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Briefings on the Post-2020 Global Biodiversity Framework

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Nature-based solutions or nature-based seductions?

Unpacking the dangerous myth that nature-based solutions can sufficiently mitigate climate change

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"Nature-based solutions" (NbS) is a widely used but vaguely defined term. It means a range of things to different people, including many positive actions and approaches, such as agroecology and ecosystem restoration. But a group of actors are using the term to drive a particular agenda related to biodiversity and climate change, the understanding of which is essential to understanding the current politics around NbS. This brief sets out to describe that agenda and how NbS is used within it.

Origins, distortions and myths

In 2016, the International Union for the Conservation of Nature (IUCN) introduced the term "nature-based solutions" into global conservation discourse. IUCN defines "nature-based solutions" as "actions to protect, sustainably manage and restore natural or modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits."[1] In a recent elaboration, they reference seven societal challenges for NbS to address: climate change mitigation and adaptation, disaster risk reduction, economic and social development, human health, food security, water security, and reversing ecosystem degradation and biodiversity loss.

Although its origins lie in broader political conversations around nature conservation, much recent attention on NbS has focused on the challenge of climate change and possible nature-based contributions to mitigation, adaptation and disaster risk reduction. Among these areas, climate change mitigation has attracted the most attention. Fuelling that attention are the findings from a 2017 scientific article on "Natural Climate Solutions" which suggested that such solutions – by avoiding emissions from natural and agricultural ecosystems or by increasing carbon sequestration within them – could provide over one-third of the global mitigation effort needed by 2030.[2] Despite the limited application of that particular finding,[3] the 37% figure is widely quoted as the potential nature-based contribution to climate change mitigation.

An additional and likely more significant fuel for attention to NbS is the myth that the carbon-sequestering possibilities of nature can compensate for (or in technical carbon market terms – offset) the continued burning of fossil fuels.

[1] https://www.iucn.org/theme/ecosystem-management/our-work/iucn-global-standard-nature-based-solutions

[2] https://www.pnas.org/content/114/44/11645

[3] The article examines 20 specific practices that involve protecting, restoring and managing natural and agricultural ecosystems, with the largest contributions to mitigation potential coming from reforestation and avoided forest conversion. However, the 37% figure cited in the article only applies to the potential for the next decade. After that, the potential contribution to necessary mitigation diminishes rapidly for a number of reasons, including saturation, permanence, the finite area of ecosystems where carbon might be stored, and the scale of the almost total decarbonization of economies that is ultimately required to stay below 2°C or 1.5°C of warming.

This is a particularly dangerous myth if we are to reach the Paris Agreement goal of holding the increase in global average temperature to well below 2°C and pursuing efforts to limit the temperature increase to 1.5°C of warming above pre-industrial levels. The science is very, very clear – to accomplish that goal will require decarbonizing our societies ***and*** enhancing the carbon removal and sequestration possibilities within our planet's ecosystems over the next few decades. Decarbonization requires us to ***stop*** using fossil (carbon) fuels to power our economies. There is no time left to allow some to continue to burn fossil fuels while nature somehow "compensates" for that burning.

Solutions or seductions?

There are currently very few ways to remove carbon from the atmosphere. Those possibilities are found in nature – in the sequestration potential of trees, soils, wetlands and grasslands.[4]

The carbon removal contributions of nature, if they are ***additional*** to efforts to decarbonize, are critical to achieving the Paris Agreement goal. However, the idea that removals might be able to compensate for or offset continuing emissions elsewhere is merely seduction. Offsets do not reduce the overall concentration of carbon dioxide in the atmosphere; at best, they result in no net emissions.

We must learn to separate genuine nature-based ***solutions*** from nature-based ***seductions***, such as carbon offsets. There is no free lunch here. Tackling climate change requires ***both*** ending the burning of fossil fuels ***and*** doing all we can to take carbon that has accumulated from the previous century of fossil emissions out of the atmosphere.

Burning fossil fuels adds new carbon (let's call it fossil carbon) to the atmosphere – carbon that has been buried far underground and therefore has not been part of the natural land (terrestrial) carbon cycle for millions of years. Yes, the land carbon cycle will take up some of that fossil carbon. But the land (soils, forests, grasslands, that is, "nature") will not absorb all the carbon that we are releasing as we burn fossil fuels, nor will it do so on the long time scales that matter to the climate.

The steady ***accumulation*** of carbon dioxide in the atmosphere as a result of the burning of fossil fuels is the core of the climate problem and critical when considering "solutions" to that problem. Carbon dioxide has a residence time in the atmosphere of hundreds to thousands of years and continues to accumulate as we continue to burn fossil fuels. Real solutions to climate change must stop fossil carbon emissions completely and sequester already-emitted carbon ***for hundreds to thousands of years***.

The carbon sequestered in the land carbon cycle is not permanently sequestered, and certainly not on time scales of hundreds to thousands of years. It is subject to reversals, including climate-induced reversals, as is expected to happen as ecosystems warm; forests degrade due to drought, heat and fire; soils and grasslands lose carbon as temperatures warm; wetlands lose carbon as they dry. Natural and agricultural ecosystems can play a very important role in sequestering carbon, indeed, but they are not long-term solutions to climate change.

The seduction of nature-based offsets

Corporates, in particular fossil fuel companies and agribusiness interests, are increasing their investments in NbS. The main fossil fuel players explicitly assert that these "solutions" will offset their continued sale of fossil fuels. Shell says it "intends to make significant investments in projects that use nature to reduce CO_2 emissions," with the clear intent that "these projects can lead to the marketing, trading and sale of carbon [offset] credits." Italian fossil fuel giant Eni is planning to increase oil and gas production by 3.5% per year until 2025, and then proposes to reduce its carbon footprint by 80% by 2050, by using 30 million tons a year by 2050 of carbon offsets from primary and secondary forest conservation projects.[5]

[4] Some envision an increasing role in the future for technological options such as enhanced weathering, direct air capture, or bioenergy carbon capture and storage (BECCS). But those options are not viable on any useful scale at this point. The use of geoengineering approaches to carbon dioxide removal, indeed, is a critical element of the conversation on climate change mitigation, but we focus the discussion here on NbS.

[5] https://www.shell.com; https://www.eni.com/en-IT/media/press-release/2020/02/long-term-strategic-plan-to-2050-and-action-plan-2020-2023.html

Mainstream US-based conservation organizations such as Conservation International, Environmental Defense Fund and The Nature Conservancy have been willing partners in greenwashing the actions of the biggest fossil fuel companies. These three groups have in common a pro-carbon-offsets position and carbon marketing elements within their organizations. Along with the fossil majors, they are keen to promote carbon-offset markets.

Greenwashing and carbon colonialism

Carbon markets and offset myths are useful for those who want to continue with business as usual. So are nature-based offsetting projects that can both hide emissions and greenwash the image of those doing the emitting, such as high-profile tree-planting campaigns. As the need for greenwashing projects increases, NbS in the global South are prioritized for their photogenic and charismatic "nature".

Carbon colonialism is another term used to describe this practice of seeking "solutions" to your own emissions in someone else's lands and forests. The term "nature-based solutions" should provoke a series of questions: ***Solutions for what? Whose problems are being solved? Who is profiting from the "solution"? Who put the carbon into the atmosphere in the first place and who should be responsible for removing it?***

What must be done?

NbS are a core element of strategies by the fossil fuel industry to hide its plans to continue extracting and selling fossil fuels, despite the clear scientific consensus that decarbonization is the only way to stop climate change.[6]

But the emperor has no clothes. Offsets do not reduce emissions and are not a climate solution. The fossil fuel industry is greenwashing its image at the same time that its practices continue to increase the amount of carbon dioxide in the atmosphere.

While the industry searches the world over for forests, grasslands and soils to colonize for their carbon sequestration potential, and it greenwashes its image with lovely photos of these nature-based "solutions," its operations lead directly to the climate impacts which threaten the very biodiversity that the "solutions" are built upon. These projects already involve land grabbing, assaults on human rights, and livelihood impacts on indigenous peoples and local communities, which will only increase as industries seek to acquire natural ecosystems to soak up their carbon pollution.

To protect planet and people, we must recognize and reject the greenwashing, carbon markets, and the carbon-offset myth behind the corporate NbS agenda. We support protecting biodiversity for many reasons, including because ecosystems are important for carbon sequestration. Real actions to support biodiversity will make a critical contribution to achieving the Paris Agreement goal, including by protecting carbon-rich ecosystems and the communities whose livelihoods depend on those ecosystems. If there is the possibility to decouple NbS from offsets, and focus instead on protecting ecosystems, rights and livelihoods, then those nature-based options can be supported. When NbS are used as offsets, they are merely nature-based seductions.

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[6] Governments are also keen to adopt NbS as part of their mitigation efforts. The principles they must follow are the same – NbS should be used ***alongside*** and in addition to decarbonization efforts, not as means to hide inaction. Governments may attempt to hide continued emissions behind pledges towards "net zero", where removals and emissions are added together to make a nicer sounding "net" emission target. If these targets are not based on the principle of maximizing decarbonization first, the end result is similar to our offset story, governments end up sounding far greener than they actually are, and we will continue on a path that greatly exceeds 2°C of warming.