



# GOOD FOOD

## MAKES EVERYTHING BETTER

### CLIMATE CHANGE

**OUR CLIMATE IS CHANGING** and this change – brought on by rising levels of atmospheric greenhouse gases – will affect us all in one way or another.

Each of us has contributed to this change and each of us has duty to understand why it's happening, what it means and what, if anything, we can do about it.

A major consequence of climate change is the way it has exposed the vulnerabilities of our industrial farming and food systems.

It has brought more drought, flooding and a decline soil health. Invasive pests and diseases are also spreading as a warming planet extends their natural territories.

Those who live and work in some of the poorest countries will be most affected as their land becomes unproductive and uninhabitable and they are pushed further into poverty and hunger.

But throughout North America and

Europe, the breadbaskets of the developed world are also experiencing problems that will only intensify as temperatures rise.

### FARMING CHANGES THE CLIMATE

Agriculture isn't just a victim of climate change; it is also a major cause.

This is because while most of us associate farming with nature and the natural cycles of life, agriculture, as it is currently practiced, is an industrial process.

It relies on practices such as the heavy use of pesticides and fertilisers, which reduce the soil's ability to store carbon, and it is driven by machinery which requires fossil fuels to run.

When all farming practices and land use changes – such as deforestation, forest degradation and the draining of wetlands – are taken into account, agriculture is responsible for more than a third of global greenhouse gas emissions (GHGs); and not

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just carbon dioxide (CO<sub>2</sub>) but high levels of more damaging gases as well.

For example, enteric fermentation – the flatulence of ruminants such as cows, sheep and goats – as well as manure stored as slurry, burning the savannah, wetland rice cultivation and wasted food degrading in landfills, is responsible for around 30% of global methane (CH<sub>4</sub>), a gas 21 times more powerful than CO<sub>2</sub>.

The interaction between soil and synthetic nitrogen fertilisers produces around 66% of global nitrous oxide (N<sub>2</sub>O), which is 310 times more powerful than CO<sub>2</sub>.

There is currently no sign that agriculture's contribution to climate change is slowing.

## FOOD VERSUS FUEL

In trying to reduce our overall fossil fuel use, some farmers have turned their land over to growing corn, soya and sugarcane to produce ethanol-based biofuels. These crops are often genetically modified, because although most people don't want to eat GMOs, they seem less concerned about using them for fuels – even though the environmental risks of growing these crops are the same whether we eat them or not.

Today around 45% of all GMO crops feed machines, not people.

But biofuels have largely failed to solve our fuel and climate problems. In some cases they use more energy to produce than they return to the system.

In addition, it is estimated that one gas tank of biofuel requires an amount of corn that could feed one person for an entire year. Many question the morality of using food crops for fuel when other technologies can meet our demand for energy without contributing to global hunger.

## CHANGING THE WAY WE EAT

The same crops that feed our vehicles also feed our livestock. Today intensive animal agriculture is responsible for 18% of human-induced GHGs – roughly equivalent to the emissions of every car, train, ship and plane on Earth. The more meat we produce and eat, the greater this contribution will become.

Food processing is also problematic. Even before adding the fuel necessary to ship food from factory to consumer, it is estimated that the food-processing industry uses 7-10 calories of fossil-fuel energy for every calorie of food energy it produces.

As the need to reduce GHGs, and the energy use that causes them, becomes more urgent "eating the world" – flying and shipping foods around the world with little regard for seasonally or regionally appropriate diets – becomes harder to justify.

If we wish to live in a world where everyone has enough to eat, and where our farming system is resilient enough to withstand global climate changes, things must change.

Yet when international government representatives meet to talk about climate issues, their discussions rarely include serious consideration of the food and farming system.

## FARMING LIKE THE FUTURE MATTERS

All evidence suggests that a shift towards locally produced, fresh and unprocessed foods, and low meat diets, would significantly lower agriculture's contribution to climate change. It would also be healthier for us all.

How we farm needs to change too. The solution lies in agroecological methods, such as organic, biodynamic and permaculture, which focus on more than the narrow metrics

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of increasing yields and growing markets. By avoiding highly polluting, synthetic nitrogen fertiliser organic farming, for example, contributes less to GHG emissions and has a greater potential to hold carbon in the soil than industrial systems.

Agroecology focuses on how each part of the system works together, with nature and the surrounding landscape to produce healthy food whilst still caring for the Earth. It reduces our reliance on fossil fuels for agrochemicals, machinery, transport and distribution, and so reduces GHGs as well.

Choosing to buy food produced in this way is a 'lifestyle choice', in the sense that it is an active choice about how we live on this planet. Instead of being a luxury, it is a necessity; because changing how we farm and how we eat is vital for a sustainable future.

Climate is one of our most important natural resources. The climate of the Earth is what has allowed life on this planet to thrive. How we use it, whether we work to preserve it or destroy it, is in our hands.



This leaflet is part of a series on sustainable food issues, produced by Beyond GM. References available online:

[beyond-gm.org/good-food](http://beyond-gm.org/good-food)