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This report analyses the likely impacts on food sovereignty of proposals that make up the net zero emissions package. These include so-called nature based solutions, natural carbon removals and carbon offsets. The report shows why nature based carbon offsetting poses a real threat to peoples’ livelihoods, territories and rights. It reveals how transformative solutions to the climate and food crises, such as agroecology for food sovereignty, risk being coopted and weakened by the concept of nature based solutions. The report investigates the rise of soil carbon sequestration as a source of carbon credits and how agribusinesses, fossil fuel corporations and tech companies stand to gain from them. Double Jeopardy is a first attempt at joining the dots between food sovereignty and the confusing and overlapping terminology and concepts of the net zero package. Because so much is at stake, it is crucial that the actors and motives behind the package are well understood and discussed.
CORPORATIONS CLING ON TO FOSSIL FUELS AS CLIMATE CRISIS DEEPENS

Fossil fuel extraction and agroindustrial food production are driving climate breakdown. The five meat-and-milk giants (JBS, Tyson, Cargill, Dairy Farmers of America and Fonterra) together produce more emissions per year than major oil players like Exxon, Shell or BP. Fossil fuel companies and agribusinesses have a responsibility to reduce emissions in order to halt runaway climate change. Yet, instead of cutting their emissions, these corporations plan to keep expanding, hiding their climate impact behind net zero emission pledges. But net zero is different from zero. Net zero is a smokescreen allowing corporations to continue business as usual, maintaining profits while driving climate breakdown, as well as rural poverty, displacement and inequality.

Not all farming has the same impact on the climate. Recent estimates suggest the food system as a whole contributes one third of global climate-change emissions — mostly from land use change and agricultural production methods. Industrial farming plays a huge role in these emissions. Estimates suggest the industrial food system accounts for 44-57% of emissions. Yet only 24% of the food produced from the industrial system actually reaches people. By contrast, small-scale farmers feed 70% of the world’s population while using only 25% of resources, so have far less impact on soils, forests and climate change.

Preparing seedlings for an agroecological urban farm in Malaysia
© Amelia Collins/Friends of the Earth International

Aerial view of deforestation in Brazil
© iStock

2 Friends of the Earth International’s report Fossil futures built on a house of cards (2022) exposes how the corporate sectors chiefly responsible for runaway climate change are seeking to expand the voluntary carbon market. https://www.foei.org/publication/fossil-futures-built-on-a-house-of-cards/
10 Ibid.
12 Engineered carbon removals — such as capturing carbon and storing it underground or solar engineering — are extremely risky. Such technofixes may alter the climate in unforeseeable and uncontrollable ways; they currently exist mostly as ideas rather than real projects at scale. Where pilot projects do exist, they are proving highly energy-intensive, causing many negative impacts, and the carbon credits they generate are expensive. Technical carbon removals are not the subject of this report but have been written about extensively elsewhere.
Net zero pledges allow companies to continue polluting on the promise of balancing out their emissions by reducing or avoiding emissions elsewhere or, increasingly, by removing carbon from the atmosphere.

This balancing out, known as carbon offsetting, does not stop emissions in the first place. It risks increasing emissions further by allowing polluting activities to expand. Carbon offsets can take place through natural or technological processes. Many of the natural methods are known as nature based solutions or sometimes natural carbon removals. Carbon removals are highly problematic, and cannot compensate for continued emissions.¹¹

Significant problems with carbon offsetting are well documented and recognised — even by the offsetting industry itself. This is why the emphasis has recently turned to carbon removals, especially nature based solutions, since the most plausible, cheap and available methods for carbon removal are in nature.¹²

Not all carbon removal has to be for offsetting: it is necessary to regenerate forest cover, improve soils and restore the Earth’s capacity to sequester carbon, and build resilience to climate change. Yet, as this report shows, the growing emphasis on nature based solutions and natural carbon removals is going hand in hand with rising demand for offsets. Even when they are not used as an offset, however, the current push for land-based carbon removals poses dangers. These include land grabbing, dispossession, data grabbing, undermining the autonomy of small-scale producers and reinforcing the industrial food system.

Carbon offsetting from land and nature is an integral part of the net zero package. It is already triggering land grabbing: corporations will directly and indirectly, through the purchase of carbon credits, control how vast amounts of agricultural land, forests and other ecosystems are used.

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**EXAMPLE OF ‘NATURAL AVOIDED EMISSIONS’ CARBON OFFSETS**

A company pays to avoid the destruction of a forest that was allegedly at risk of being cut down, which would have entailed emissions.

**EXAMPLES OF ‘NATURAL CARBON REMOVALS’ OFFSETS**

A company pays farmers to pursue methods that increase the amount of carbon stored in the soil.

A company pays to plant extra trees which will take up carbon from the atmosphere as they grow.
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MORE THAN 1500 CORPORATIONS
HAVE MADE
‘NET ZERO’
EMISSIONS COMMITMENTS
IN RECENT YEARS

MANY OF THE SAME CORPORATIONS ALSO COMMIT TO USING
‘NATURE BASED SOLUTIONS’ TO ACHIEVE THIS GOAL

None of these corporations has pledged to stop burning fossil fuels, stop expanding industrial agriculture or change their core business model. The fossil fuel industry short term plans include 195 gigantic oil and gas projects that would each result in at least a billion tonnes of CO₂ emissions over their lifetimes. The emissions of JBS Holdings, the world’s largest meat processor, grew by at least 55% between 2016 and 2021.

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There are around 790 carbon credit projects involving land in Scotland, covering an area of 63,453 hectares, nearly 1% of its land area.\(^{16}\)

On the other side of the world, in Malaysia, the State Attorney General of Sabah declared invalid a nature conservation agreement covering all of Sabah state’s remaining forests — 4.9 million acres, for 100 years. The agreement included a carbon offset deal that could have seen a private Singapore-based company pocketing up to US$80 billion from carbon sales over the 50 years of the agreement.\(^{17,18}\)

Nestlé has a stated ambition to offset the equivalent of 13 million tonnes of CO\(_2\) emissions each year through nature based solutions. It has been estimated that this pledge alone could require planting trees on at least 4.4 million hectares of land every year.\(^{19}\)

Shell’s pathway to 1.5 degrees requires planting an area about the size of Brazil with trees.\(^{20}\)

Italian oil company Eni has already become a direct participant in carbon offset projects involving forest conservation (so-called REDD+ projects) while French company TotalEnergies is securing a supply of carbon credits by becoming a major shareholder in a logging company in Gabon. Yara, the world’s largest producer of synthetic fertiliser, set up the Agoro Carbon Alliance in early 2021 to generate carbon credits from farming.\(^{21}\)

If even a fraction of the planned nature based solutions schemes are implemented they will trigger a new wave of dispossession and land grabbing, especially in the global south.
NATURAL CARBON REMOVAL IS NOT A Viable SOLUTION

Tree planting projects and, to a lesser extent, projects that restore degraded lands, soils and wetlands, have been creating carbon credits via the Clean Development Mechanism (CDM) for nearly two decades.\(^{22}\) Carbon credit sales from these projects never took off, however. They are now being marketed as natural carbon removals, lumped together with carbon credits from avoided deforestation (REDD) projects as nature based solutions. The rebranding allows proponents to repackage old approaches as new solutions.

Proponents of nature based solutions and natural carbon removals use the fact that chemically all carbon is equal to claim that the climate impact of \(\text{CO}_2\) emissions can be considered equal regardless of their source.

For carbon offsetting to take place, this claim of equivalence is essential:\(^{23}\) emit 1 tonne of \(\text{CO}_2\) in one place and assume that the climate damage can be undone by paying someone elsewhere to avoid 1 tonne of \(\text{CO}_2\) emissions, or remove 1 tonne of \(\text{CO}_2\) already in the atmosphere.

Yet this claim of equivalence ignores two fundamental issues of scale: time and capacity. Carbon storage in plants and soils (biomass) is volatile and temporary, while storage in underground fossil deposits is vast and long-term. Compared with a human lifetime, burning fossil carbon is a cycle so slow — spanning millions of years — that we do not perceive it as a cycle. By contrast, carbon stored in trees, plants and soils is part of a much faster cycle, in which carbon may be stored for as little as a few hours or days and at most some thousand years, if it is captured by a tree that will grow to be very, very old.

The claim of equivalence also ignores the human and social impacts of fossil fuel extraction or industrial plantations. Ask any community living next to a coal mine, gas flaring towers in oil and gas fields, an oil refinery or an industrial tree plantation and they will tell you about the violence, pollution, health and impacts on livelihoods that this carbon-is-carbon assumption renders invisible.

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22 The CDM was defined in the Kyoto Protocol of the United Nations Framework Convention on Climate Change. It allows for a developed country to run an emission-reduction project in developing countries, and earn offsetting credits that count towards meeting Kyoto emissions reduction targets.

SOIL CARBON FARMING:
DATA HARVEST DISGUISED AS CLIMATE ACTION

Over half of the organic matter in the world’s agricultural soils has already been lost, with over 2 billion hectares of land badly affected. This has been driven by decades of industrial farming. As soil depletion reaches levels that jeopardise yields, and profits, corporations are looking to the new public subsidies available through soil carbon farming programmes. Meanwhile, the carbon offset industry is looking for new avenues to generate credits — and soil carbon is an attractive option.

There is a great need to restore soils that have been heavily depleted by industrial practices. Yet there are several reasons to be cautious about pursuing soil restoration as a natural carbon removal offset:

- Soil restoration as a carbon offset activity justifies the release of fossil carbon, which will interfere with the climate for thousands of years, whereas carbon storage in soils cannot be guaranteed for such periods of time.

- Carbon offsetting needs definitive numbers: a certain number of tonnes of CO\textsubscript{2} removed from the atmosphere. But the carbon content of soils fluctuates, even over the course of a single day.

- Measuring soil carbon is very difficult. This has potential for numbers to be manipulated in such a way that maximises the generation of carbon credits.

Despite the problematic nature of soil carbon accounting, the soil carbon farming sector is booming. Several countries (United States, Australia and India) and the EU are developing legislation for carbon markets to include soil carbon credits. Dozens of corporate soil carbon offset initiatives are already in place. These are often joint initiatives between global agribusinesses and IT corporations.

In 2021 Yara Growth Ventures and Chevron Technology Ventures put US$4 million into the Boomitra soil carbon farming programme, which is now marketed as an Agora Carbon Alliance initiative. Bayer and Cargill are operating similar programmes, under the names of CarbonProgramme, CarbonInitiative, Carbon+ (Bayer) and RegenConnect (Cargill). A recent publication identified nine soil carbon credit programmes, several of them tied to digital data collection platforms and remote verification systems (drones and satellites) controlled by Yara, Bayer, Microsoft or IBM.\textsuperscript{24}

Many corporate soil carbon farming programmes require farmers to sign up to mobile apps. Through these apps and remote verification systems the companies collect data harvested from the participating farms, which they can use to identify the best agricultural land and target farmers with customised seed and fertiliser packages.\textsuperscript{25} Companies such as Yara and Bayer see these digital platforms as a one-stop shop for carbon credits, seeds, pesticides and fertilisers that allow them to dictate how farmers use the land.\textsuperscript{26}

Even if these initiatives fail to generate many sellable carbon credits, they will have provided agribusinesses and IT corporations with massive amounts of data about soil fertility and farming practices on vast areas of land farmed by small-scale farmers. They will have tied peasant and family farmers into contracts with prescribed farming practices and soil carbon monitoring for anywhere from a few years to a few decades, often even after carbon offset payments have stopped.


\textsuperscript{25} Ibid.

\textsuperscript{26} Friends of the Earth United States (2020) Following $10 billion Roundup settlement, Bayer uses climate program as front to lock in control of farmer data and sell more Roundup. https://foe.org/blog/bayer-climate-program-to-control-data/
A STIFLING EMBRACE: NATURE BASED SOLUTIONS COURTING AGROECOLOGY

Agroecology is a way of producing food, a way of life, a science and a movement to transform food systems towards ecological, social, gender, economic, racial and intergenerational justice. This has been articulated in the 2015 social movements’ Nyéléni agroecology declaration and since then by a wide range of academic, UN and expert analysis.\(^{27,28,29}\)

The transformative potential of agroecology is achieved through the integrated application of its principles. These encompass ecological, social, economic, cultural and political values rather than a set of technologies or technical practices divorced from eco-systemic, socio-economic or political realities. Agroecology’s potential also lies in the vision of transformation — the challenging of power structures and historical oppressions, its view of food production, nature and land as a Peoples’ right, set in community and eco-system relationships rather than as commodities for profit or a financial asset.

However, since 2020 there has been a growing tendency to present agroecology as compatible with, or an extension of, the nature based solutions concept. The 2021 UN Food Systems Summit, for example, considered agroecology as one possible category of nature based solutions in the food and farming sector. The UN FAO markets agriculture nature based solutions to financial investors who are keen on taking control of “natural capital” and physical assets such as land and forests to shore up their green credentials.\(^{30}\)

The principles of agroecology and the history and drivers behind nature based solutions are incompatible.

The nature based solutions concept hides the realities of inequality, corporate concentration of power and the prolongation of the environmentally destructive status quo. Attempts to lump agroecology in with nature based solutions are part of the overarching strategy of agribusiness to co-opt and reduce transformative practices to greenwash their destructive practices.

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AGROECOLOGY VS ‘NATURE BASED SOLUTIONS’

ROLE OF CORPORATIONS

Opposes the corporate-controlled industrial food and farming system
Operates within and strengthens the corporate-controlled industrial food and farming system

CLIMATE

Cools the planet by taking care of the soil and ecosystems
Heats the planet as it prolongs fossil fuels burning and industrial food production

INPUTS

Low input: drastically reduces fossil fuels, uses no synthetic fertilisers or pesticides
High input: allows continuation of fossil fuels, synthetic fertilisers and pesticides

WORK

Uses agricultural practices that aim to keep people in rural areas and provide decent work
Maintains a precarious labour model and forces farmers into carbon farming contracts

RIGHTS

Puts control of land in the hands of small-scale food producers
Puts control of land in the hands of a few food and I.T. corporations, which cultivate for profit regardless of environmental impact

VISION OF NATURE

Holistic, emancipatory vision of nature as interlinked with culture food systems and livelihoods
Narrow vision of nature as ‘capital’, providing ecosystem services and an opportunity for revenue
CONCLUSIONS: NATURE BASED SOLUTIONS AND SOIL CARBON OFFSETTING ARE A DANGER TO FOOD SOVEREIGNTY AND AGROECOLOGY

Nature based solutions and natural carbon removal initiatives have been engineered to benefit industrial food and farming corporations. These initiatives will undermine agroecology and food sovereignty because:

- They are designed to go hand in hand with carbon offset schemes; as such, they will accelerate climate breakdown by justifying continued emissions.

- To meet the massive corporate demand for carbon credits, nature based solutions are likely to provide incentives for expansion of monoculture tree plantations or large-scale tree planting schemes. Such projects will provide easier and quicker carbon storage than agroecology. They will put pressure on agriculture to become more intensive, to free up land for nature based solutions. This will trigger forced evictions, especially in the global South.

- High costs for soil carbon measurement and monitoring, and soil carbon farming schemes risk discriminating against small-scale peasant, indigenous and family farmers. They will favour large-scale farmers and above all, agribusinesses with industrial-scale farm holdings, which will earn social license as so-called sustainable carbon farmers.

- Agroecology is a complex, integrated approach to living with the land. It is incompatible with changing land use to maximise one single parameter: carbon stored in soils and vegetation. If support and subsidies are tied to soil carbon farming, they risk undermining agroecology by driving farming to maximise carbon storage and away from food sovereignty.

- Soil carbon farming schemes will lock farmers in to obligations to agribusiness corporations. With soil carbon farming credit programmes, farmers risk becoming carbon contract farmers on their own land. They will be forced in to practices dictated by corporations and could be tied in to contracts for up to two decades.

- They will accelerate the financialization of nature, which renders invisible the social, cultural and spiritual aspects of nature, and threatens the complex and dynamic relationship with Indigenous Peoples and many local communities.

Programmes that help peasant and family farmers maintain and restore healthy soils as the basis for agroecology are necessary and should be publicly supported. Soil carbon farming programmes, now promoted as nature based solutions by corporations and governments, will not provide that support. In fact, such programmes stand to undermine peasant farming and food sovereignty because they are driven by a corporate desire to secure carbon credits for net zero emissions pledges.

Slashung greenhouse gas emissions from the industrial food system requires a rapid phase-out of nitrogen fertilisers and other chemical inputs, and deep cuts in methane emissions. It means a widespread shift to agroecological farming for food sovereignty. It implies support for territorial food systems that can bring these foods to nearby consumers. It requires actions that ensure small-scale food producers have access to lands, water and territories. It means a revitalisation of farmers’ seed systems, focussed on developing varieties adapted to local contexts and not dependent on chemical inputs. It involves policies to eliminate the surplus production and consumption of high-emissions agro-commodities from the industrial system, and the wasteful and unhealthy ultra-processed foods that big food corporations heavily promote. It requires ending corporate control over the food system — not the deepening of that control through nature based solutions, carbon offsets and natural carbon removals.
The ‘nature based solutions’ framework that sees land as a space for carbon removals and offsets will not stop climate change and is a threat to the transformation of food systems towards agroecology in the framework of food sovereignty. Instead of pursuing these false solutions we demand:

1. A move away from a neoliberal, corporate-controlled industrial food system, towards a system based on the principles of food sovereignty, food as a human right, and peoples’ control over seeds, land, water and other commons.

2. Support for agroecology, artisanal fishing, and all the small-scale food producers who still feed 70-80% of the people on our planet. This must prioritize and boost public investment in peasant, indigenous and family farming innovation and adaptation, according to their particular needs, cultures and traditions.

3. That the inherent rights and sovereignty of Indigenous Peoples, and human and collective rights of peasants and local communities are granted and implemented, so that the traditional knowledge and practices of Community Forest Management (CFM) can be fully implemented to help halt climate change and biodiversity loss, and forests should be kept out of carbon markets, offsets and other such schemes.

4. That governments must urgently begin to cooperate on a coordinated phase-out of fossil fuel production and consumption, with equity at the core.

5. Acceleration of the transformation towards a climate-just world by transforming our energy system, based on principles such as energy sufficiency for all, energy sovereignty, energy democracy, energy as a common good, 100% renewable energy for all, community-owned, low-impact renewable energy.

6. A new economics for people and planet, with the care system and the reproduction of life at its core, and which recognises our interdependence as human beings, and re-organises care and domestic work to be shared between men, women and the state. This transformation is essential to building our resilience against health and environmental crises.

7. Reclaiming of the public sphere and political arena from the perspective of economic, social, gender and environmental justice, and ensure peoples’ rights. Public services can be used to guarantee peoples’ access to water, health, energy, education, communication, transport and food. To pay for these public services we need fair, transparent and redistributive tax systems.

8. Binding rules on big business, allowing us to rein back the power of transnational corporations and provide victims with access to justice, compensation and restoring of their livelihoods wherever corporate crimes occur.

9. A climate and social just world that is free from patriarchy, white supremacy, and all systems of oppression, domination and inequality.
EXECUTIVE SUMMARY

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COVER PHOTO
Aerial View of Eucalyptus Forest, Sao Paulo, Brazil
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FRIENDS OF THE EARTH INTERNATIONAL is the world’s largest grassroots environmental federation with 73 national member groups and millions of members and supporters around the world.

Our vision is of a peaceful and sustainable world based on societies living in harmony with nature. We envision a society of interdependent people living in dignity, wholeness and fulfillment in which equity and human and peoples’ rights are realized. This will be a society built upon peoples’ sovereignty and participation. It will be founded on social, economic, gender and environmental justice and be free from all forms of domination and exploitation, such as neoliberalism, corporate globalisation, neo-colonialism and militarism.

We believe that our children’s future will be better because of what we do.

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