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Carbon and biodiversity offsetting: A way towards sustainable development?

By Jonas Hein & Jean Carlo Rodriguez,
*German Development Institute /
Deutsches Institut für Entwicklungspolitik (DIE)*

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Bonn, 21 March 2016. The 21st of March is the International Day of Forests. For this year's celebration we are raising awareness on how conservation practices have changed. Today people hear more and more about forest carbon and biodiversity offsets as ways towards sustainable development. Is this really the case? Let's take a closer look. Offsetting is a process in which actors compensate for the environmental destruction their activities have caused: In the case of carbon offsets actors invest for instance in forest conservation and afforestation for compensating the destruction of the atmosphere caused by greenhouse gas emissions. In the case of biodiversity offsets actors invest in the creation of an equivalent forest habitat for a specific species at another place. These practices show that forests habitats, for example, are increasingly perceived as standard commodities that can be exchanged and replaced elsewhere. However, what seems to be forgotten here is that forests habitats and other ecosystems are actually quite unique. Apparently similar habitats with the same species composition, climate and soil conditions have a completely different character – thus they are neither replicable nor replaceable.

The best known offsetting mechanisms are carbon markets and biodiversity offsets. When buying a flight ticket, for example, customers can choose to offset carbon emissions of the travel by voluntarily investing in a reforestation or conservation project. The idea is that forests capture the emissions caused by the combustion of fossil fuels during our flight. Biodiversity offsets are mechanisms that companies can use to compensate for 'unavoidable' biodiversity impacts of their practices at an 'offset site'. For expanding the Airbus plant in Hamburg, Germany, the Senate of Hamburg permitted, for example, the destruction of a unique freshwater tidal swamp and assigned a new area, the Elbe river island of Hahnöfersand, for recreating the destroyed swamp.

So what are the problems with offsetting? Looking at forest carbon offsets, there are at least five issues. First, comparing emissions from fossil fuels with emissions from deforestation is like comparing apples and oranges. Fossil fuels (e.g. oil, gas, coal) consist of carbon that fossil organisms have accumulated over vast periods of time. Kept in the ground the carbon is stored virtually forever. Trees accumulate carbon and store greenhouse gas only for the span of their life. Second, while forest conservation might indeed reduce emissions from

deforestation, emissions from the combustion of fossil fuels continue at unsustainable rates which cannot be absorbed permanently by forests. Third, it is highly difficult to assess the amount of carbon emissions that a forest carbon offset effectively stores. Fourth, forest fires, land conflicts and fraud are threats to real and permanent emission reductions. Fifth, the establishment of forest carbon offsets requires land. This land might have been used by communities for food production or other purposes before. Offsets might restrict pre-existing land use; thus it could have negative socioeconomic consequences for communities.

Moving on to concerns with biodiversity offsets, experts primarily criticize that the ability to recreate an adequate offset site is limited by our knowledge about biodiversity. Yet, even the most sophisticated biodiversity metrics and indicators are only a partial reading of biodiversity, as there are complex interlinkages and interactions between species and ecosystems that remain hidden to scientific understanding. Second, it is very difficult to recreate the exact conditions for the same biodiversity level to thrive elsewhere. In the case of Hamburg, the destroyed freshwater tidal swamp was home to thousands of northern shovelers. The birds did, however, not accept the offset site. Third, even if it is possible to recreate the same level of biodiversity in another site, this process would take at least several decades and would not contribute to the local provision of environmental services. Finally, and in relation to the previous point, local biodiversity and livelihoods are interlinked. Therefore, if biodiversity is destroyed in one place and recreated elsewhere, what happens to the people whose livelihoods and sustainable development depend on the biodiversity that is being lost?

Summing up, are carbon and biodiversity offsets really a way towards sustainable development? Both carbon and biodiversity offsets entail several severe flaws that compromise not only environmental and social, but also economic sustainability. Rather than effectively reducing deforestation, greenhouse gas emissions and biodiversity loss, offsets seem to blindfold us to the real sustainable development problems at hand, among others: Rethinking economic growth, changing wasteful consumption patterns, tackling wealth concentration and inequality.