CAN MARKET-BASED APPROACHES ADDRESS CRITICAL BIODIVERSITY LOSS?

Friends of the Earth International

Green Finance Observatory

There is growing public awareness about the sixth mass extinction of species; and calls for action to address biodiversity loss are multiplying. However, in the coming years there will also be a major shift in biodiversity policies—from conservation to 'restoration,' and the creation of new international financial markets that fuel environmental destruction.

These policies are rooted in the belief that we need to put a price on nature in order to save it. Proponents **argue for the monetary valuation of biodiversity and a financial market approach to conservation,** based on the belief that markets allocate resources more efficiently. Rather than trying to curb the destruction of biodiversity, it is deemed economically preferable to destroy and then restore biodiversity, as this generates more economic growth and minimises the private sector's costs of compliance with environmental regulation.

New international biodiversity offset markets are being promoted, wherein real estate developers, infrastructure and mining companies, among others, can 'offset' the biodiversity they destroy by 'recreating' natural habitats and ecosystem functions somewhere else. In these markets, companies can freely trade permits with each other to destroy biodiversity.

These policies can be traced back to the UN Rio Summit of 1992, where the Convention on Biological Diversity was signed. This promoted the use of price-based mechanisms to address environmental issues and emphasised that environmental protection was secondary to international trade and investments.[1]

A number of major developments over the next two years are expected to create the perfect political context to develop international financial markets for biodiversity:

› The 2019 IPBES global assessment report[3] on biodiversity confirmed that market-based mechanisms on biodiversity and other ecosystem services are considered part of the solution to curb biodiversity loss;

› The current European sustainable finance agenda will likely open the door to new biodiversity offset markets, by allowing them to be included in new 'sustainable' financial instruments involving subsidies;

› 2020 was set to be a big year for modified biodiversity policies, with the 2020 IUCN World Conservation Congress and the 15th Conference of the Parties to the Convention on Biological Diversity, where some expect to reach a 'Paris Agreement' for biodiversity.

› The 2018 World Bank environmental and social framework[2] initiated a demand for these markets, by making it mandatory to 'offset' biodiversity destruction in order to receive financial support;

Biodiversity offset schemes already exist in several countries, with a poor environmental and social track record. Many studies have shown that these schemes have negative or disastrous impacts on wildlife, usually pushing species to the brink of extinction rather than protecting them[4]. Studies found that up to two thirds of ecosystem restoration offset projects were unsuccessful[5]. Another study analysing 558 offset projects between 1990-2011 found that, despite offset attempts, there was a 99% net loss in habitats[6].

In many cases, biodiversity offsets have also been shown to lead to land grabbing, displacement of communities and human rights abuses[7].

Such findings are not surprising, since there is evidence that *"recreating or restoring ecosystems to some specified former state is often unlikely to be feasible, especially within reasonable time frames"* [8] and ***"to date, re-creation of ecosystems with all component species and functions has proved prohibitively expensive or impossible".***[9] This does not mean that restoring degraded sites is a bad idea in itself; ***but that doing so should not give the right to destroy existing biodiversity elsewhere through the use of offset credits.***

The irremediable conceptual flaws behind biodiversity offsetting are of equal concern:

> **It is impossible to reflect the value of nature on a monetary scale**.[10] Prices ignore the cultural and spiritual value of nature, which is nonetheless essential and contributes to the good stewardship of nature by local communities.

> Academic research has long shown that financial markets are inefficient,[11] and unable to price scarcity. Just as important, **it is impossible to create financial markets for public goods, such as most ecosystem services.**[12] For example, it is impossible to create a market for the protection provided by the ozone layer. One person's benefiting from UV protection from the ozone layer does not prevent anyone else from benefiting from it; and it is impossible to prevent people from benefiting from it, whether they have paid for said protection or not.

> **We are unable to accurately measure what is lost and gained.** The best scientists are unable to describe all the benefits of a given species or ecosystem, or the impacts of human activities on them.[13] This is because ecosystems—wherein everything is connected to everything else—contain highly complex, non-linear and evolving behaviours, some of which are beyond our perception.

> **We are unable to comprehensively recreate ecosystem functions that are destroyed,**[14] and we are therefore unable to offset this loss.

> **All monetary valuation methodologies have substantial and well-known biases and problems,** rendering the values generated meaningless.[15]

> **Money as a common metric fosters a dangerous illusion of substitutability** among critical ecosystem functions that are essential to our survival—and for which substitution is difficult or impossible. As the UN recognises,[16] comparing the monetary value of different services may lead to the erroneous conclusion that sustainability can be achieved solely by maintaining a total monetary value. This can lead to bad policy decisions and the destruction of irreplaceable functions.

> **Most frameworks value only some ecosystem services while ignoring the rest;**[17] **they wilfully ignore services that do not benefit humans today, as well as the crucial interdependencies** between ecosystem services, for simplicity purposes. Yet, ecosystems function as coherent holistic systems in which the different elements depend upon each other. As a result, what is being valued is not biodiversity; it is not even a proxy.[18]

> Most importantly, **the whole premise of offset markets rests on two flawed core concepts: price signals and additionality.**

Firstly, as natural resources decline, the price of biodiversity destruction permits is expected to increase gradually, providing an incentive to curb biodiversity loss. This is called a price signal. For it to exist, prices need to follow a gradual and observable uptrend. Yet, it has been shown[19] that prices are actually extremely volatile due to financial speculation (the main activity of financial markets) and they will become increasingly volatile

as natural resources run out. This means that, in practice, it is impossible to observe any trend. In other words, **there is no price signal.**

Secondly, offsets rely on the idea that we are able to measure additionality: the 'positive' impact of offset projects compared to what would have happened without the projects. However, it has been demonstrated[20] that, in most cases, additionality cannot accurately be measured, due to the extreme scientific uncertainty involved, as well as our incomplete scientific knowledge.

The lack of a price signal and the inability to calculate additionality mean that financial markets on biodiversity and ecosystem services will never be able to achieve their environmental and social objectives. Both should therefore be removed from the post-2020 Global Diversity Framework.

To be clear, restoring ecosystems and biodiversity is a **good** thing. However, it should not be financed through the use of offset credits. Nor should it be combined with biodiversity destruction reduction targets as part of 'No Net Loss' objectives, since restoring parts of ecosystems is not comparable, and does not compensate for the destruction of biodiversity elsewhere.

What are the alternatives? Contrary to common misconception, traditional binding environmental regulations have not failed. In fact, they have proven to be highly effective—from addressing the hole in the ozone layer, to the introduction of mandatory seat belts and catalytic converters, to the banning of asbestos. The issue is therefore not a lack of effective regulations, but rather a lack of political will to establish and implement more regulations.

Appropriate environmental regulations could include having binding conservation laws to curb economic activities that exert an unsustainable pressure on natural resources—such as some forms of urban development, mining, fishing and agricultural practices—while fostering sustainable alternatives, such as agroecology and community forest management.

The reluctance to set up appropriate environmental regulations is largely related to legitimate concerns about the economy and jobs. Yet, changing policy tools from markets to binding regulations, while maintaining the same objectives, would not be more coercive or costly for business. On the contrary, replacing the volatility of fluctuating prices with clear rules would increase the private sector's ability to plan ahead, thereby **reducing economic disruption and potential adverse impacts on jobs—as compared to a more abrupt transition later.** It would also promote innovation and create many jobs in new, sustainable economic activities.

Traditional environmental regulations would also better accommodate scientific uncertainty and our incomplete scientific knowledge. They would not rely on flawed assumptions and weak valuation methodologies, and they would provide much more robust and stable incentives.

They **would also crucially reduce future competition for land use and related geopolitical risks;**[21] given that scarcity of land available for offsets is already anticipated.

Finally, appropriate environmental regulations would also make all finance sustainable vis-à-vis biodiversity loss. Expected future profits from all economic activities and sectors would automatically readjust, and capital flows would accordingly shift towards sustainable activities.

Addressing critical biodiversity loss is one of the defining issues of our generation. We need the political courage and wisdom to discard failed policy tools, such as offset markets, in favour of more robust alternatives. While we must protect and restore biodiversity and ecosystems, such positive actions should not be considered as compensation for the destruction of biodiversity elsewhere.

Therefore, the post-2020 Global Biodiversity Framework should not only be more ambitious, as has already been widely agreed, it should also exclude doomed policy tools such as offset markets for biodiversity and other ecosystem functions.

NOTES

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11. It is commonly accepted today that markets are not efficient in the strong or semi strong forma and may only be efficient in the weak form. See among many others Grossman S, Stiglitz J, On the Impossibility of Informally Efficient Markets, The American Economic Review 1980, https://www.jstor.org/stable/1805228?seq=1#page_scan_tab_contents

12. *'Markets are only possible when resources are excludable, markets are only efficient when resources are rival. For many services such as climate stability, the role of biodiversity in supporting all services, gas regulation, protection from UV radiation (..), non-excludability is a physical characteristic and not a policy variable. Open access use is unavoidable.' "One function of price is to ration the use of resources, but if use of a non-rival resource does not diminish the quantity available, if use provides utility and the goal is to maximize utility, then using prices to ration consumption is inefficient. In other words, markets lead to a suboptimal supply of nonexcludable resources and suboptimal demand for nonrival resources.'*
Farley Joshua, The Role of Prices in Conserving Critical Natural Capital, Conservation Biology 22:6, 1399-1408, 2008. Online. Available at: https://www.ncbi.nlm.nih.gov/pubmed/19076873

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'The precise contribution of a functional element in the ecosystem is not known—indeed is probably unknowable—until it ceases to function"—and even then, with a sample size of one unique ecosystem, the resulting knowledge is merely anecdotal.'
Farley, Costanza, ibid *'There are and will remain enormous uncertainties about how ecosystem services are provided, the magnitude of their benefits, and how human activities affect their provision.'*

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'Unlike a building that can be retrofitted for sustainability, once habitat is destroyed it might be impossible to reconstruct. Revegetation and restoration can increase tree cover and create habitat for some species. However, to date recreation of ecosystems with all component species and functions has proved prohibitively expensive or impossible (Wilkins et al. 2003).
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'Major restorations should not be considered an 'offset' to reductions in ecosystem assets due to harvesting of timber and other resources in other ecosystem assets, since the impacts on the flows of ecosystem services from different ecosystem assets are not likely to be directly comparable.'

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European Commission, Implementing an EU system of accounting for ecosystems and their services, Joint Research Centre, 2017. Online. Available at: http://publications.jrc.ec.europa.eu/repository/bitstream/-JRC107150/jrc107150_jrc107150_jrc_report_ecosystem_services_accounts_final_pubsy.pdf
'When modelling ecosystem services, not all the drivers of change as well as their interactions can be included in the models.'

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20. Hache, supra

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