

Paper 3
FAIRNESS IN A POST-CARBON SOCIETY

Victoria Johnson and Andrew Simms
nef, UK

Executive Summary

By the time a family in Britain sits down for their evening meal on 3 January, they will already have generated the equivalent in greenhouse gases that it would take a similar family in a sub-Saharan African country like Tanzania the entire year to produce. This is a common narrative throughout the global South. To add to this inequality, the impacts of climate change are very unevenly distributed. The continuing development crisis and marginal climatic conditions in much of the global South means that many people are more vulnerable to increased climate variability and long-term climate change.

The consequences of 150 years of rapid exploitation of fossil fuels already fall disproportionately on those who have benefited least from their use. Worse still, we are set to pass that burden on to future generations. Peak oil and climate change means the poorest people will be even less likely to benefit directly from fossil fuels, and more likely to suffer the impacts of their use. Despite a wealth of literature on the principles of fairness there is no generally accepted definition of what this means practically in the context of climate change. As such, states have tended to interpret the grounding fairness principles of the UNFCCC differently. Here, we take fairness to be the product of justice (participation and the realisation of rights) and equity (the equal per capita share of burdens and resources).

This briefing paper looks at what the parameters of a framework for an equitable and just transition to a post-carbon society might be. A number of propositions prevalent in the current debates about climate change and peak oil are also considered:

- a) Equity and justice among people alive today and between current and future generations should be the basis of a formal global climate change framework.
- b) Climate policy needs to agree on a 'safe' level of warming correlated to a given concentration of greenhouse gases in the atmosphere.
- c) Everyone has an equal claim to the assimilative capacity of the atmosphere; large historic emissions imply acquired obligations.
- d) Environmental effectiveness of climate policy based on precaution should be central to any global framework. But, without respecting and reconciling equity, historical responsibility, and ecological debt, an international deal will be politically unworkable.
- e) Following from the above, there is a need for an automatic and 'apolitical' mechanism for redistributing the costs of adaptation to, and mitigation of, climate change (see paper 10);
- f) The current global economic system is inefficient at delivering human development and well-being, and has a tendency to 'lock-in' inequality, and an unbalanced distribution of costs and benefits in a warming world.

To achieve global cooperation, the values rooted in these propositions need to be reflected in an international climate change agreement. Yet, many believe it unlikely that this will be achieved in the time left to agree a post-2012 deal. The layers of complexity in the negotiating process due to a combination of historically rooted economic development issues and broken aid promises means there is now a real risk that the agreement will end up not being adequate enough to avert dangerous climate change.

A dialogue between the most significant actors in the global economy, with ambitious targets and equity as a central theme may catalyse broader global cooperation. Some, like the AGCC, go further, arguing that such talks should lead to a legally binding treaty that

complements, and does not detract from negotiations on next steps for the Kyoto Protocol. A bilateral treaty between India and Europe, for example, that is parallel to the post-2012 agreement could create the necessary momentum and encourage participation of other states through the creation of an environment of trust, and attractive burden- and resource-sharing mechanisms.

Introduction

Though often honoured more in name than in practice – fairness, expressed in commitments to fundamental human equality and universal human rights, is written into the foundations of international law and international institutions such as the UN. It is also the basis of the UN climate agreement.

This matters because a lack of fairness in our warming world is increasingly evident in almost all aspects of society: from the social distribution of climate change impacts to the cost of mitigation, and the accountability for historic emissions, which are so closely related to the national and per capita distribution of wealth and consumption. This briefing paper introduces and maps some of these issues. The tenth briefing paper in this series *Engineering transition to benefit human development* (Paper 10) identifies ways in which this transition to a fair, post-carbon society can best meet the aspirations of the developing world.

Equity and the climate change negotiations

‘The poorest developing countries will be hit earliest and hardest by climate change, even though they have contributed little to causing the problem. Their low incomes make it difficult to finance adaptation. The international community has an obligation to support them in adapting to climate change. Without such support there is a serious risk that development progress will be undermined.’

The Stern Review, 2006

A commitment to equity forms the basis of the United Nations Framework Convention on Climate Change (UNFCCC), which as of late 2007 over 190 countries have signed (of 192 member nations of the UN). Article 3.1 of the UNFCCC states:

‘... Parties should protect the climate system for the benefit of present and future generation of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly the developed country Parties should take the lead in combating climate change and adverse effects thereof.’

The atmosphere as a global commons

The atmosphere is a global commons and, as such, its services are vulnerable to unbalanced use. Any common, yet bounded resource, if over-used by one party will be less available to others. The atmosphere is an example of a global common, because of its capacity to absorb CO₂ and other greenhouse gases. Climate change is a clear example of the ‘tragedy of the commons’,¹ in which the absence of a sufficient management regime creates a tendency toward exploitation and overuse.

Being, a ‘commons’ implies that everyone has an equal right to the atmosphere’s absorptive capacity. To stay within that ‘safe’ capacity, a global population of 6 billion has,

approximately, an emissions allowance, per person of around 2 tonnes of CO₂ equivalent* (CO₂) per year. But, the average European emits approximately 10.5 tonnes of CO₂ per annum, whilst the average Indian emits just 1.9 tonnes of CO₂.

Following the equity principle and adding historical responsibility, many argue that those who have already emitted more than their fair share should accept new and additional responsibility for the climate problem – as identified in Article 3.1. While this may seem like a straightforward argument, it has been subject to heated discussion at international climate negotiations. Perceptions of what is a fair allocation of responsibility tend to be dependent on a nation's position in the international system. This includes things like the stage of economic development, or potential economic losses from action (or inaction).² This is discussed further in Briefing Paper 9.

The triple inequality: responsibility, vulnerability and mitigation³

Vulnerable communities, households and individuals can be found in all countries, but they are most numerous in the South. The reasons are manifold. First, there is greater exposure to climate shocks and stresses, exacerbated by high poverty rates, a lack of resources and adaptive capacity. This is then compounded by states that can be relatively weak in terms of their institutions and governance, vulnerable to the forces of economic globalisation, and left with the longer historical and colonial legacies of under- or maldevelopment.⁴

Not only are the most vulnerable groups more likely to suffer the impacts of climate change, they are often at the sharp end of policy responses and yet often excluded from participating in key decision-making processes.

For example, low-income households might suffer regressive impacts from the introduction of domestic energy taxes. Equally the poorest are disproportionately exposed to price fluctuations in the global market for food and energy. And the prices, in turn, are likely to be influenced by a complex interaction of public policy, market forces, corporate influence, resource depletion and climate change – none of which the poorest can exert much influence over. The rising price of cereal crops in the global market is just one example. It is, in part being driven by US and European policies on agrofuels, poor harvest and the rapid growth in demand for animal products in China. These in turn are a response to a mixture of climate change, the rising price of oil, particular development models and fears about energy security.

Last year US farmers distorted the global market for cereals by diverting 14 million tonnes, or approximately 20 per cent of the year's maize crop, to ethanol production for vehicles. This nearly doubled the price, as US exports of maize make up 70 per cent of the total market. Maize is a staple food in many countries, such as Japan, Egypt, and Mexico, and is used widely for animal feed. The shortages have caused significant disruption to the global food market, including livestock and poultry industries. US policy, however, continues to push for rapid increases in ethanol production, as part of plans to reduce petrol demand by 20 per cent by 2017.

Climate change and human rights

The unequal distribution of impacts between nations has been a continuing theme of the reports of the UK Working Group on Climate Change and Development (known as the *Up in*

* For the sake of ease, greenhouse emissions are often reported as though they were equivalent to a given volume of CO₂. The greenhouse gases incorporated in this figure include CO₂, CH₄, N₂O, HFC, PFC and SF₆.

Smoke reports).⁵ Article 28 of the Universal Declaration of Human Rights[†] proclaims that 'Everyone is entitled to a social and international order in which the rights and freedoms set forth in this Declaration can be fully realized.' Those who suffer the impacts of climate change could find that their fundamental human rights are violated.

Under international law, every person has fundamental rights that protect their dignity, regardless of their nationality or cultural affiliation.⁶ These include universal rights:

- a) to 'a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control' (Article 25);
- b) to social security (Article 22);
- c) to 'equal access to public services' (Article 21);
- d) to 'education... free, at least in the elementary and fundamental stages' (Article 24);
- e) 'to work, to free choice of employment, to just and favourable conditions of work and to protection against unemployment' (Article 23);
- f) 'to just and favourable remuneration ensuring for himself and his family an existence worthy of human dignity, and supplemented, if necessary, by other means of social protection' (Article 23); and
- g) to 'rest and leisure, including reasonable limitation of working hours' (Article 26).

Recognising the role that human rights obligations place on the protection of human dignity and equity has major implications for the management of aid and development policy in a post-carbon world. Climate change and peak oil represent physical and economic shocks that are set to make the realisation of the rights listed above much harder.

One example where human rights violations have formed the centre of an environmental justice lawsuit occurred in Nigeria in November 2005. The plaintiffs (communities across the Niger Delta) argued that gas flares linked to oil production were a health hazard, and a major source of greenhouse gases. The Federal High Court of Nigeria ordered the Shell Petroleum Development Company of Nigeria and the Nigerian National Petroleum Corporation to stop gas flaring in the Niger Delta.

The rise of the environmental refugee

The challenge from global warming to human rights is symbolised in the rise of the phenomena of the 'environmental refugee'. The job of managing refugees already falls largely to developing countries. Climate change is set to make that imbalance far worse, increasing the weight of the burden. According to the United Nations High Commissioner for Refugees (UNHCR) by the end of 2006, developing regions hosted 7.1 million refugees, 72 per cent of the global refugee population. And, the 50 Least Developed Countries (LDCs) provided asylum to 22 per cent of the world's refugees.⁷

Forced from their homes and lands by flood, storm, drought and other environmentally driven and weather-related disasters, environmental refugees are now one of the fastest-growing classes of refugee. They are thought to significantly outweigh in number by several million orthodox political refugees. By 2050, between 150 and 250 million people may be displaced by environmental impacts related to global warming, such as sea-level rise and drought – up to around four times the total current population of the UK.⁸

Many of the worst impacts of climate change are expected to occur in parts of the world that are either very or relatively poor, or where states are weaker and more conflict prone. As a result, this is likely to represent another example of deep inequity in terms of the costs,

[†] Adopted by General Assembly Resolution 217A (III) of 10 December 1948.

causes and consequences of climate change. In a 1995 climate conference in Berlin, Dr Atiq Rahman of the Bangladesh Centre for Advanced Studies famously warned delegates that 'if climate makes our country inhabitable, we will march with our wet feet into your living rooms.'⁹ In Briefing Paper 9 we outline suggestions that have been made on how to manage the environmental refugee crisis.

The impact of rising oil prices

The global economy is still well over 80 per cent dependent on fossil fuels. Almost all aspects of our economy are dependent on a constant and growing supply of cheap oil, from transport to farming, to manufacturing and trade. In the majority world, where too many people live close to, or below the breadline, the long-tail of green revolution agriculture depends on pesticides and fertilisers that need large amounts of fossil fuels. The implication of any interruption to that supply, either in terms of price or simple availability, means a significant shock to the global economy. Everyone will be affected, but some more than others.

Due to rising oil prices over recent years, the United Nations World Food Programme (UNWFP) has had to reassess its agreed budget for 2008 after identifying a \$500 million budget shortfall. The \$2.9 billion allocated for feeding over 73 million people in 78 countries (less than one-tenth of the total number of the world's undernourished) will fall short of the real costs due to global annual food and transport price increases. A 40 per cent increase in food prices and dramatic hikes in fuel costs due to rising prices of oil means that the budget is no longer enough even to maintain current food deliveries.¹⁰ This is an indication of the impact peak oil will have on food prices.

Different government responses to oil price rises can radically alter the consequences for developing countries. Following the 1973 oil price shock, relaxed monetary policy in rich countries meant low to negative real interest rates on hard currencies. As well as maintaining demand for poor countries' exports this also laid the foundations for the Latin American debt crisis. But following the 1979 oil price shock, rich countries' fear of inflation created a triple blow for their poorer relations. Economist David Woodward describes the consequences of tightening monetary policy, 'demand contracted, developing countries' export prices collapsed and real interest rates increased dramatically to historically high levels.'¹¹ Consequently, the price of oil imports doubled 'overnight' and interest rates on commercial foreign debts doubled over the next three years.

Even at oil prices prevailing in early 2004, the International Energy Agency (IEA) believed that oil-importing developing countries were being seriously disadvantaged.¹² As the International Monetary Fund (IMF) observes, although the so-called Heavily Indebted Poor Countries (HIPCs) 'account for only a small share of global GDP, many of them are among the most seriously affected by higher oil prices'.

The IMF points out that 30 of the 40 HIPCs are net oil importers, making them particularly sensitive to price fluctuations. Their problems are compounded by several interconnected economic factors including: low per capita incomes, high level of oil imports relative to GDP, large current account deficits, high external debt, and limited access to global capital markets. Altogether, according to the IMF, this means that, 'the impact of higher oil prices on output is relatively large, as it will have to be met primarily through a reduction in domestic demand'. This is economists' speak for the poor getting poorer.¹³

Fuel poverty: access to affordable, clean and efficient energy

On average, the world's richest populations use up to 20 times more energy per person than those from the poorest countries.¹⁴ However, directly comparing per capita CO₂ emissions in, for example, the United States to those of Tanzania shows that the difference can be more

than 200: 1.¹⁵ Currently, around 2.4 billion people do not have access to clean fuels for cooking or heating, and 1.6 billion do not have access to electricity.¹⁶ And, while there is no marked reference to electricity and energy in the UN Millennium Development Goals, access to good, clean energy is essential for schools, hospitals and other essential services, underpinning their attainment.

One example would be the appropriate sharing of wealth and knowledge to provide clean energy to the 2.4 billion people in low-income countries, currently without access to electricity and who suffer the health burdens of indoor air pollution from household use of solid fuels. The lack of access to electricity and clean fuels lies behind many aspects of poor health and poverty in the developing world.¹⁷

Renewable energy to empower communities

Clean renewable energy sources could, potentially, provide all the energy needed for human development. They can also abate the pollution that adds to climate change. Renewable energy can supply *power* to communities, but where the technology is developed, implemented and maintained by local people, they can also *empower* communities who have in other ways been marginalised – a further benefit that is, as yet, only poorly appreciated.

Small-to-medium scale renewable-energy technologies are ‘development friendly’. They give people more control over the power they need in their day-to-day lives, supplying power to communities marginalised from conventional power grids, creating jobs, reducing economic dependency and represent a feasible, sustainable future for energy systems, especially for rural populations.

Hence, choosing the right kind of technological response to climate change can, instead of entrenching inequality, encourage greater fairness.

Barriers to technology diffusion

Despite technology transfer and the spread of clean-technology being a key issue in international climate negotiations, it has been stifled by various political and economic factors. Both limited capacity to absorb new technology in some developing nations and constraints introduced by restrictive intellectual property rights are real problems. Proponents of the system of intellectual property rights argue that patenting law provides incentives for firms to innovate. Others contend that it simply obstructs rapid diffusion of clean-technology or hinders their further development. Many of these issues can be overcome by joint ventures and international collaboration. A climate community could facilitate such collaborations or advocate a more ‘open-innovation’ approach to clean-technology developments. This could catalyse clean-technology development and diffusion, but also provide finance and build capacity for installation. This is discussed in more detail in Briefing Paper 9.

What is dangerous climate change and who decides?

Any discussion on fairness and global warming, must address the fundamental question – what is tolerable climate change? However, the difficulty in defining tolerable climate change lies in reconciling the answers to these questions: what kind of danger is acceptable and to whom is it acceptable?

Science can indicate what we might expect to happen as the temperature rises, but the decision of what is tolerable and how far global warming should be allowed to go is, up to a point, a subjective one. A series of interviews with 22 top climate experts elicited that even they had a strictly limited ability to define danger according to thresholds, such as those described in the sixth briefing paper *Transition to a post-carbon society – what do we know to be possible?*¹⁸ Allowing for the fact that some might consider a meaningful threshold to be

the point at which irreversible feedbacks in the biosphere are triggered, what appears to be a scientific question, in reality is based on a political and ethical value judgement.

What is safe today for someone living in London may already be very dangerous for a South Pacific islander and extremely uncomfortable for someone without air conditioning living through a heatwave in New Delhi. Article 2 of the UNFCCC calls for the stabilisation of greenhouse gas concentrations at levels that. '...would prevent dangerous anthropogenic interference with the climate system. Such levels should be achieved in a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner'.

For some time, an increase in the average surface temperature of 2°C above pre-industrial levels has been considered by the European Commission and others to be a 'safe' level of warming. But, the advancement of global climate models to three-dimensional coupled entities with ever increasing spatial resolutions, suggests that climate policy based on global mean temperatures is now effectively meaningless. Different climate impacts are associated with different levels of temperature rise, and the impacts of climate change will manifest in local changes in temperature. With the development of higher spatial resolution regional climate models, model integrations now strongly suggest that a warming of 2°C cannot be described as 'safe'.

Current climate policy needs to redefine what is described as a 'safe' level of climate change that is based on an atmospheric concentration of greenhouse gases. At the very least, it is unlikely to be considered fair, if the definition of acceptable levels of warming is decided by those who bear the least impact.

Who owes whom?

Looking around the world, how fairly is the Earth's biocapacity currently used? Europe's high-consuming lifestyles, for example, are only possible because the rest of the world supports them with large supplies of natural resources. The way we live also sets a model of materialism that many people in much poorer countries understandably seek to emulate. For example, 40 years ago, if the whole world wanted to copy UK lifestyles, the Earth could just have supported the demand on its ecosystems. But, the UK's consumption levels have risen steadily.

Today, if everyone consumed as much as the average UK citizen, we would need more than three planets like Earth to support them. In order to live within our overall environmental means, and to give people around the world a chance to meet their needs, the UK will have to reduce the burden its lifestyles create. This inequality describes a mirror-image of the financially driven debt crisis effecting poor countries. It is the ecological debt crisis of rich countries. Broadly understood, the idea has a history dating back over centuries of colonial plunder of natural resources, but it also has a more specific recent development.

The emergence of ecological debt

In the late 1980s, enquiries into equity and geographical carrying capacity introduced the language of 'environmental space'. At the start of the 1990s, Canadian geographer William Rees began talking about 'ecological footprints'. It became possible to look at the size of a given 'hinterland' needed to support an industry or population. The late Indian environmentalist Anil Agarwal with colleague Sunita Narain applied a harder political edge in 1990 in *Global warming in an unequal world*, which exposed the wildly different degrees to which people in rich and poor countries pollute. They also wrote openly about what they called 'environmental colonialism'.¹⁹

In the run-up to the 1992 Earth Summit, a group from Latin America and the Caribbean put together a report called *Our common agenda*. 'The Industrial Revolution was based in large part on the exploitation of natural resources in ways which did not reflect their true costs', they argued, concluding, 'the industrialised countries have incurred an ecological debt with the world'. Such debts today get broadly defined to include pollution, theft of resources and disproportionate use of available biocapacity. In the mid-1990s, the UK development agency Christian Aid drew direct parallels between majority world financial debt and rich world ecological debt, concluding that the former was dwarfed by the latter in both size and life-threatening impact.²⁰ Ecuador is now home to a campaign to reclaim the debt, and others have sprung up elsewhere.

Our interdependence now rests on the relationships between high-consuming nations and individuals (ecological debtors) and low-consuming people and poor nations (ecological creditors) that, in effect, 'lend' their ecological resources. How those relationships develop is set to shape international relations and political debate over the course of the coming century.

How much is ecological debt worth?

In 1999 an estimate was made of the wealth accumulating to G7 nations based on their disproportionate and unsustainable use of fossil fuels. This amounted to a staggering \$13 to \$15 trillion[‡] each year.²¹ It was one way of illustrating the ecological, or 'carbon debt' in financial terms. Other studies since have used calculations based on estimates of the environmental damage costs per tonne of carbon burnt.²² Still more recently, a study examined the impact of six key types of environmental damage (farming intensification and expansion, deforestation, overfishing, loss of mangrove swamps and forests, ozone depletion and climate change) caused by rich nations. These results echoed the 1999 study.

In the case of climate change, low, middle and high income nations were responsible for 13 per cent, 45 per cent and 42 per cent of greenhouse gases respectively. The same pattern of responsibility was observed for the five other types of environmental damage. However, the cost of environmental damage disproportionately harms poor nations –costing them more than their total foreign debt. Using an equity weighting (which addresses the disparity in burden to poor and rich persons bearing the same monetary costs) the authors found that the distribution of damages between low, medium, high income nations is 45 per cent, 52 per cent and 3.1 per cent respectively.²³

Growth isn't working

Recent research by nef (the new economics foundation) examined the effectiveness of growth as a means of achieving poverty reduction. The analysis indicated that global economic growth is an extremely inefficient way of achieving poverty reduction, and is becoming even less effective. Between 1990 and 2001, for every \$100 worth of growth in the world's income per person, just \$0.60 found its target and contributed to reducing poverty below the \$1-a-day line – and was down from a comparable \$2.20 share the previous decade. To achieve every single \$1 of poverty reduction therefore requires \$166 of additional global production and consumption, with all its associated environmental impacts.²⁴

Given current, highly unequal patterns of the distribution of benefits from growth, to get everyone in the world onto an income of at least \$3 per day – the level around which income stops having an extreme effect on life expectancy – implies the need for an almost unimaginable 15 planet's worth of resources to sustain the requisite growth. Even then,

[‡] Based on an assessment of the value of the G7 countries' economic output in 1995, and built on the foundations of unsustainable per capita carbon use.

environmental costs would fall disproportionately, and counter-productively, on the poorest – the very people the growth is meant to benefit.²⁵

So, globally, including in relatively rich countries, there is a danger of locking in a self-defeating spiral of over-consumption by those who are already wealthy, justified against achieving marginal increases in wealth amongst the poorest members of society. Even more, in industrialised countries, patterns of work and rising consumption are pursued that repeatedly fail to deliver the expected gains in life satisfaction. At the same time, these patterns of (over) work potentially erode current well-being by undermining family relationships and the time needed for personal development.

How growth isn't working, and how it is limiting the adaptive capacity[§] of developing nations'
In 2007, nef carried out a research framing study for Department for International Development on the impacts of macroeconomics on the adaptive capacity to climate change of sub-Saharan African (SSA) countries.²⁶ The study investigated macroeconomic policies, their performance and how the determinants of adaptive capacity had evolved over the last 25 years on a continent-wide basis. The study looked at two countries in detail, Ethiopia and Ghana.

Over the past 25 years, the SSA region has been greatly affected by issues such as the debt crisis and critically weak commodity prices. These have required governments – generally under the guidance of the IMF and World Bank – to adapt to fundamental changes in the international economic environment.

Only very marginal gains in adaptive capacity were noted during a period when other parts of the world experienced huge increases in wealth. And, the absolute levels of adaptive capacity in the public sectors and at the household level in those countries, remains minimal. The extent of improvements was seen to be negligible relative to the scale of the climate challenge. If the cases in Ethiopia and Ghana reflect the situation across the continent, a step change in the development of adaptive capacity will be essential to limit the impact of climate change. These findings suggest that the active investigation of alternative approaches to development is urgently needed. New models need to be found that can achieve a substantial acceleration in the development of adaptive capacity (see Paper 10).

How much is enough?

A growing body of literature shows that once people have enough to meet their basic needs and survive with reasonable comfort, higher levels of consumption do not tend to translate into higher levels of life satisfaction, or 'well-being.' Instead, people tend to adapt relatively quickly to improvements in their material standard of living, and soon return to their prior level of life satisfaction.

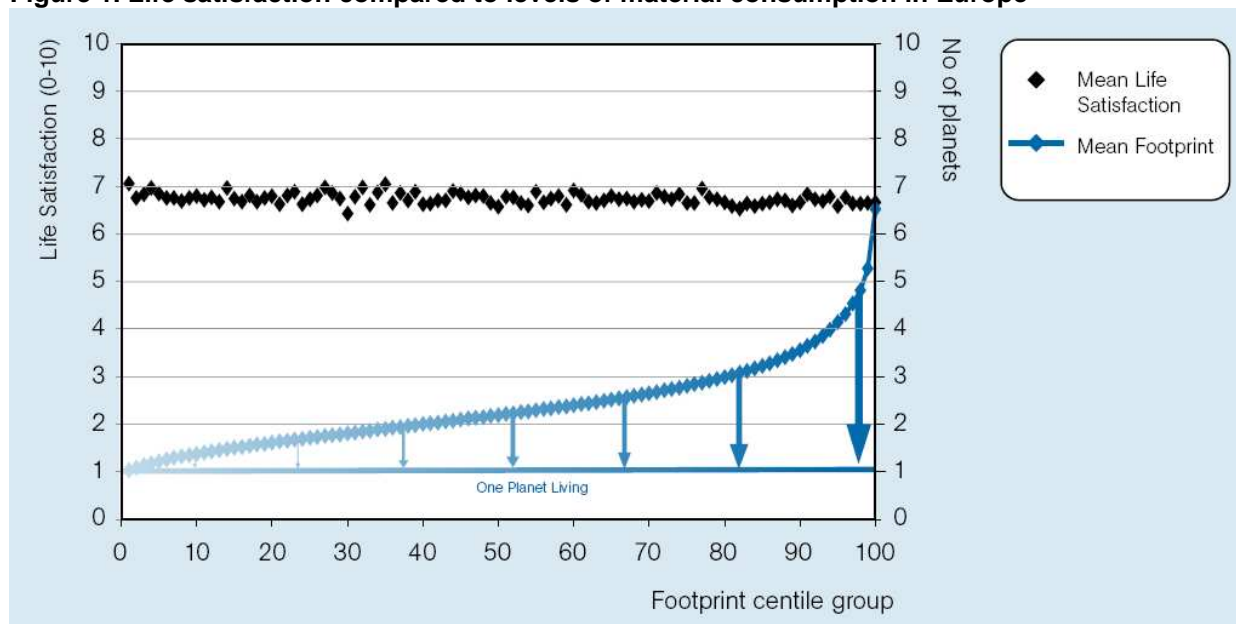
This is known as becoming trapped on the 'hedonic treadmill,' whereby ever higher levels of consumption are sought in the belief that they will lead to a better life, whilst simultaneously changing expectations leave people in effect having to run faster, consuming more, merely to stand still. National trends in subjective life satisfaction (an important predictor of other hard, quantitative indicators such as health) stay stubbornly flat once a fairly low level of GDP per capita is reached.²⁷ And, importantly, only around 10 per cent of the variation in subjective happiness observed in Western populations is attributable to differences in actual material circumstances, such as income and possessions.²⁸

[§] Adaptive capacity may be defined as 'the ability of countries, communities, households and individuals to adjust in order to reduce vulnerability to climate change, moderate potential damage, cope with, and recover from the consequences' – Tyndall Centre (2006)

Figure 1 shows the results of an online survey of life satisfaction and consumption in Europe, gathered by nef.²⁹ The web-based survey contained questions about lifestyle – consumption patterns, diet, health, family history – as well as subjective life satisfaction. Using this data, estimates of footprint and life expectancy could be calculated. Some 34,000 people in Europe completed the survey.

The blue line represents the distribution of ecological footprints across the total sample, expressed in terms of the number of planets worth of resources that would be required if everyone on the planet were to live the same way. To the right end of the distribution are those people with high consumption lifestyles, approaching ‘seven planet living’. To the left are those whose lifestyles have the least environmental impact, approaching the planetary fair share ‘one planet living’. The arrows depict the nature of the transition that is required to both level, and lower disparities in consumption towards equitable and sustainable use of the earth’s resources.

Figure 1. Life satisfaction compared to levels of material consumption in Europe



Fairness and one planet living

In general, the majority of carbon emissions produced by the poor, irrespective of their geographic location are ‘necessary emissions’, mostly due to domestic energy consumption. And, due to their lower consumption levels, their overall carbon footprints are the lowest of all income groups. Higher income groups, however, have a higher level of ‘luxury emissions’ associated with their higher levels of consumption and transport.

Figure 1 shows that we face both a challenge and an opportunity. The challenge relates to the extent of European over-use of planetary resources and their ‘luxury emissions’ due to their higher level of consumption. The distribution of footprint is both unequal and too high in absolute terms. The opportunity arises in the awareness that well-being has little to do with consumption. This allows for the possibility of reducing the EU footprint significantly within a 10-year timeframe to address climate change, and without leading to loss in well-being.

But, the North’s high consuming lifestyles seem locked-in by our economic, technological and cultural context, which fails to address equality and instead drives ‘relative poverty’. As the gap between the ‘haves’ and ‘have-nots’ widens, there tends to be a concomitant loss of life satisfaction, and sense of community and, ultimately, a rise in social disequilibrium. This acts as a barrier to progressive improvements in overall well-being, as the physical and

mental well-being of those in the lowest bands is undermined, creating domino effects throughout society. Such patterns of economic growth, with their accompanying environmental and social costs, effectively block routes out of poverty and relative poverty.

Possible mechanisms for active burden sharing

New initiatives are needed to mend and build trust between nations of the North and South. A range of possible mechanisms have been suggested for burden- and resource-sharing which could grow trust and encourage participation by of the Global South. These might include:

- a) *The transfer of funds commensurate with historical responsibility.* We discuss how mitigation and adaptation funds might be raised in Paper 10.
- b) *Honouring existing financial commitments:* To elicit a climate of trust, all Northern parties ratifying a climate community treaty, should honour the financial commitments already made to climate change related funds;
- c) *Re-balance the Governance of International Financial Institutions:* It will be necessary to ensure that institutional structures for governance and managing aid or investment funds do not emulate existing Western-dominated economic institutions, such as the World Bank, and IMF. These have created long-standing mistrust among developing nations. Not only would there need to be complete transparency and accountability; full and equal participation by all parties will be necessary.
- d) *Delivery through local engagement.* Funds could be delivered through a mechanism of local engagement; handing delivery of adaptation and mitigation projects directly to communities. This can create an economy of participation and trust as well as building capacity and keeping more economic benefits in the community. It will also be necessary to avoid large transaction costs. Local engagement could encourage private contracts with in-country firms rather than large international firms which are associated with the financial leakage of aid. A highly distributed system could, it must be recognised, result in a degree of vulnerability to misuse or fraud.
- e) *Creation of a learning network.* Local projects could be joined up through a learning network to capture the lessons that emerge as communities take action to shape their post-carbon society. The people and organisations involved in using these approaches on the ground could share their experiences through organised on-line debates or other culturally appropriate ways. Thus providing a wealth of examples of what it is possible for a community to do to live within the means of one planet. This can both feed into and learn from the experience of GCC nations by linking with communities who are using the same approaches in different contexts and sharing these lessons.

Concluding remarks

Would a just, post-carbon society hold individuals responsible for their over-consumption? If so, it would translate into a global climate framework based on the principles of shared responsibility, where a significant proportion of the absolute emission reductions are delivered by developed nations.

Despite the ethical arguments presented above, many consider it unlikely that a post-2012 agreement will address these issues sufficiently, weakening the attractiveness of participation to Southern states and driving down the ambitiousness of emission reduction targets. Complexity in the negotiating process coupled with historic and current economic imbalances, makes it highly unlikely that any agreement will be sufficient to prevent dangerous climate change. Absurdly, this would drive a further rift between the already huge North- South disparities.

A dialogue between the most significant Northern and Southern actors in the global economy, with ambitious targets and equity as its central theme may catalyse global cooperation. The AGCC argue that this could lead to a legally binding treaty that complements and invigorates the outcome of post-2012 negotiations. Running alongside the existing international climate framework, a constructive long-term partnership based on a shared policy space could be achieved through an India-Europe climate treaty. This movement could create the necessary momentum and encourage the participation of other states through the creation of an environment of trust, and attractive burden- and resource-sharing mechanisms.

Endnotes

- ¹ The concept of the tragedy of the commons was formalised by Garrett Hardin. See Hardin G (1968) 'The tragedy of the commons' *Science* 162: 1243–1248.
- ² Roberts J, Parks B (2007) *A climate of injustice: global inequality, North-South politics and climate policy* (Cambridge, Massachusetts: MIT Press).
- ³ *Ibid*
- ⁴ *Ibid*.
- ⁵ See <http://www.upinsmokecoalition.org/> [26 March 2008].
- ⁶ Donnelly J (2003) *Universal human rights in theory and practice* (Ithaca: Cornell University Press).
- ⁷ UNHCR (2006) *UNHCR Statistical Yearbook 2006: Trends in displacement, protection and solutions* (Geneva: UNHCR) <http://www.unhcr.org/statistics/STATISTICS/478cda572.html> [26 March 2008].
- ⁸ Biermann F, Boas I (2007) Preparing for a warmer world: towards a global governance system to protect climate refugees *Global Governance Working Paper No. 33*. <http://www.glogov.org/images/doc/WP33.pdf> [26 March 2008].
- ⁹ As described in Athanasiou T, Baer P (2002) *Dead heat: Global justice and climate change* (New York: Seven Stories Press).
- ¹⁰ <http://www.wfp.org/english/?ModuleID=137&Key=2802> [26 March 2008].
- ¹¹ Woodward D (2001) *The next crisis? Direct and equity investment in developing countries* (London: Zed Books).
- ¹² IEA (1 April 2004) IEA expresses concern about high oil prices as it celebrates its 30th anniversary (IEA, Paris).
- ¹³ IMF (2000) *The impact of higher oil prices on the global economy* (Washington DC: IMF) http://www.imf.org/external/pubs/ft/oil/2000/#III_B [18 March 2008].
- ¹⁴ World Resources Institute (2007) *Earth Trends* (Washington DC: WRI).
- ¹⁵ Calculation from International Energy Agency (IEA) Statistics Division (2006) *CO₂ Emissions from fuel combustion (2006 edition)* (Paris: IEA) <http://data.iea.org/ieastore/default.asp> [26 March 2008].
- ¹⁶ Wilkinson P, Smith K, Joffe M, Haines A (2007) A global perspective on energy: health effects and injustices *The Lancet* DOI: 10.1016/S0140-6736(07)61252-5.
- ¹⁷ WHO (2002) *Addressing links between indoor air pollution, household energy and human health*. Based on the WHO-USAID global consultation on the health impacts of indoor air pollution and household energy in developing countries (meeting report) (Washington DC: World Health Organization).
- ¹⁸ Lowe TD, Lorenzoni I (2007) Danger is all around: Eliciting expert perception for managing climate change through a mental models approach *Global Environmental Change* 17: 131–146.
- ¹⁹ Agarwal A, Narain S (1990) *Global warming in an unequal world* (New Delhi: Centre for Science and Environment).
- ²⁰ Simms A (1999) *Who owes who? Climate change, debt, equity and survival* (London: Christian Aid).
- ²¹ Jubilee Debt Campaign (2007) *Debt and Climate Change* (London: Jubilee Debt Campaign) <http://www.jubileedebtcampaign.org.uk/download.php?id=498> [25 March 2008].
- ²² *Ibid*.
- ²³ Srinivasan T, Carey S, Hallstein E, Higgins P, Kerr A, Koteen L, Smith A, Watson R, Harte J, Norgaard R (2008) The debt of nations and the distribution of ecological impacts from human activities *Proceedings of the National Academy of Sciences* 105(5): 1768–1773.
- ²⁴ Woodward D, Simms A (2006) *Growth isn't working* (London: nef)
- ²⁵ *Ibid*.
- ²⁶ Woodward D (2007) *The impact of macroeconomics on the climate adaptive capacity of African countries: A research framing study, with reference to Ghana and Ethiopia* [unpublished].

²⁷ Easterlin R (1974) Does economic growth improve the human lot?' in David P, Reder M (eds) *Nations and households in economic growth: essays in honour of Moses Abramovitz* (New York: Academic Press).

²⁸ Lyubormirsky S, Sheldon K, Schkade D (2005) Pursuing happiness: the architecture of sustainable change *Review of General Psychology* **9**: 111–131.

²⁹ Thompson S, Abdallah S, Marks N, Simms A, Johnson V (2007) *The European Happy Planet Index: An index of carbon efficiency and well-being in the EU* (London: nef).