

Indulging Indulgence – Tourism, Carbon Offsetting and Climate Change

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Introduction

This paper takes a closer look at what is often touted as a major contributor to the solution of the climate change issue: carbon offsets. It begins by discussing climate change and its relationship to tourism before moving on to focus on individual versus collective action. The paper subsequently discusses carbon offsetting, its mechanics along with a number of drawbacks of the carbon offsetting approach to tackling global warming. Finally the paper provides alternatives to carbon offsetting before returning to the issue of collective action. It concludes by arguing for the need of a collective political solution that will tackle emissions at source.

Climate Change – The Status Quo

Climate Change is not a new phenomenon. In 1827 Fourier first described how the atmosphere permits light from the sun to pass through the atmosphere but traps outgoing heat, maintaining the surface temperature of the earth: the greenhouse effect. In 1896 Svante Arrhenius postulated “the enhanced greenhouse effect” arguing that as concentrations of carbon dioxide and other green house gases in the atmosphere increased the atmosphere would trap more heat radiation resulting in global warming. Research in the 1970’s confirmed that concentrations of greenhouse gases in the atmosphere were rising. Already in 1979 a US National Academy of Sciences report estimated that a doubling of CO₂ concentration in the atmosphere could lead to an average temperature rise of between 1.5°C and 4.5°C.

It is now clear that climate change is taking place and that, crucially, it is taking place at a pace that is likely to have significant consequences for the earth’s biodiversity. In February 2007, the Intergovernmental Panel on Climate Change (IPCC) Chair, Rajendra Pachauri, said: “Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global mean sea level” (IPCC 2007, p. 217). Perhaps the most emphatic conclusion of the aforementioned report is that “warming of the climate system is unequivocal” and that much (50 percent) of this warming is very likely (more

than 90 percent) due to increases in greenhouse gas concentrations associated with human activity (Liverman, 2007, p. 36). The first hurdle to taking action appears to have been overcome: recognition that a problem exists.

It is also now widely accepted that the rapid warming of the earth's climate poses a threat to humankind. Not an international political convention or congress goes by without climate change being on the agenda. Al Gore's movie 'An Inconvenient Truth', hurricane Katrina and publication of the Stern review are some of the better known events that have led public opinion to accept that if current trends continue climate change will have disastrous effects. But it is easy to gloss over the differential impacts of climate change. When all talk is of averages, impacts too are averaged out. However, we know that climate change disproportionately affects the poorest people in the world. Most communities in developing countries rarely have the financial means to mitigate the effects of climate change, be that increased risk of flooding, droughts, spread of disease or any other of the myriad potential impacts.

In addition to the recognition that climate change is upon us and that its effects are likely to be dramatic, there is also the realisation that the current rise in global average temperatures is to a substantial degree manmade. The rising standard of living of individuals, companies and nations has been fuelled by the carbon economy, the pollution from the burning of coal and oil, fossil fuels, has resulted into CO₂ being spewed into the atmosphere and an increase in concentrations of it and other greenhouse gases contributing to global warming. The use of "fossil fuels" to refer to coal and oil points to another finite resource which is being consumed unsustainably.

The climate change "tragedy of the commons" (Hardin, 1968) is exacerbated by issues around the science, in particular the debate about the extent to which the climate change is due to anthropogenic

factors; the differential impacts on people in different parts of the world, intra-generational equity; and the issue of intergenerational equity. Some of the poorest countries of the South are most likely to suffer the consequences of climate change and the worst effects are still twenty to forty years off, many of today's decision makers will be dead by then, the problem will have been bequeathed to their children. It has proven difficult to mobilise policy and decision makers to take collective action to deal with climate change and greenhouse gas emissions. The US Environment Protection Agency administrator, Whitman, reported in 2003 that as their report on the risks of climate change

“went through review, there was less consensus on the science and conclusions on climate change. Some corporations whose revenues might be adversely affected by controls on carbon dioxide emissions have also alleged major uncertainties in the science. Such statements suggest that there might be substantive disagreement in the scientific community about the reality of anthropogenic climate change. This is not the case.” (Oreskes, 2004, p. 1686)

Tourism's Contribution to Climate Change

Despite over a decade of negotiations under the UN Framework Convention on Climate Change carbon dioxide emissions from fossil fuels increased from 6.4 gigatons per year in the 1990s to more than 7.2 gigatons per year since 2000, and concentrations are now 379 parts per million, a 35 percent increase over preindustrial levels and higher than in any of the previous 650,000 years (Liverman, 2007). Tourism contributes its share to this increase. While overall tourism may be regarded as a minor player in contributions to green house gas emissions, the Davos Declaration (2007) reports that it contributes approximately 5% to total global emissions, the use of relative figures conveniently masks the extent of the actual contribution. Of these five percent of total CO₂ emissions generated by tourism, transportation causes around 75%, and aviation some 40% of this (World Tourism Organization & United Nations Environment Programme, 2008, p. 9). Without tackling aviation, tourism's impact on climate change cannot seriously be addressed.

Air passenger numbers are set to continue to increase regardless of current economic circumstances. A Keynote market report on Transport, Travel and Tourism suggests that passenger numbers on UK airlines grew by 18.5% between 2003 and 2007. If measured by seat kilometres flown the growth increases to 22.7% (Keynote, 2009, p. 5). According to the same report, between 2003-2007 UK airport passenger figures displayed a year-on-year growth although growth rates declined from a high of 7.9% in 2003-04 to 2.3 in 2006-07 reflecting a toughening economic climate as well as improved rail transport provision. Due to the unfavourable economic climate Mintel (2009) has revised its growth forecasts for the UK airline industry. Nevertheless, even the revised figures indicate an increase of 13% between 2007-2013 measured by seat kilometres available. A further threshold was surpassed when in 2007 the air travel penetration level reached 50.8%, the first time over half the British population travelled by air in any one year (Keynote, 2009, p. 18). Globally, we can quote the ubiquitous UNWTO figure of 1.6bn which indicates the anticipated number of international arrivals in 2020 (UNWTO, 2008). On most accounts then tourism, and with it air travel, is not going to decline any time soon. However, the major economic recession has provided some respite with air passenger miles and air passenger numbers declining. The impact of the recession will be temporary and the danger is that the recession will further delay effective action to ensure that aircraft emissions are reduced.

Individual and Collective Action

President Obama has spoken about the importance of tackling carbon pollution declaring that the US

“must take immediate action to reduce the carbon pollution that threatens our climate and sustains our dependence on fossil fuels. We have had limits in place on pollutants like sulphur dioxide, nitrogen dioxide, and other harmful emissions for some time. After decades of inaction, we will finally close the carbon pollution loophole by limiting the amount of carbon polluters are allowed to pump into the atmosphere” (Obama, 2009).

The US Environment Protection Agency is “is proposing to find that greenhouse gases in the atmosphere endanger the public health and welfare of current and future generations.” It is in the process of concluding that

“These high atmospheric levels are the unambiguous result of human emissions, and are very likely the cause of the observed increase in average temperatures and other climatic changes. The effects of climate change observed to date and projected to occur in the future - including but not limited to the increased likelihood of more frequent and intense heat waves, more wildfires, degraded air quality, more heavy downpours and flooding, increased drought, greater sea level rise, more intense storms, harm to water resources, harm to agriculture, and harm to wildlife and ecosystems--are effects on public health and welfare within the meaning of the Clean Air Act” (EPA, 2009).

This is a major change of policy, a change of approach which places the emphasis on the pollution which contravenes the well established Clean Air Act under which there is a presumption that the polluter pays. There remains the problem of identifying who has been hurt by the pollution and therefore who should be paid but this is at least significant step forward.

The anthropogenic contribution to climate change is a classic example, perhaps the most classic example, of what Hardin popularised as the “tragedy of the commons” (Hardin, 1968). Hardin explains the way in which the rational assertion of individual and company self interest results in collective folly in words that merit quoting in full:

“Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit-in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all.” (1968, p. 162)

Humankind's inability to manage collective resources has been recognised for at least two millennia. Aristotle pointed out that "what is common to the greatest number has the least care bestowed upon it. Everyone thinks chiefly of his own, hardly at all of the common interest" (Ostrom, 1990, p. 2).

The scale of the challenge posed to our species by global warming is such that the anthropogenic contribution to climate change needs to be addressed. The scale of the challenge is such that it is not possible for the necessary reductions to be achieved through reliance on individual actions – whether by individuals or corporations. One of the characteristics of a "tragedy of the commons" is that although it results from individually rational decisions it cannot be solved by individual actions. If any individual reduces their use of the global commons they cannot be sure that others will not expand their use immediately to negate their individual efforts at reduction.

A more recent explanation that parallels Hardin's (1968) is proposed by Giddens (2009) who explains that the politics of climate change has to do with the so-called 'Giddens paradox'. It states that "since the dangers posed by global warming aren't tangible, immediate or visible in the course of day-to-day life, however awesome they appear, many will sit on their hands and do nothing of a concrete nature about them. Yet waiting until they become visible and acute before being stirred to serious action will, by definition, be too late" (Giddens, 2009, p. 2). Again, as with Aristotle and Hardin, the relentless pursuit of individual gain will ultimately lead to collective disaster. That Giddens can "discover" and name this phenomenon in 2009 despite its long history is perhaps testament to the general failure of our species to come to terms with one of our major challenges: the balancing of collective and individual interests.

When the ozone hole was discovered the precautionary principle was applied (Litfin, 1994). When coupled with a relatively cheap technical solution, this resulted in collective regulatory action to remove the chemical pollutants causing the ozone hole from industrial processes. This demonstrated the effectiveness and efficiency of collective regulatory action. Action taken to regulate ozone depleting gases under the Montréal Protocol has been effective: “Over the past decade, changes in stratospheric ozone-depleting gases have likely contributed to the slowing of the midlatitude total column ozone decline and the general leveling off of ozone abundances.” The scientists concluded that the “decrease in ozone-depleting substances is the dominant factor in the expected return of ozone levels to pre-1980 values” (World Meteorological Organization, 2007).

IPCC reports have become progressively more certain about the anthropogenic causes and the scale of the consequences of climate change, the case is now very strong. However, despite the efforts of Stern to demonstrate that the costs of addressing the causes and consequences of climate change are greater than the costs associated with prevention (Stern, 2006) there has been reluctance to regulate. The dominance of neo-liberal thinking has resulted in a series of policy responses which have favoured voluntary and market solutions like carbon trading and carbon offsets.

Carbon Offsetting

Carbon offsets are often used as a primary response to carbon emissions. Carbon offsetting usually involves purchasing carbon credits, or offsets, equal in amount to the CO₂ emitted as a consequence of the activity of an individual or company, such as transport, heating or industrial combustion. These credits come in the form of payments to ‘green’ projects that reduce carbon emissions elsewhere, such as hydroelectric plants, foot-powered water pumps or reforestation programmes (for further information see Institute for International Development and Environment and/or the Carbon Consultancy).

Carbon neutrality is being used to refer to a situation where the amount of CO₂ emitted equals that which is then sequestered or offset. Sequestration remains relatively uncommon. Sequestration requires the deliberate removal or storage of carbon to a place, a carbon sink, where it can be permanently contained, trapped and kept out of the atmosphere. Scientists and engineers are developing methods for trapping carbon gases in the oceans and underground, however there is still considerable uncertainty about the engineering, polluting effects and financial costs of ocean sequestration. Geological sequestration is more promising and the Norwegians have been practising it since 1996 in the North Sea but there are still many practical problems to be overcome and it is expensive. The biological sequestration of carbon in plants and soils is the most viable approach; the earth's forests are large carbon sinks. However, there is mounting concern about this strategy because forests are only sinks when they are expanding in area or the trees are growing. Forests only take carbon out of the atmosphere for between twenty and fifty years, once they decay they emit carbon gases and there is concern that with global warming forest decay and fire may turn forests into a globally significant source of carbon.

The language of carbon neutrality should trigger very careful examination of the claims being made. An airline emits the pollution immediately as it flies from London to New York – the polluting effect is immediate. A carbon offset which may have reduced carbon emissions at sometime in the past or which makes a relatively vague commitment to reduce carbon emissions elsewhere at some point in the future does not deal directly with the pollution being caused by the flight. Offsetting may have raised awareness of carbon emissions and features as a part of the cap and trade mechanism to reduce global emissions. However, while one can reasonably argue that offsetting is better than doing nothing at all to mitigate green house gas (GHG) emissions, we argue there is something amiss in the assumption that a wrong plus a right simply cancel each other out – particularly when the connection is so tenuous. Parallels have been drawn between the trade mechanism underpinning carbon offsetting

and indulgences in ecclesiastic history. The purchase of a pardon, a permit to pollute by “paying” someone else to reduce their emissions may be cheap. It is easy to purchase discounted pardons, the market drives the price down. Carbon offsetting has been a popular quick fix – it is cheap and the consumer pays, generally as a voluntary additional payment. From the perspective of the airline or tour operator this has the additional advantage that there is no pressure on them to tackle the pollution they cause – the consumer pays the same amount for their medieval pardon however clean or dirty the aircraft.

The carbon calculators are crude relying only on the number of miles flown and a very variable calculation of the carbon pollution which results in significant discrepancies. The aviation industry calculates CO₂ emissions as a fixed ratio to fuel weight combusted, but actual emissions per passenger kilometre will be a more complex function of distance flown, take off and landings, operational factors, loads (freight and passengers) and the efficiency of the engines. The carbon calculators do not take these factors into account. Kimber (2007) reports a comparative analysis that found a 300 per cent difference in reported emissions for the same flight using carbon calculator, and a difference of over 20 per cent using calculators provided by airlines to their passengers. The difficulty in measuring CO₂ emissions will have knock-on effects for pricing carbon offsets for individual activities.

The Department for Environment Food and Rural Affairs uses a shadow price of carbon (Price, Thornton and Nelson, 2007). The shadow price of carbon recognises that carbon pollution is an externality. The social cost of carbon is the full global cost of a unit of carbon emitted into the atmosphere at today’s prices. It measures the scale of the externality by “summing the full global cost of the damage it imposes over the whole of its time in the atmosphere” (Price, Thornton and Nelson, 2007:7). It follows that the shadow price of carbon (SPC) should be specific to the year it is emitted or abated. For 2007 it was calculated that the SPC should be £25/tCO₂e. There are robust criticisms

of this approach. The House of Commons Select Committee on Environmental Audit, for example, concluded that "...the strict monetary value given for the SPC will undoubtedly be an undervaluation, given that it explicitly excludes social costs such as those arising from mass migrations and local wars due to increased flooding and droughts" (House of Commons, 2008).

However, the utility of the shadow price of carbon is in demonstrating the scale of the undervaluing of carbon in current offsetting carbon calculators. Climate Care is part of J.P. Morgan's Environmental Markets group. In May 2009 its price per tonne for a carbon offset was £7.50. plus VAT. This is just 30% of DEFRA's shadow price of carbon. Good value, cheap at the price, for a flight London Heathrow to New York JFK is 6,885 miles return. A carbon offset from Climate Care would cost £13.22 if DEFRA's SPC were applied the 1.53 tonnes of CO₂ emitted would be charged at £38.25.

Most, but not all, carbon offsetting companies are run for profit and it can be difficult to determine how much of the money contributed as an offset is actually used to offset the carbon emitted. But the fundamental flaw in the argument is that it is not possible to undo the pollution caused. As Atmosfair explains on its website "the environmental damage caused by the flight cannot be undone - just as a dental filling cannot restore a tooth. ... it is more advisable to try to fix the problem, than rest on the ill-founded belief that by ignoring the problem, it will miraculously solve itself." It is salutary to compare the public's reaction to the offsetting principle to different scenarios. For example, a video produced by Alex Randall of the Centre for Alternative Technology provided an opportunity for the unfaithful to offset their cheating by "funding someone else to be faithful and NOT cheat. This [they claim] neutralises the pain and unhappy emotion and leaves you with a clear conscience." It did not convince most of the people they approached in the street and it does not convince many of those who fly. Those who did not realise that the video was satirical were outraged – arguing that the video encouraged people to cheat on their partners (Katz, 2009). Cheat Neutral is reporting promising

results, it claims to have offset 65,768 cheats and to have 9,002 faithful people ready to neutralise their clients' misdemeanours. You cannot outsource your responsibility for contributing to climate change by paying someone else to solve it for you.

There are further points of concern relating to carbon offsets as the following list provided by the International Institute for Environment and Development (IIED, 2008) illustrates:

- High transaction costs for offsets make small projects that target individual communities impractical.
- Some offset projects have not reduced CO₂ production over the long term.
- Difficulties in credit accounting have allowed some carbon credits to be sold multiple times.
- Some projects that have been funded are not sustainable and do little to reduce poverty.
- Offsetting discourages people from taking action to cut their own emissions by allowing them to transfer responsibility for reducing emissions onto others.
- Funds are not targeted to the communities that are most vulnerable to climate change impacts.

It is not our intention to discuss these points in any great detail. They have been presented solely to provide further weight to the notion that carbon-offsets are not the ideal solution to the climate change problem they are often made out to be. Of all the drawbacks of carbon offsetting perhaps the most pernicious is that it can make individuals and businesses feel as though they have 'done their bit' for the environment. It can lead to an attitude of complacency in other words. This is precisely what the planet does not need at the present time. The matter is not supported by claims such as the following (Becken & Hay, 2007, p. 217 who refer to Sterk and Bunse, 2004) "From a climate change mitigation point of view, the best strategy is, of course, to reduce emissions at source, but where this is not possible (or too expensive) compensation projects are an acceptable alternative." This reference to

costs is a nice get-out-clause, the infamous loop-hole so often used by business to justify all kinds of actions. Re-phrased it reads “we’ll do it if we can afford it.” Unfortunately, what is affordable and what not is far too subjective to be of any use. We value the immediate more than the long term. This short-termism prevents us from taking decisive action because we don’t want to bear the immediate costs, in other words ‘we can’t afford it.’ If this wasn’t the case we would be acting decisively on the findings of the Stern report which indicate that expenses now will result in savings later.

One of the great injustices of climate change as briefly mentioned above is the transgression of the polluter pays principle. The issue is of course widely recognised as this comment by Sir Nicholas Stern indicates: "The problem of climate change involves a fundamental failure of markets: those who damage others by emitting greenhouse gases generally do not pay" (Benjamin, 2007). In an increasingly globalised world so-called externalities of economic activity have far reaching consequences. While ultimately everyone will pay the price for climate change, at present it is the world’s poorest who suffer most. They do not have the capacity, financial or technical to deal with rising sea levels, droughts, the spread of disease and such like. Carbon offsets only have limited success in tackling this issue. Therefore, carbon offsetting while useful also comes with downsides, most notably that it may divert from the structural and technological changes needed if climate change is to be tackled with any hope of success (WTO & UNEP, 2008). However, it also avoids the issue of dealing with the current impact of climate change. In most cases the polluter still doesn’t pay.

But why, one must ask oneself, should businesses, in this case airlines in particular, assume responsibility for ultimately only providing what consumers want? If demand slackened, so would supply. It’s in the hands of the consumer in other words to determine levels of output of any particular product or service. The same goes for legislation. DesJardins (2002, p. 247) points to legislation as the expression of societal desires thereby placing the individual consumer in the spotlight of

responsibility again. Friedman (1962) in his famous dictum appears to endorse this focus on consumer responsibility. He maintained that there is only one social responsibility of business and that is to increase its profits, albeit within the law.

The point is that business left to its own devices, left to regulate itself will not provide a solution to climate change. We have seen what happens when business' only goal is profit maximisation, in terms of climate change as well as the recent turmoil that started in the financial markets. As indicated above, carbon offsetting should only be seen as an interim step before actual emissions are reduced. In an otherwise illuminating read Giddens (2009) scarcely discusses the role of business in addressing climate change. Unsurprisingly one may argue in a book entitled *The Politics of Climate Change* the focus is on governments and supranational institutions. However, it is not enough to legislate against climate change, and in any case, it doesn't appear as though the legislature is capable of pushing through regulation that sufficiently deals with the causes of climate change. This is where Desjardin (2002) calls for a rearrangement of business in a way that it is able to meet economic needs while supporting rather than degrading the environment. Eco-efficiency and biomimicry (the modeling of business on environmental processes) are promoted by DesJardin as a way of achieving the re-arrangement. Of course, where cost savings can be made by being more environmentally responsible (this applies to use of energy as well as discarding of waste) businesses will have an incentive to behave more responsibly.

A New Approach: Fly Smart

Carbon Offsetting has not delivered and for structural reasons cannot deliver. What is required is a mechanism which will encourage airlines to fly more efficiently, to use less fuel per passenger mile and to cause less pollution. The following provides alternatives to carbon offsets. It does not discuss technological innovation as this is often seen as the solution to climate change and is widely accepted.

It does not discuss renewable energy either as these are things that should be engaged in anyway. Instead we highlight an initiative proposed by the International Institute for Environment and Development called AdMit (adaptation and mitigation). The term adaptation may easily be misconstrued as a reactionary way of dealing with climate change. However, adaptation has to be anticipatory and preventative, pro-active adaptation as Giddens refers to it (Giddens, 2009, p. 163). Nonetheless, climate change already affects people, often the poorest. Where this is the case it is no use pointing to the future and suggesting one day things will be better. This is where the AdMit initiative differs from the majority of offsetting activity. It is a compensation that should improve lives immediately. It is not a get-out clause that allows business as usual. Reducing carbon emissions is critical but equally important is providing communities now with the means of existence.

A change in international regulations to ensure that airline fuel was taxed would encourage the airlines to operate their planes in the most efficient way possible and, if the tax was high enough, to purchase more efficient planes. In the absence of this pressure on the airline and manufacturers companies, tour operators and business travel purchasers, and individuals can be encouraged to FlySmart and to donate through Carbon Philanthropy.

We can reduce the amount of carbon which our flying emits into the atmosphere by flying less, flying direct (take off and landing uses more fuel than cruising), carrying less luggage, flying with airlines which fill and pack their planes (charters and the new no frills airlines) and flying with airlines which have the most efficient fleets¹. There is now one Carbon Friendly Flight Finder available operated by the GDS Global Travel Market (Flysmart). If you have chosen to fly then choose the most carbon efficient fleet operator possible – the cost is not always very much greater than the cheapest flight available.

¹ The data to enable travellers to choose the most efficient flight option on any given route is not yet available.

Instead of carbon offsetting, or ideally in addition to it, Carbon Philanthropy can be engaged in. This is a more direct and therefore reliable way of ensuring those who need assistance because of the effects of climate change also receive it. Carbon Philanthropy projects are charitable, and are therefore eligible for Gift Aid. The International Institute for Environment and Development and the New Economics Foundation are developing AdMit as a responsible choice for consumers enabling them to assist by making a compensation payment rather than buying a get-out pardon. Reducing emissions, mitigation, is vital but so is assisting poorer communities to adapt. This is a positive way of admitting responsibility for climate change and doing something about it.

Conclusion

This paper has briefly reviewed the role of tourism's contribution to climate change, in particular focusing on the airline industry given its role as a major source of GHG emissions. Carbon offsetting was discussed and then criticised on a number of accounts. One of the most important criticisms this paper made was the tendency of carbon offsetting to absolve businesses of their responsibility to become more carbon efficient. Responsibility is passed to the consumer, who admittedly shares responsibility, as do businesses however. The paper argued that collective solutions are necessary to tackle climate change as individual action faces the 'tragedy of the commons'. Increased tax on fuel was reiterated as a partial solution that would ensure businesses respond to the calls for more energy efficient operations. Finally, rather than donating money to carbon offset schemes the paper highlights the role of Carbon Philanthropy as this ensures the donations reach those who need it most. This is a particularly important point as the affects of climate change impact poorer communities disproportionately. Tourism undoubtedly faces immense challenges in the future. For tourism to become more responsible we must be prepared to engage in meaningful debate and subsequently act on the insights we have gained.

, it goes beyond Friedman's view of where the responsibilities of business lie, and yet it will not lead to a significant reduction in the rate of global warming. It certainly does not put sufficient pressure on airlines to reduce emissions. Our discussion has shown that consumers on their own can do little to address the causes of climate change. What is needed is a collective political solution, in particular a solution that sees the polluters pay for their emissions. A tax on fuel would certainly see the more rapid introduction of fuel efficient technologies and wouldn't allow freeloading. Of course, reducing emissions is everyone's responsibility, however, emissions should be reduced at source.

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