Agroecology
getting to the root causes of climate change

This issue of Farming Matters addresses the intersection of agroecology, food sovereignty and the climate crisis. Climate change is a political problem that highlights the need for systemic change to the way food is produced, processed and distributed. From agroecological practices that build resilience, to social movements that resist land grabbing, the articles presented here not only argue for changes to the food system but demonstrate some of the possibilities.

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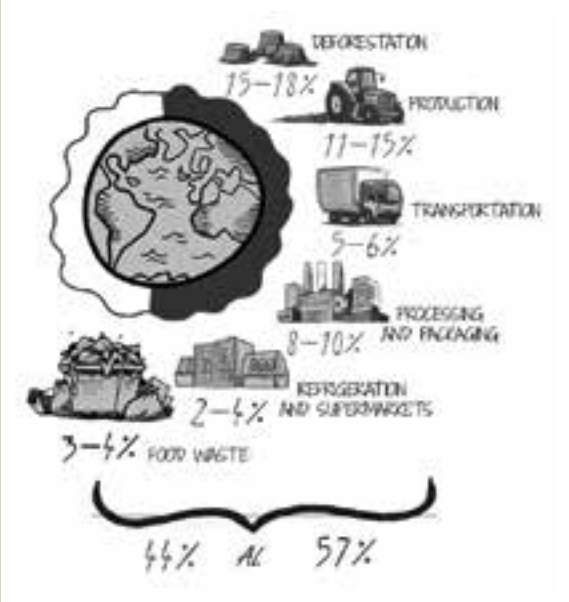
"Food has not been the focus of climate change discussions as much as it should have been. (...) We can still act and it won't be too late"
Barack Obama, 26 May 2017.[1]

Of course, Barack Obama can speak more freely now that he's not in the White House with the agribusiness lobby breathing down his neck. But he is right in that the climate–food connection has been largely absent from the climate discussions – at least in the official circles. This issue of Farming Matters focuses on this connection. It shows how the industrial food system is a main culprit when it comes to the climate crisis, and illustrates how agroecology and food sovereignty offer solutions by addressing the root causes of this crisis – political, social and environmental.

The latest studies calculate that the global food system – from farm to fork – is responsible for at least one third of all greenhouse gas emissions, a figure that seems to increase with the release of each new report.[2] GRAIN puts the figure closer to 50%, and stresses that it is the *industrial* food system which is mostly responsible for this.[3] Besides not feeding the people with enough healthy, culturally appropriate and sustainably produced food, the industrial food system is also leading us down the path of a global environmental crisis, of a scale and impact that humanity has never faced before.

Agriculture is supposed to be about turning the energy provided by the sun into food and fibre. But the corporate-driven global food system mostly relies on fossil energy: for chemical fertilizers and pesticides, mechanisation of the farm, pumping water for irrigation, etc.

Summary of how the agroindustrial food system contributes to the climate crisis.
Source: Together we can cool the planet, La Via Campesina & GRAIN, 2016. (see page 36)



Agroecological practices would massively build back organic matter into the soils and largely eliminate the need for chemical fertilizers (see page 38). Photo: Kate Sylvan

Deforestation driven by ever expanding commodity crop plantations, soil erosion driven by unsustainable practices, transport, processing and freezing of food produced in places far away from where it is consumed, and the tremendous energy waste in the increasingly centralised corporate retail and supermarket systems aggravate the problem. Each of these emit huge amounts of greenhouse gases into the atmosphere.

Despite the obvious connection between the industrial food system and the climate crisis, and the obvious potential that agroecology and food sovereignty offer to turn the tide, these links are nowhere to be seen in any of the governmental climate negotiations. Instead, government officials seem to be betting on financial carbon markets and other corporate-driven 'solutions' that get us in deeper trouble. As Michel Pimbert explains, these false solutions include 'Climate-smart Agriculture' initiatives which merely conform to the dominant industrial food and farming system and are working against a truly transformative agroecology (page 9). REDD+, carbon markets and biofuel policies are additional examples of false solutions that work against agroecology and food sovereignty. In another article (page 28), GRAIN shows how industrial meat and dairy production is encouraging over consumption of meat with a disastrous impact on the climate and human health.

It doesn't need to be this way. A radical shift towards food sovereignty would go a long way in solving the climate crisis: agroecological practices would massively build back organic matter (carbon) into the soils and largely eliminate the need for chemical fertilizers, and a focus on local markets and fresh produce would reduce the need for long distance transport, freezing and processing. Agrarian reforms aimed at supporting small scale food producers rather than promoting plantation farming would give back the land to those who produce food rather than those who produce commodities and help stop deforestation in the process.

Nurturing the soil, cooling the planet

The food–climate intersection is rooted in the earth. The expansion of unsustainable agricultural practices over the past century has led to the destruction of between 30-75% of the organic matter in soils on arable lands, and 50% of the organic matter on pastures and prairies. This massive loss of organic matter is responsible for a large part of the current CO_2 excess in the earth's atmosphere. But the good news is that the CO_2 that we have sent into the atmosphere can be put back into the soil simply by restoring and supporting the practices that small farmers have been engaging in for generations. This has the potential to capture more than two thirds of the current excess CO_2 in the atmosphere.[4]

On page 38, Nicholls and Altieri provide plenty of examples outlining the role of diversity, soil organic matter and soil cover in reducing farmers vulnerability to climatic shocks. Another article (page 26) documents the efforts being made in the United States to learn from farmers' innovative practices developed to take care of the soil. Increased intensity and frequency of drought is becoming a more common phenomena in many parts of the world. Soil and water conservation that promotes ecological resilience has been a key

A focus on local markets and fresh produce would reduce the need for long distance transport, freezing and processing. Photo: Shalmali Guttal (see page 32)

strategy for farmers in Haiti to continue producing food (page 14). But, these Haitian farmers also know that building resilience is not just an ecological question, and they are also challenging state power and defending their rights. The struggle against the climate crisis is also a question of equality and justice.

Climate justice Those who are most gravely affectedly climate change are those who are the least responsible for it. Shalmali Guttal (page 32) asserts that: "The struggles of local communities against forced evictions, industrial agriculture, extractive industry and large dams, and to protect their lands, territories, seeds and breeds are all struggles for climate justice." Today, small farmers are squeezed onto less than a quarter of the world's farmlands, but they continue to produce most of the world's food. Over the past 50 years, a staggering 140 million hectares – the size of almost all the farmland in India – has been taken over by four crops grown predominantly on large plantations for industrial purposes: soybeans, oil palm, rapeseed and sugar cane. The global area under these and other industrial commodity crops, is set to further grow if policies don't change. All too often alliances between states and corporations conspire to promote market-driven 'development' that undermines small scale producers' rights to land and natural resources. In the context of climate change and natural disasters, 'disaster capitalism' exacerbates this kind of dispossession and permanent displacement of people. For example, in the Philippines, the devastation caused by Typhoon Yolanda, was used to defeat farmers who had been resisting land grabbing for decades before the disaster struck (page 42).

The pages in this magazine demonstrate how small scale farmers bear some of the biggest burdens brought about by the crisis, yet, the agroecology that many practice and the food sovereignty that many strive for provide a pathway to cool the planet and feed its people. We won't be able to stop the climate crisis until this is recognised and accepted by those in power. Obama is right when he says that we can still act and it won't be too late. But it has to involve challenging the corporate food system and putting agroecology and small scale farmers first again.

GRAIN (grain@grain.org) is an international non-profit organisation that works to support small farmers and social movements in their struggles for community-controlled and biodiversity-based food systems.
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References

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3 Food sovereignty: five steps to cool the planet and feed its people. GRAIN 2014
4 Earth matters - Tackling the climate crisis from the ground up GRAIN, October 2009