acquired by foreign and large-scale investors.

Most of us are consuming more calories, protein and fat, from an increasingly short list of major food crops – mostly wheat, maize, rice and soybean

- Ecological costs such as loss of genetic diversity and increased carbon emissions.
- Elevated health risks from growing, trade in, and consumption of, processed and packaged foods.

It is possible that we can never fully reconcile notions of food sovereignty with those of trade liberalisation. But that does not mean that we should abandon efforts to find a better balance. A changing climate and a growing population demand that we do so.

Certainly nobody is suggesting that there should be no trade. Some commodities such as herbs and spices and speciality foods such as tea, coffee and cacao can form a legitimate part of international trade.

Not all countries can be self-sufficient in food; some countries must rely on trade for their food security because they lack the capacity to produce sufficient quantities of their own food due to climatic conditions, soil quality, water constraints, availability of farmland, etc. Closing borders completely could have negative impacts on food security in these countries.

For some crops small farmers may lack the capacity to produce and distribute at the scale needed. In addition not all farmers in all countries want to work on small holdings – indeed we may need some large scale farming in the mix – and the right of these farmers to choose that path should also be respected.

The suggestion is that trade should be proportionate and fair. Initiatives such as Fair Trade go some way to addressing this but fall short in many respects due to the limited range of products traded under such schemes but more crucially to the way, as some critics believe, they can undermine longer term economic prospects of farmers in poorer countries by keeping them tied to a global export market.¹⁹

Sustainable intensification – new name, old habit

When politicians and policymakers talk about sustainability they often tack the word ‘intensification’ onto the end of it. Sustainable intensification is now the political buzzword of choice. It may sound good but it’s worth digging a little deeper into its true meaning.

Sustainable intensification describes a largely industrial approach to farming with a continued focus on high yields, increased mechanisation and more technology including biotechnology and genetically engineered crops (GMOs).

At the extreme end of ‘think tank’ thinking, it includes the idea that we can remove farmers, the least profitable part of the system, from the equation entirely, decoupling food production from the land and open air (known as the ‘dark food chain’ because it does not rely on sunlight/ photosynthesis²⁰) and producing our food in factories from synthetic, or ‘synbio’, organisms.²¹

Sustainable intensification is still largely judged against tonnes per hectare or calories per hectare.

Proponents argue that, yes, the system may be high input, but it is also high output, producing more crops/calories on less land and is, therefore, more ‘ecological’ and ‘climate friendly’.²²

This is Old World thinking, criticised as representing a

“1% solution”.²³ It benefits those who invest in or can afford to use increasingly complex technology and who can buy and sell in the global marketplace.

What we need is New World thinking, a 99% solution that works for the majority. We need biointensive agroecological farming systems that focus on diverse yields from the available land, while simultaneously improving the soil and long-term sustainability on a closed-system basis.

Unlike industrial farming, agroecological practices can be scaled up or down making them well suited to anything from personal, family or community gardens and allotments to market gardens and minifarms. It has also been practiced successfully on small-scale and large scale commercial farms.

To make this kind of farming work we need more farmers not fewer²⁴ (which is the current direction of travel). Indeed, we may need to rethink our ideas of what a ‘farmer’ is. Perhaps a farmer isn’t someone who works mostly in mechanised isolation with 500 acres and a big tractor and other expensive machinery.

Certainly this is not what farmers looked like 100 years ago, and it’s not an accurate picture of most farmers in less-industrialized countries today. Nor does it align well with what will be needed in the coming decades.

Unlike industrial farming, agroecological practices can be scaled up or down making them well suited to anything from personal, family or community gardens to large scale commercial farms

In a web of more localised systems perhaps we should start thinking of a farmer as someone with 3 to 50 acres, who uses mostly human labour and who shares tools and tractors with others in a more cooperative fashion.

Do we need a collapse before rebirth?

Environmental educator Richard Heinberg notes that most civilisations follow an 'adaptive cycle'²⁵ of reorganisation, growth/exploitation, conservation and, finally, collapse/release. Our civilisation, he believes, is coming to the end of its conservation phase and entering collapse. To make it through to a new 'reorganization' phase requires adaptation to the collapse. When it comes to food production and consumption, this adaptation is ever more urgent.

In his essay *Notes on Hunger and Collapse*²⁶, Professor Jem Bendell, a proponent of deep adaptation, addresses the notion that threats to our food supply are, arguably, more urgent than climate change.

Climate change is happening and we cannot stop it; and even as the climate changes people need to be fed, therefore we must adapt. To do this we need effective policies and governments everywhere need to step up and plan for a changed world.

Bendell recommends several actions including:

- Importing countries need to increase domestic production of basic foods, including through irrigation, the use of greenhouses, as well as urban and community-based agriculture.
- Importing countries need to geographically diversify sources of food imports rather than rely on whatever is cheapest or habit.
- All countries need to diversify the range of species involved in their domestic agriculture, with a focus on a wider range of resilience to weather stress, and this be done with a holistic agroecological approach, recognising the threat from collapsing biodiversity.
- Governments need to re-instate the sovereign management of grain reserves and prepare for requisition of private grain reserves in crisis situations.
- A treaty and systems may be needed to help keep the international food trade going despite any future financial or economic collapse.

- National contingency plans may be needed to prepare for food rationing so that any rapid and major price rises are not allowed to lead to malnutrition and civil unrest.

- In the absence of significant new forms of government action on food security, local governments need to act, including through partnerships with companies that can manage food distribution.

But we also need a sea change in the human relationship to food. Our tastes and preferences need to adapt. We need to reign in our desires to eat whatever we want whenever we want, we need to learn about food systems, cycles and seasons and to preserve what we have rather than waste it.

Our productionist food system threatens planetary well being and separates us from both place and food

We need to prioritise nutrition over calories and demand that our farmers do the same. We also need to

find our way back to a sensible relationship with food, one which author Carolyn Steel believes is rooted in a sense of place rather than the placelessness of the global market.

Food in its place

In her book *Sitopia*²⁷, (which translates as 'food place' from the Greek 'sitos' meaning food, and 'topos' meaning place), Steel argues that our productionist food system threatens planetary well being and that we have become separated from both place and food.

Historically we were connected to place through the taste, textures and aromas of the food we ate. Our dietary habits were formed across many generations from local food systems and embedded into regional food cultures.

Today the food-spaces we inhabit have changed beyond recognition, communities are no longer in charge of their local food systems, livelihoods are less connected to the land, traditions around food have been lost and for many there is a feeling of being 'out of place'.

The emerging food sovereignty movement seeks to bring a better way of being in the world by creating a socially and environmentally just system that, in turn, supports the growth of vibrant, healthy, food cultures.

As Michel Pimbert²⁸ puts it: "This notion of 'food sovereignty' is perhaps best understood as a transformative process that seeks to recreate the

democratic realm and regenerate a diversity of autonomous food systems based on equity, social justice and ecological sustainability."

There are many diverse issues that hinder the transition to this equitable food system, including the issue of poverty along with how we value food and the mindset of consumer.

Putting poverty in the picture

In the UK we have seen an increasing number of people living in food poverty accompanied by an ever increasing use of food banks.

From 2008 -2018, the Trussell Trust, the UK's largest national food bank charity, grew from 26,000 food parcels a year to 1.33 million.²⁹ The 2020 Covid-19 pandemic further highlighted the dismal lack of food for an increasing number of people; but it also brought into focus how communities have the ability to work together to make sure the most vulnerable are supported.

Access to food does not exist in isolation it is just one aspect of poverty in general. Giving people emergency food packages doesn't fix the underlying problems that exist of social exclusion and low wages. Food parcels have been essential but in the long term, changing our food systems together with wider social and economic policy solutions is urgently needed to address food inequality.

Food sovereignty embraces agroecological small scale farming and focuses on the needs of people above profit. This is the much needed alternative paradigm to transform current food systems. Of course nothing works in isolation which is why we need a coherent governmental framework that

invests in social infrastructure and safety nets. Healthy, nutritious and sustainable food must be made available and affordable for all.

The true value of food

Making food affordable does not mean simply reducing the cost of food. Instead we need to increase the accessibility of sustainable food. In the West, the global food system provides us with an infinite variety of food, all in abundance, but the price of food rarely reflects its true cost.

Our present food system involves costs that are externalised, including soil depletion, water pollution, loss of biodiversity and diet related ill health.

Corporate control has delivered cheap food, but this has come at a huge cost. The Sustainable Food Trust's 2019 report, *The Hidden Cost of UK Food*³⁰, found that for every £1 spent on food by UK customers, an additional 97 pence of health, environmental and climate impacts are generated.

In reality, writes Carolyn Steel, "cheap food is an oxymoron". What might the world look like if we were to internalise the true cost of food? "The answer", she concludes, "is that industrial farming would rapidly become unaffordable while ecologically produced, organic food would emerge as the bargain it has always been".³¹

The language we use to frame food further affects the value that we attach to it; framing food as a commodity is very different, for example, to framing it as a gift from the earth. Giving food its true value will bring wide ranging benefits to many of the complex challenges we face in the 21st century.

Externalities in the food system

Outputs or externalities of the food system can be either positive or negative depending on the type of production or processing methods used. Examples of externalities in the food system, according to the 2015 Food Tank report *The Real Cost of Food*³², include:

- Air pollution
- Animal welfare
- Antibiotic resistance
- Biodiversity loss
- Child labour
- Climate change
- Deforestation
- Foodborne pathogens
- Greenhouse gas emissions
- Healthcare costs
- Land use
- Obesity
- Soil erosion
- Subsidies
- Taxes for welfare and social services
- Water pollution
- Workers' rights

Becoming food citizens

We have been sold a food consumer-orientated lifestyle. But we need to break away from an idea of ourselves as passive food consumers which undermines the true value of our relationship with food.

"Consumers", according to Wendell Berry³³, "buy what they want – or what they have been persuaded to want – within the limits of what they can get. They pay, mostly without protest, what they are charged. And they mostly ignore certain critical questions about the quality and cost of what they are sold."

The need has never been greater to reconnect with the land and the source of our food, and to shift from the mindset of a consumer to that of a citizen. Food citizens are involved, in one way or another, with the food they eat, actively supporting thriving communities and building a fairer and more sustainable food system.

New Citizenship Project

Jon Alexander & Irene Ekkeshis created The New Citizenship Project³⁴ to change our consumer attitudes and encourage us, as food citizens, to be more engaged with the policy decisions that shape the food economy, and not just with what we put in our shopping baskets.

They write: "When we think of ourselves as citizens we're more likely to participate, volunteer and come together to make our society stronger and more effective."

Food citizens concerned about the environmental, social and health implications of the food they eat will find there are a variety of ways to be actively involved in a thriving local food system by:

- Supporting food that reflects the true cost to society and the environment by buying produce from family farms, local fruit and vegetable growers and artisan producers who embrace the principles of agroecology.
- Being actively involved in producing food through a CSA or growing in the garden, allotment or community garden.
- Taking action to help to minimise waste. For example, joining the Gleaning Network which rescues fresh surplus fruit and vegetables from farms where it would have gone to waste and distributes it to people in need.

- Organising pot luck suppers or a community feast to showcase locally grown food.
- Sharing knowledge on food preparation and preservation.
- Joining and supporting food and farming campaigning organisations.

Family farms, local fruit & veg growers and artisan producers

Big business dominates our global food system. A handful of large corporations control much of the production, processing, distribution, marketing and retailing of food. Transporting food around the globe brings additional costs related to fuel and refrigerants and adds to greenhouse gas emissions and global warming.

This is not good for the health of the planet nor is it good for communities or individuals. Under this system, millions of people lack nourishing food and we are all vulnerable to changing global conditions from climate change, alterations in trade agreements and pandemics.

Over the last century the move towards monocultures, the commodification of food and the concentration of power into a handful of

organisations have all contributed to a major decline in biodiversity and this includes crop diversity on farms. Diversity of farm crops is fundamental to food and nutritional security.

Food citizens are concerned about the environmental, social and health implications of the food they eat

It is thought that there are around 300,000 edible plant species in the world. Humans eat only about 200 of these and just three – rice, corn and wheat – provide half the plant-sourced protein and calories in the modern human diet.³⁵

Reduced agrodiversity, has reduced dietary diversity and this in turn has affected the diversity of microbes in our guts. Diversity of gut microbes is critical to the functioning of the immune system and our overall health and vitality.

Climate change is expected to have significant impacts on food production. "It is clear", says deep adaptation leader Jem Bendell³⁶, "that our food system is going to be under weather pressure like never before. On top of the direct impacts of extreme temperatures, droughts and floods, there is also the secondary impact of adverse weather making plants more susceptible to disease."

Increasing diversity – at genetic, crop and landscape levels, will help increase resilience against climatic conditions, pests and diseases.

Understanding the importance of diversity in our food systems has led to a growing number of farmers and horticulturists sowing population, heritage and open-pollinated varieties of seeds and growing a greater variety of plants such as oca, one of the 'lost crops' of the Incas and heirloom beans and ancient grains.

In addition, by adopting practices like intercropping and creating more diverse habitats around their fields and plots, they minimise pests and disease and support a vital, healthy soil teeming with diverse microorganisms.

The agroecological farming practices adopted by many small farms enhance the productive potential of the land because they improve soil fertility and prevent soil erosion. Every year more organic matter is built up in the soil, making it possible to produce more and more food, though of course, geography and climate will affect what food can be produced in any given area.

There are numerous ways in which citizens can change their buying habits to support small farmers and artisan producers:

Local farmers markets

Buying food from a farmers market is a great way to connect with growers. Purchasing direct supports the local economy and, whilst local farmers markets will have different structures and aims, in general they are increasing access to fresh seasonal produce and supporting a local food culture.

Box schemes

Another way to support local farmers is to join a fruit and vegetable box scheme. Mostly from organic farms, these schemes deliver a bounty of seasonal produce, freshly harvested, packed full of flavour and nutrition. Many box schemes offer a variety of other produce including eggs, meat and dairy.

In 2020 the UK saw the unprecedented growth in fruit and veg boxes with many of the 500 or so schemes having long waiting lists. Going forward, to meet and maintain the demand, these schemes will need investment to support infrastructure including poly tunnels, cold stores and packing houses.

With support these schemes, can effectively help

decentralise our food systems and continue to provide affordable, nutritious food.

Community Supported Agriculture (CSA)

CSA offers the opportunity to become more involved with the farms that produce our food.

There are different types of CSA schemes but basically the risks, responsibilities and rewards of growing food are shared by all those involved; it is a relationship of mutual support and commitment between local farmers and community members.

The first CSA projects were, most likely, initiated in Japan in the 60s when Japanese women, concerned about pesticide use, fostered relationships between local farmers and communities as a way to return to authentic food production and become more connected to the land. Tektite, as it was known, loosely translates as 'food with a farmer's face on it'.

Because of a growing distrust of chemicals being used in farming, the idea took hold and spread around the world.

By linking farmers with their communities, CSA helps

strengthen local economies and allows people to have a personal connection with their food and the land on which it was produced. Nationwide there are over 100 CSA farms in the UK.

Grow your own food in the garden, allotment or a community garden

Planting seeds, growing your own food and harvesting the resulting bounty, a stone's throw from the kitchen, is empowering.

From a few pots of herbs on the doorstep to raised beds of vegetables, growing your own connects you directly with soil and plants, the seasonal rhythms of nature and a greater appreciation of food as well as providing (however small!) an alternative food source.

Growing food in our urban spaces also supports beneficial insects and birds. Gardeners are always happy to share and swap information and produce which helps forge a strong community spirit.

If you do not have a garden you could rent an allotment, although in many cases there are long waiting lists. Another option is to join (or even start) a community food growing project. This could be a vegetable garden, an orchard or a forest food garden depending on the land available.

It's not only about harvesting wonderful produce.

With CSA farms, the risks, responsibilities and rewards of growing food are shared by all those involved

These community projects improve the quality of life for local people who participate, providing a wide range of health benefits within a supportive social environment. They also offer a great opportunity for skill sharing.

Education is integral to food sovereignty, not simply learning where your food comes from but learning the skills that are needed to grow and prepare food. People involved in community growing can learn about soil, seed saving and companion planting along with preserving, storing and cooking food. Many community growing projects host horticultural training courses on everything from how to prune a fruit tree and no till gardening to composting. In addition, there are often opportunities to learn how to preserve and store fruit and vegetables.

Preserving food

The UK creates 9.5 million tonnes (Mt) of food waste every year, 6.6Mt of that food comes from households – and almost three quarters (70%) of this food is edible.³⁷ There is something wrong with a food system that allows this to happen. Complex issues are inevitably involved, but in our kitchens there are ways we can help minimise food waste like adopting simple methods of preservation.

At the end of the growing season, traditionally the harvest is either eaten fresh or preserved and stored for future eating. Food preservation was once a way of life and a larder to store an array of preserved foods was the backbone of the kitchen.

A store of home preserved foods ensures you have something to eat and share whatever shock befalls our system. Preserving food, be it from leftovers or a seasonal glut, means nothing goes to waste. Today fewer people consider food preservation a necessity but there are many benefits in learning this traditional skill. It is a fantastic way to stretch your budget, help the environment and live a healthier life all at the same time.

Dehydration

Vegetables, fruit and herbs are all very easy to preserve by the process of dehydration and are perfect larder foods.

Dehydration (or drying) is one of the oldest methods of food preservation. It is a method of food preparation that works by removing water from food thus inhibiting the growth of bacteria, yeasts and moulds. It generally involves a method of

heating at a low temperature with plenty of air circulation.

Dehydrators give consistent results, are easy to work with and produce a good quality product. The initial outlay may be a bit daunting but in the long run it will save money. A good solution is to buy a community dehydrator and share the use and cost. If one person has, say, an abundance of tomatoes to dry and another has pears they can swap the dried foods with each other.

Fermented foods

Fermented foods also store well in the larder especially lacto-fermented vegetables.

There are two basic techniques. The first is pickling; not as many people think using vinegar, but with a brine made from 2 tablespoons salt to a litre of water. You simply submerge the vegetables in the brine and leave them to ferment.

The second is dry salting and this is when salt is used to draw the liquid from the vegetable thus creating its own brine. This is how you make sauerkraut, and once you master the basic technique the variations are endless.

The key to success with either method is ensuring the vegetables stay submerged under liquid at all times as lacto-fermentation is an anaerobic process (for more information see Resources).

Food preservation was once a way of life and a larder to store an array of preserved foods was the backbone of the kitchen.

Ultimately food is about relationship – with soil, plants, animals, landscape, seasons and people. By paying greater attention to the myriad relationships integral to producing food for the well being of all, a new food system that fit for purpose in the 21st century can emerge.

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RESOURCES

Click on links to access online

Learn more about preserving

Greencuisine Trust produces a card series of practical ideas and recipes for preserving and recycling food. greencuisinetrust.org

Supportive Organisations (UK)

Big Barn

bigbarn.co.uk

Common Ground

commonground.org.uk

Community Supported Agriculture UK

communitysupportedagriculture.org.uk

Food Ethics Council

foodethicscouncil.org

The Food Foundation

foodfoundation.org.uk

Friends of the Earth UK

friendsoftheearth.uk

The Gleaning Network

gleaning.feedbackglobal.org

Global Justice Now

globaljustice.org.uk

Landworkers' Alliance

landworkersalliance.co.uk

Making Local Food Work

makinglocalfoodwork.co.uk

New Citizenship Project

citizenship.org.uk

Open Food Network

openfoodnetwork.org.uk

Seed Cooperative

seedcooperative.org.uk

The Orchard Project

theorchardproject.org.uk

Garden Organic

gardenorganic.org.uk

Land Justice Network

landjustice.uk

Sustain Alliance

sustainweb.org

Sustainable Food Trust

sustainablefoodtrust.org

WRAP

wrap.org.uk

Supportive Organisations (Global)

Ecology and Society Journal

ecologyandsociety.org

Food Tank

foodtank.com

Grain

grain.org

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viacampesina.org

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