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The trouble with travel and trees

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Summary

The aviation industry is a small – although fast-growing – contributor to greenhouse gas emissions, but per kilometre its impact outstrips that of any other form of transport. As today's technology looks unlikely to reduce that impact significantly over the next 25 years, aviation has become a key issue in the climate change debate. Many air travellers and people working in the travel industry see carbon offsetting as a viable green solution to the problem. But how accurate is that view?

It is becoming clear that offsetting schemes based on tree planting or forest conservation may trigger a cascade of other problems. Entire communities may be evicted from land allocated for tree planting, or denied access to forest resources designated as protected carbon stores. Forest-based offsetting schemes are also subject to considerable uncertainty: forests can be chopped down or burnt, for instance, which releases stored carbon back into the atmosphere. Some schemes also fail to prevent 'leakage', in which planting trees or conserving forests in one place just shifts deforestation to another, adding nothing to overall carbon stores.

For real progress to be made on carbon sequestration and reducing greenhouse gas emissions, we need to go beyond tree-planting and offsetting. Too often they are an excuse for 'business as usual'. The focus must first be on a sustained reduction in emissions. Secondly, it needs to be recognised that the people bearing the heaviest costs of climate change contribute little to the problem, and that new mechanisms for compensating them and helping them adapt to changing conditions are needed. Finally, where offsetting is appropriate, schemes must take full account of the needs and rights of local people who live with the consequences of our new climate consciousness.

KEY MESSAGES:

- Many air travellers and people working in tourism see carbon offsetting as a viable green solution to the aviation industry's small but growing contribution to greenhouse gas emissions.
- Offsetting based on carbon storage through tree planting or forest conservation fails when trees are felled or die from disease, and some schemes may force communities off their land or deny them access to traditional resources.
- A sustained reduction in greenhouse gas emissions is key to tackling climate change – but where offsetting is appropriate, schemes should ensure that forest-dependent communities are not harmed and also include compensation arrangements.

Here and now: the reality of climate change

Reports from the Intergovernmental Panel on Climate Change (IPCC) leave little doubt that human-induced climate change is a reality. It concludes, in its 2007 *Fourth Assessment Report*, that it is over 90 per cent likely that the rise in global atmospheric temperature since the mid-19th century has been caused by human activity.[1]

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Climate change – what to expect

The Intergovernmental Panel on Climate Change (IPCC) reports that for the next two decades, about 0.2°C per decade of warming is projected, triggering the following effects.[2]

- Receding snow cover and sea ice
- More frequent extremes, particularly heatwaves and heavy precipitation events
- More intense tropical cyclones (typhoons and hurricanes), with greater peak wind speeds and heavier precipitation
- Precipitation increases in high latitudes and decreases in most subtropical regions
- Sea level rise of as much as 59 centimetres by 2100.

To date, 191 countries have ratified the United Nations Framework Convention on Climate Change (UNFCCC). The agreement is clear: countries have 'common but differentiated responsibilities' to respond to the problem of climate change. The Kyoto Protocol clarified the understanding that wealthy industrialised nations should lead in reducing their emissions of greenhouse gases to 1990 levels. Reducing emissions is only part of the challenge; many are now focusing on how developing countries might cope with, or adapt to, the inevitable consequences of climate change.[3] This is an urgent need: even if emissions were to plummet tomorrow, global warming and other climatic changes would continue for several decades because of time lags in the Earth's natural cycles.

Is the polluter paying?

The Kyoto Protocol recognises that industrialised nations are largely responsible for causing climate change and must both take the lead in addressing it, and ease economic restrictions on developing countries to achieve a sustainable low-carbon future. Data from 1950 to 2000 from the Climate Analysis Indicators Tool of the World Resources Institute indicates, for instance, that African countries contributed 4.6 per cent of cumulative global carbon emissions during that period.[4] Today their share of emissions is even lower, amounting to just 3.5 per cent of the total.[5]

Despite mounting scientific evidence and numerous policy commitments at the international level, progress on the ground in reducing levels of greenhouse gas emissions has proved elusive. Some governments refused to sign the Kyoto Protocol or to firmly commit to cutting emissions. Meanwhile, countries that have made such commitments have seen emissions continue to rise because of ineffective enforcement policies.

Ironically, however, it is the poorer nations who will pay the highest price in facing climate change. Part of the reason is their geographic location in areas such as drought-prone sub-Saharan Africa or flood-prone Bangladesh. Such areas are particularly vulnerable to gradual and/or sudden changes in climate, which exacerbate existing environmental problems. Poor countries also have less capacity to cope with climate change because of their relatively limited financial resources, skills and technologies, and high levels of poverty. Compounding all this, many rely on climate-sensitive sectors such as agriculture and fishing. A recent study in a natural-resource based economy, Namibia, shows that GDP could fall by 1-6 per cent in the next 25 years, and that the hardest hit will be the poorest.[6]

A question of balance: aviation pros and cons

The IPCC estimates that aviation currently accounts for 2 per cent of global CO_2 emissions. Airplanes also create vapour trails that can persist in the atmosphere for hours, trapping and/or reflecting heat and exacerbating impacts on climate. And, while its current contribution to greenhouse gas emissions may only be a small proportion of the global total, aviation is a growing industry and the IPCC predicts that by 2050 it is likely to be responsible for 5-6 per cent of all emissions. Aviation was excluded from the first commitment period of the Kyoto Protocol so the industry has, to date, been exempt from any agreements made to reduce greenhouse gas emissions. So it could be argued that reducing air travel will help address climate change, and hence limit the disproportionate impact of climate change on poor countries.

Paradoxically, however, many poor countries are highly dependent on aviation-based industries such as air-freighted exports of fresh fruit and vegetables, and tourism. The negative impacts on development of limiting these industries because of reductions in air travel or air freight could far outweigh any benefits from reduced climate impacts.[7]

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Is offsetting the answer?

A growing number of concerned travellers are recognising the mismatch between what the science says and what governments have been able to deliver on climate change, and between the opportunities and threats that aviation presents for environment and development aspirations. As a result, more and more are searching for new ways to take matters into their own hands and reduce their 'carbon footprints' without limiting the benefits that aviation can bring to poor countries. Businesses also see opportunities for greening their image by reducing their institutional footprints.

Offsetting emissions from travel and other sources provides one way of reducing carbon footprints, and recent years have seen a dramatic boost in the market for carbon offsets. But as the market grows, so does the cynicism surrounding it. There are a number of concerns:

- Is offsetting emissions just an excuse for 'business as usual', and does it actually help to change behaviour?
- Who benefits from the offset projects, and do some projects actually harm poor communities? For example, they may be prevented from accessing forests or land they may have used for generations but which are now being strictly protected for carbon benefits.
- Are carbon reductions priced too low, relative to the damage caused by climate change? Most offsets aim to find the cheapest way of delivering emission reductions to ensure carbon neutrality for the purchaser, regardless of any social issues.

Another issue is whether offsetting is even scientifically sound. Planting trees to capture and lock up the carbon emitted from an international flight is only successful if it can be guaranteed that the tree will not be cut down or burnt, thereby releasing the stored carbon into the atmosphere again. If the tree was going to be planted anyway, it may also be unreasonable to claim carbon offsets from the planting. And if planting trees or conserving forests in some areas just leads to deforestation and release of carbon to the atmosphere in others, any benefits from offsetting would be cancelled out.

Winners and losers in forest-based offsets

A wide range of forest-based projects can help reduce, prevent or offset carbon emissions, but in general the market is dominated by large-scale projects with little community ownership and benefit. Such projects may also result in such local people losing access to land that is designated for a plantation or other carbon-related activity: 'A number of countries have targeted "degraded areas" for…plantations. In many cases, however, these may be lands held under traditional common property systems that are used by local people for a variety of purposes.'[8] With potentially high rates of return from carbon offset projects, opportunities are being seized by powerful elites, while local communities often lack the secure tenure and resource rights to stake their claim. In Uganda, for example, a project entailing the planting of trees for carbon offsets in Mount Elgon National Park has been criticised for ignoring local people's land rights and exacerbating the conflict between the park authorities 'guarding' the trees and adjacent communities claiming rights over the land.[9]

The challenge: harnessing the benefits of travel and tourism

It is clear that while climate change may be disproportionately bad for poor countries, simply reducing air travel – and thus potentially compromising the viability of key national industries – is not a quick-fix solution. Neither, however, is offsetting the way to resolve the dilemma, unless it can be linked to improved local livelihoods. While there are certainly risks to local communities from the rapidly growing interest in carbon conservation, there exist a growing number of schemes that could benefit local communities and generate income streams in areas with very little alternative economic potential, particularly where explicitly designed to do this. However, such schemes are still in their infancy.

Plan Vivo is a good example of a scheme specifically designed with community benefits in mind. It supports agroforestry and other small-scale initiatives with local communities that can be used to generate tradable carbon credits. In its Community Carbon Project with the N'hambita community living in the buffer zone of the Gorongosa National Park, Mozambique, agroforestry systems have been introduced that provide income from carbon finance and a range of benefits

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such as fruit, timber, fodder, fuel wood and improved soil structure. The community has also gained improved organisational capacity, education and awareness about forest stewardship and conservation, as well as novel income streams via bee-keeping, cane rat production and craft making.

AdMit – an alternative approach?

In response to people's desire to do something about climate change, and concerns that simply offsetting carbon emissions from travel and daily life may not provide all the answers, the new economics foundation (nef) and the International Institute for Environment and Development (IIED) are developing a new vehicle for promoting activities which both reduce atmospheric greenhouse gas concentrations and help those most vulnerable to climate change cope with its impacts. Rather than paying to offset carbon emissions and thus 'absolving' the polluter of responsibility, the AdMit product will focus on payments to compensate for the damage their lifestyles cause. The 'offset' component of the product is secondary to this.[10]

Official resources for adaptation to climate change are desperately inadequate. Pledges made at international conferences get ignored, and the original promises were, in any case, nowhere near the scale of the problem. Any money raised that goes towards high quality, community-led adaptation efforts is welcome. AdMit projects will promote true sustainable development, rather than just providing the cheapest way to offset emissions.

New route for the travel industry

Tackling climate change demands, first and foremost, sustained reductions in greenhouse gas emissions. This means reducing international air travel, reducing carbon reliance or increasing efficiency. The industry is currently paying considerable attention to efficiency and technology and huge strides are being made. Improvements in technology may also reduce the need to travel for business, but tourism and air freight are set to grow in significance – and provide much-needed earnings for poor countries. This means that a responsible approach grounded in good sustainable development principles is needed. The travel industry can busy itself with technological and efficiency improvements but should also encourage individual travellers to play their part. Offsetting could be part of the solution – but only if it takes full account of the needs and rights of local people.

[1] IPCC (2007) *Fourth Assessment Report of the Intergovernmental Panel on Climate Change.*
[2] IPCC (2007) *Fourth Assessment Report.*
[3] Reid, H. and Huq, S. (2007) *Adaptation to Climate Change: How we are set to cope with the impacts.* An IIED Briefing. IIED, London.
[4] WRI (2006). Climate Analysis Indicators Tool (CAIT) Version 3.0. World Resources Institute, Washington DC.
[5] MacGregor, J. 2006. *Ecological Space and a Low-carbon Future: Crafting space for equitable economic development in Africa.* Fresh Insights no. 8, DFID/IIED/NRI. www.agrifoodstandards.net/en/filemanager/active?fid=69.
[6] Sahlen, L., Reid, H., MacGregor, J. and Stage, J. 2007. *Estimating the Economic Cost of Climate Change in Developing Countries: Namibia*. Discussion paper no. 07-04, Environmental Economics Programme, IIED. www.iied.org.
[7] See www.propoortourism.co.uk for an analysis of the contributions of tourism to poverty reduction and www.agrifoodstandards.net for a critique of the concept of 'food miles'.
[8] Smith, J. and Scherr, S. (2002) *Forest Carbon and Local Livelihoods: Assessment of opportunities and policy recommendations*. CIFOR, Bogor.
[9] *Human Rights Abuses, Land Conflicts, Broken Promises: The reality of carbon offset projects in Uganda.* FERN Press Release, 12 January 2007.
[10] For more information on AdMit, please contact Saleemul Huq at IIED (saleemul.huq@iied.org) or Andrew Simms and nef (andrew.simms@neweconomics.org).

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