

CLEARING THE AIR

MOVING ON FROM CARBON TRADING TO REAL CLIMATE SOLUTIONS



**Friends of
the Earth**

FULL REPORT

ABOUT THIS REPORT

This report has been prepared by Friends of the Earth England, Wales and Northern Ireland as part of its campaign for a fair, strong and binding international agreement to tackle climate change. The report is being distributed to decision makers, negotiators, the media and campaigners in advance of the 16th Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC) in Cancun, Mexico in November 2010.

The report outlines why carbon trading is not the solution to climate change and sets out some of the real solutions

for cutting greenhouse gas emissions and delivering climate finance. It calls on national governments to urgently dedicate time and resources to develop and implement these and other more viable, equitable and effective solutions to the climate crisis.

This full report is available online at: www.foe.co.uk/resource/reports/clearing_air.pdf.

A shorter, summary version of the report is also available at: www.foe.co.uk/resource/reports/clearing_air_summ.pdf.

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EXECUTIVE SUMMARY

The current obsession with carbon trading as a primary tool for tackling climate change is high risk, irresponsible and dangerous. It is a distraction from more viable, more equitable, more effective solutions for tackling greenhouse gas emissions and providing adequate finance to developing countries for tackling climate change and adapting to its impacts. Carbon trading is unreliable, unproven and burdens developing countries with unfair responsibility for tackling climate change. The barriers to reforming carbon trading are insurmountable in practice within the time we have available to avoid catastrophic climate change. In addition, carbon market offsets are not a legitimate source of climate finance, and cannot guarantee a predictable flow of finance to developing countries. This type of finance rarely supports genuine low-carbon development. The biggest financial beneficiary of carbon trading is the Northern carbon-trading industry.

Real solutions for climate change mitigation

- **Energy:** A global feed-in tariff programme with investment of US\$100 billion per year over 15 years would bring down the costs of renewable technologies to a universally affordable level. This would enable renewable energy to become “the default choice of the world as a whole.” Stronger regulations on energy efficiency combined with increased taxation on carbon and energy will also drive energy savings.
- **Agriculture:** The expansion of small-scale, sustainable agriculture has the potential to bring about a dramatic reduction in global greenhouse gas emissions through reduced fossil-fuel use in agriculture and carbon sequestration in plants and soils. It is also critical to tackle global demand for products associated with damaging intensive agriculture, including excessive consumption of meat and dairy products.
- **Forests:** Tackling emissions from deforestation and forest degradation necessitates measures to tackle the core drivers, most notably demand for agrofuels, meat and forest products. Improvements in forest governance are also essential, including protection of the rights of forest-dwelling communities and Indigenous Peoples and the extension of community forest governance. Funding must also be provided to incentivise the shift away from development based on forest destruction.
- **Industry:** To prevent polluting companies from using the threat of offshoring or so-called carbon leakage to avoid taking action, the starting point must be an agreement at the international level on the introduction of common standards on the use of best available technology. This will reduce carbon leakage or the threat of it, and will help drive innovation. This will in turn require a relaxation in intellectual property rights to ensure access to best available technologies.

Real solutions for climate finance

- **Financial Transaction Tax:** A new, global tax on cross-border financial transactions could generate additional government revenue of US\$400 billion, including US\$100 billion for climate finance. The tax is geared towards the global finance industry and would not affect the financial transactions of ordinary consumers.
 - **Tackling tax evasion:** Clamping down on tax avoidance in developed countries could provide significant additional government revenue. Tax avoidance in Europe is estimated at 2-2.25 per cent of European Gross Domestic Product (GDP): €236-266 billion in 2009.
 - **Redirecting fossil-fuel subsidies:** Global subsidies for the production and consumption of fossil fuels are estimated at US\$700 billion per year. Producer subsidies are mostly transfers from Northern governments to companies involved in fossil-fuel production and redirecting these would have minimal financial impacts on ordinary people in developed countries.
 - **Special Drawing Rights (SDRs):** New allocations of SDRs, a reserve asset created by the International Monetary Fund, could be issued at approximately US\$100 billion per year without leading to inflation.
 - **Carbon and energy taxation:** An EU-wide carbon tax and a graduated ‘Starter Tax’ in the United States could together bring in US\$200 billion per year. Making only a quarter of this available for climate finance could provide more than US\$50 billion per year. A levy on international aviation could bring in an additional US\$10 billion per year.
- A conservative estimate of the revenue-generating potential of these finance solutions indicates that they could provide new and additional climate finance for developing countries of at least US\$420 billion per year.**

1. INTRODUCTION

- The current obsession with carbon trading as a primary tool for tackling climate change is high risk, irresponsible and dangerous.
- This report brings together some of the key climate change solutions currently being sidelined by the attention on carbon trading.
- These solutions are compatible with climate justice and will deliver rapid and effective reductions in greenhouse gas emissions while driving transformational change towards more sustainable economies.

The starting point of this report is the conclusion of Friends of the Earth's previous report on carbon trading – that carbon trading hasn't worked, is seriously flawed, and the barriers to reform are insurmountable in practice within the time we have available to avoid catastrophic climate change. Furthermore, the current obsession with it as the primary tool for tackling climate change is high risk, irresponsible and dangerous. Today's attention on carbon trading is overheated and misplaced and, in Friends of the Earth's view, is driven largely by the governments of developed countries, in order to offset their emissions reduction responsibilities. Carbon traders and financial speculators are adding to the frenzy. This focus on carbon trading and its expansion is distracting us from the adoption of more viable, more equitable, more effective solutions for tackling greenhouse gas emissions and providing adequate climate finance to developing countries.

This report shows:

- **why carbon trading is not the solution to climate change**
- **that many of the real solutions are already available.**

Many of these solutions are sitting in the toolbox largely untouched. As highlighted by the British New Economics Foundation (nef), "we are already surrounded by a sleeping architecture of alternatives."¹ Many of these policies and measures have been developed, scrutinised and advanced for decades, and all that is needed to make them a reality and to start making real progress in the struggle to tackle climate change is the political willingness to use them.

Of critical importance is that none of these solutions is a silver bullet which alone will cut carbon emissions quickly and provide international finance options. Tackling climate change requires a package of tools and policies. There is and will be no easy alternative to weaning the global economy off its addiction to fossil fuels and the unsustainable industrial and agricultural activities which this addiction has facilitated.

The report brings together some of the key climate change solutions, currently being drowned out by the clamour for carbon trading, which Friends of the Earth believes should be prioritised as a matter of urgency. Not all solutions have been included and this report is not intended to set out a comprehensive

vision of everything that must happen to aid the transition to a low-carbon world. Rather, we hope to give a broad picture of some of the key solutions available with the aim of shifting the attention of global policy makers, the media and public away from a dangerous obsession with carbon trading and onto credible, equitable and effective solutions to climate change. This is an essential step if we are to hope to make real progress on tackling emissions, financing developing country action and reducing our chances of avoiding dangerous climate change.

This report draws on the longstanding experience of Friends of the Earth England, Wales and Northern Ireland as an environmental justice campaigning organisation. We have been campaigning for almost 40 years to highlight the problems of unsustainable energy use and in recent decades on climate change, to identify solutions, and to mobilise public and political action to address them. The report also draws extensively on the rich experience and analysis of our sister organisations in Friends of the Earth International, the largest grassroots-to-global federation of environmental justice campaigning organisations in the world. Finally, we have sought to incorporate analysis and ideas from many policy institutions, think tanks, and multilateral institutions like the United Nations, as well as key actors in the climate justice movement.

1. INTRODUCTION

A number of criteria were used to select the solutions featured in this report. These are:

- **Compatible with climate justice:**

Solutions must recognise the responsibility of the rich world for creating the problem of climate change and its moral and legal obligation to act first and fastest to solve it, as enshrined in the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol. Solutions must also be socially progressive for poor people in both the global North and the global South.

- **Transformational:** Solutions must contribute to bringing about the bigger changes needed to create more sustainable and equitable economies with reduced consumption and more equal distribution of resource use. They must not lock in or make worse the core drivers of climate change, such as fossil-fuel use.

- **Rapid and effective:** Solutions must deliver the urgent changes needed at the pace required for the world to have a real chance of avoiding the worst impacts of climate change.

The solutions are split into two groups: solutions for climate change mitigation, to bring down greenhouse gas emissions as quickly and effectively as possible, and solutions for climate finance, to support developing countries in taking action on climate change and adapting to its unavoidable impacts. However, some solutions included in one objective will also have beneficial impacts for the other. For example, redirecting fossil-fuel subsidies will not only raise money for climate finance but will also help to reduce emissions.

Before the solutions are discussed, we also include a brief summary of the main problems with carbon trading as a climate mitigation mechanism and a source of climate finance, as well as key principles for ways in which we go about tackling greenhouse gas emissions and sourcing and delivering climate finance.

Key shortcomings and potential hazards relating to these solutions are flagged throughout the report, and ideas about how to minimise them are included.

2. BACKGROUND ON SCIENCE AND RESPONSIBILITY

- Rich countries have overwhelming responsibility for causing climate change and have a legal and moral obligation to act first and fastest to reduce their emissions and provide finance to developing countries for low-carbon development and adaptation to climate change.
- Action by developed countries to reduce their emissions and deliver climate finance to developing countries has been grossly inadequate.
- Developed countries are pushing for the expansion of carbon trading globally as a means of avoiding their emissions-reductions and climate-finance commitments.

The science of climate change is well understood. Despite the best attempts by climate sceptics, many in receipt of direct financial support from the fossil-fuel industry,² to discredit it, there still exists overwhelming consensus among climate scientists that climate change is happening, that it is man-made and that it is dangerous because it presents such a risk of devastating economic, social and environmental impacts. Where uncertainty exists, it is only over how the impacts will unfold rather than whether they will happen. In particular, there is a lot of uncertainty around irreversible and feedback impacts – impacts of climate change that will themselves affect the pace at which further change occurs. This uncertainty presents a stronger than ever argument in favour of urgent global action to dramatically reduce global greenhouse gas emissions and achieve the lowest possible risk of catastrophic climate change.

Failure of global action to cut emissions

The current reality of global action on climate change is, however, disturbingly far from this precautionary path. Since agreement on the United Nations Framework Convention on Climate Change (UNFCCC) in 1992, the landmark environmental treaty which set in place an agenda and key principles for global action on climate change, global greenhouse gas emissions have continued to steadily increase.

The first recorded decrease in global carbon emissions since the signing of the Convention took place in 2009³ only because of the contraction in global production resulting from the economic crisis.⁴

This failure to stem the growth in global greenhouse gas emissions, let alone bring about the scale and pace of reductions necessary to have a reasonable chance of avoiding catastrophic climate change, is largely a result of inaction by the rich developed countries. These countries, indentified by the UNFCCC as Annex I countries and including the United States, the member states of the European Union, Canada, Australia, Russia and Japan, have failed both to deliver adequate reductions in their greenhouse gas emissions and to provide adequate finance to developing countries, as called for by the UNFCCC.

China has recently exceeded the United States in terms of national annual CO₂ emissions. However, such statistics mask important variables such as the amount of emissions per capita, which remain significantly higher in rich countries like the US than in emerging economies like China. China's average per capita carbon dioxide emissions from all sources of fossil-fuel burning and consumption are around one quarter of the United States, at 4.9 tons compared to 19.2 tons.⁵ Overall national emissions statistics also mask the significant progress that has been made by countries like China in establishing policies to tackle climate change. For

example, China has established nationwide energy-efficiency goals that aim to avoid over three times more greenhouse gas emissions by 2020 than the United States pledged at the Copenhagen climate talks in 2009.⁶ This is not to suggest China shouldn't do more, it could and it should, but rather to point out that China is not the climate-change bogeyman that Western leaders like to portray.

Even more importantly, the problem of climate change is a result of accumulation of greenhouse gas emissions in the atmosphere. Richer, developed countries have produced three quarters of the total emissions that have accumulated in the atmosphere despite only representing 15 per cent of the world's population.⁷ Historically, fossil fuel-based industrial development has contributed significantly to the higher relative levels of national wealth and infrastructure in developed countries, which of course is also based on the exploitation of resources and labour from developing countries under colonial rule and the continuation of unfair international economic relations in the post-colonial world.

The primary historical responsibility of rich countries in creating the problem of climate change, combined with the greater resources they have available to tackle it as a result of economic advantages gained from past fossil-fuel use, are enshrined in the UNFCCC principle of 'common but differentiated responsibility and capacity to act' or

2. BACKGROUND ON SCIENCE AND RESPONSIBILITY

Box 1. Common But Differentiated Responsibility (CBDR)

The principle of CBDR is central to the United Nations Framework Convention on Climate Change (UNFCCC). Common to many multilateral environmental agreements, this principle recognises the historical differences in the contributions that developed and developing countries have made to global environmental problems, and the differences in their respective economic and technical capacities to tackle them. In the case of climate change, the UNFCCC recognises that:

1. The largest share of historical and current global emissions of greenhouse gases originated in developed countries.

2. Per capita emissions in developing countries are still relatively low.
3. The share of global emissions originating in developing countries will grow to meet social and development needs.

It hence concludes that the developed countries which are Parties to the Convention should take the lead in combating climate change and its adverse effects.

UNFCCC, 1992: http://unfccc.int/essential_background/convention/background/items/2853.php.

the very existence of low-lying small island states.⁹ As a result, more than one hundred countries including many African countries and the Alliance of Small Island States (AOSIS) are calling for the global community to aim for a 1.5 degree target. The World People's Conference on Climate Change and the Rights of Mother Earth held in Bolivia in May 2010 and attended by 35,000 people from 140 countries, including 56 national government delegations, called for a 1 degree target.¹⁰

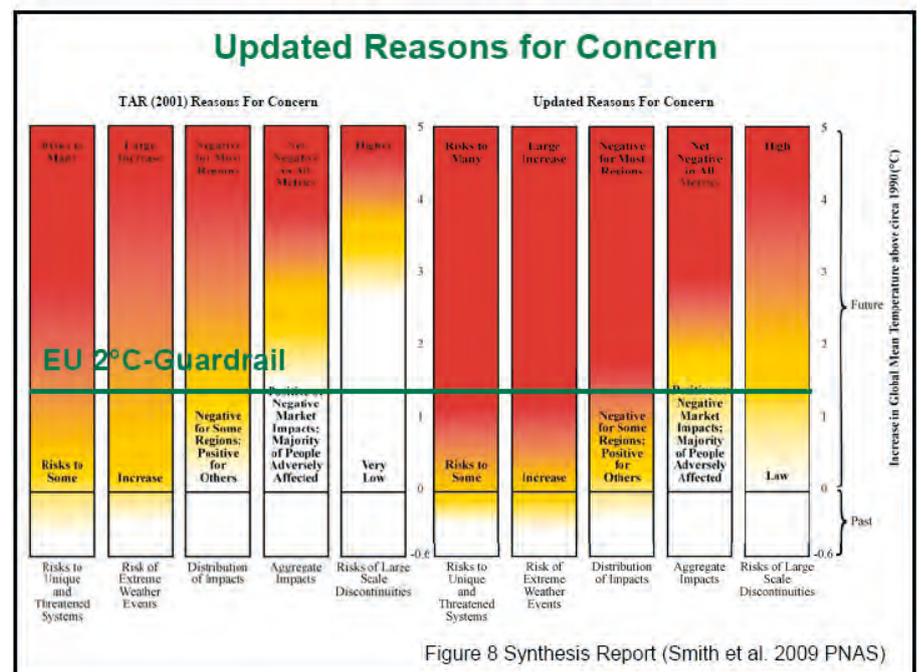
The science of climate change continues to move, with most changes indicating a greater threat of catastrophic events. The 'burning embers' diagram below shows climate impacts for five different categories from the original IPCC report in 2001 (on the left) and updated in 2009 (on the right). Red corresponds to 'substantial or severe risks', and yellow to 'moderately significant risks'. The diagram indicates two major changes from the 2001 to the 2009 assessment: the risks of extreme weather events are now

'CBDR' (see Box 1). The Convention requires all countries to take decisive action on climate. However, recognising the CBDR principle and the fact that developing countries still have to address pressing social development needs, rich countries are committed under the Convention to acting first and fastest to reduce their emissions. They are also committed to compensating developing countries by funding the 'incremental costs' of their action to develop low-carbon economies and adapt to the unavoidable impacts of climate change.

dangerous – it would mean highly destructive impacts for significant parts of the world's population, including water scarcity, hunger and displacement for millions in Africa, as well as threatening

The reality of the climate science

In 2007 the United Nations' Intergovernmental Panel on Climate Change (IPCC), the leading scientific body for the study of climate change and its impacts, concluded that failing to prevent a 2 degree Celsius increase in global temperature above pre-industrial levels will lead to mass extinctions of species, and put millions of people globally at risk from crop failures, water shortages, flooding and homelessness.⁸ A rise of 1.5 degrees is regarded as



considered 'substantial or severe' at 1.5 degrees above pre-industrial levels; and risks of 'large-scale discontinuities', i.e. dangerous tipping points which could give rise to irreversible climate change, are now considered moderately significant below 2 degrees.¹¹

In terms of overall levels of emissions in the atmosphere, climate research suggests that a concentration of 450 parts per million (ppm) by volume of carbon dioxide equivalent (CO₂e) has a 50 per cent risk of exceeding 2 degrees.¹² In fact it is argued by a growing body of climate scientists that we have already exceeded what can be considered a safe concentration of greenhouse gas emissions in the atmosphere. According to Hansen et al: "paleoclimatic evidence and ongoing global changes imply that today's CO₂, about 385 ppm, is already too high to maintain the climate to which humanity, wildlife and the rest of the biosphere are adapted."¹³ Based on these assertions, growing numbers of campaigners are calling for an overall reduction in the concentration of greenhouse gas emissions in the atmosphere to 350 ppm,¹⁴ and others are calling for still further reductions to 300 ppm in order to increase the chances of avoiding catastrophic climate change.¹⁵

Finally, it is crucial to note that overall reductions in emissions need to happen urgently. Research by the UK's Tyndall Centre for Climate Change Research suggested that even to prevent overall emissions exceeding 450 ppm requires global CO₂e emissions to peak in 2015, less than five years from now, and to fall by four per cent per year after that until 2050.¹⁶

What constitutes a fair distribution of this urgent global action to reduce emissions is still under negotiation in the UNFCCC, but even a very conservative reading indicates that the action so far committed to by rich countries falls far short of what is needed for the world to have a reasonable chance of avoiding catastrophic climate change. One

body of research summarised by IPCC authors suggested that 450 ppm volume of CO₂e would require a combination of 25-40 per cent reduction in emissions from developed (Annex I) countries and a 15-30 per cent reduction below the business-as-usual baseline for developing (non-Annex I) countries by 2020.¹⁷

This distribution of effort is challenged by developing countries and climate campaigners as not reflecting the historical responsibility of rich countries for causing climate change. However, so far the rich countries' commitments fall short even of these insufficient targets. The emissions reductions committed by Annex I countries under the Copenhagen Accord, the political agreement rushed together by an exclusive group of countries in parallel with the COP 15 climate negotiations in

2009, add up to only a 12-18 per cent reduction on 1990 levels by 2020¹⁸. Furthermore, loopholes in the current negotiating text to implement the Kyoto Protocol after 2012, if combined with these targets, would actually allow rich countries to increase their greenhouse gas emissions over the next decade.¹⁹

According to recent calculations by the Institute of Physics, if the targets in the Copenhagen Accord are not revised the world could face a truly catastrophic temperature increase of up to 4.2 degrees by 2100.²⁰ A dramatic step change in the level of rich countries' climate change commitments, backed up by urgent action to make deep emissions reductions a reality now, not in 2020 or 2050, is more pressing than ever if we are to avoid the worst impacts of climate change.

Box 2. What happens if we fail?

The potential impacts of climate change are difficult to assess because of the uncertainty that exists about how climate change will manifest itself and the complex interplay of the other environmental, social and economic factors involved. However, the assessment by the Global Humanitarian Forum established by UN Secretary General Kofi Annan, based on IPCC climate scenarios, indicates truly devastating impacts for many people across the world.

Below are some key findings of the Forum's research:

- By 2030, the average number of weather-related disasters recorded each year will be about three times higher than the average during 1975-2008. If these projections prove correct, weather-related disasters due to climate change could affect around 350 million people.
- Within 20 years, the number of hungry people as a result of climate change is projected to almost double to 75 million.

- In some parts of Africa climate change is expected to reduce food yields by up to 50 per cent by 2020.

- In 2030, approximately 310 million people are expected to suffer from health consequences related to more pronounced environmental degradation and temperature increase due to climate change. This, in turn, is projected to increase disease levels to a point where half a million people could die from climate-related causes per year.

- By 2030, over 20 million fewer people would live in poverty in a world without climate change.

- By 2030, hundreds of millions of people are expected to be hit by deteriorating water quality and availability due to climate change.

The Anatomy of a Silent Crisis, Global Humanitarian Forum, 2009: <http://www.eird.org/publicaciones/humanimpactreport.pdf>.

2. BACKGROUND ON SCIENCE AND RESPONSIBILITY

Failure on climate finance

It is important to recognise the limits of focusing on the financial aspects of climate change – both the costs of failing to avoid the worst impacts and the costs of acting to avoid them. There is a need for a mix of approaches including laws, standards, regulations and cultural change to tackle the problem, as well as finance, and some of these will be explored later in this report. However, climate action in developing countries is contingent on climate finance because of the critical humanitarian and development priorities that they also have to deal with. The UNFCCC itself recognises that the first priority of developing countries is poverty reduction. Alongside the failure of rich countries to commit to, let alone start delivering, adequate global action on greenhouse gas emission reductions has been an equally dismal failure to commit to the delivery of adequate finance to support action by developing countries on climate mitigation and adaptation. In 2009, 17 years since the adoption of the UNFCCC, developed countries had channelled less than US\$3 billion through the Convention's mechanisms to finance climate measures in developing countries.²¹

Because of the lack of progress following the signing of the UNFCCC, in 2007 the signatory countries agreed to the Bali Action Plan, which included addressing the provision of financial resources for climate action by developing countries. The UNFCCC has not yet determined the exact scale of the financing necessary as part of any agreed outcome under the Bali Action Plan, but various estimates have been put forward for the amount of finance needed by developing countries to develop in a climate-constrained world and adapt to climate change.

At the lower end of the estimates is that put forward by the European Union, which argued in 2009 that transfers of €100 billion per year by 2020 would

be sufficient for developing countries' mitigation and adaptation needs.²² The International Energy Agency estimates that US\$197 billion is needed annually by developing countries in order to stabilise greenhouse gas emissions at 450 ppm CO₂e, with greater amounts required for a target of 350 ppm.²³

Calls from developing country parties in the UNFCCC negotiations are significantly higher. The G77 and China, the overarching grouping of developing countries in the UNFCCC negotiations, has estimated nearly three times more is needed, calling for transfers of at least 1.5 per cent of Annex I Gross Domestic Product (GDP) per year by 2020 – around US\$600 billion per year.²⁴ However, China itself has said that it will pay for its own mitigation. This figure is supported by the United Nations Department for Economic and Social Affairs (UN-DESA) which has called for a new global Marshall Plan with transfers to developing countries of US\$500-600 billion per year within this decade.²⁵ The Africa Group of countries has called for long-term finance equivalent to 5 per cent of developed countries' GDP per year,²⁶ while the call for the largest financial transfers so far comes from the financing working group of the World People's Conference on Climate Change and the Rights of Mother Earth, with transfers of at least 6 per cent of developed countries' GDP, arguing this is equivalent to the amount spent by developed countries on national defence and security.²⁷

What is it worth?

Box 3 and Figure 1 opposite compare these estimates of the scale of the climate finance needed to support developing countries in tackling climate change and adapting to its impacts with other key financial statistics to give a sense of the scale of the financial commitment that is necessary.

The task of pinning down the exact scale of the finance needed is a difficult one, particularly as it is a moving target, with the overall amount likely to increase the longer action to tackle global greenhouse gas emissions is delayed. Conversely, the faster progress is made in tackling climate change, the less finance that will likely be needed overall. In any case, it is clear that the financing committed so far by developed countries falls at the most conservative end of the estimates made, and there are already major doubts about whether even the amounts committed so far will actually be delivered.

In the Copenhagen Accord, developed countries pledged new and additional short-term financing worth US\$30 billion for 2010-2012 for mitigation and adaptation, and to mobilise US\$100 billion per year by 2020.³⁴ Already the promises of short-term finance have been exposed as largely empty, with many developed countries restating or renaming old commitments, or redirecting finance previously committed as overseas development aid. Essentially, they are taking money from finance earmarked for pressing social development needs like health and sanitation in poor countries and transferring it to climate funds in order to be seen to be delivering on their commitments.³⁵ For example, of the US\$800 million per year (£1.5 billion total) pledged by the UK government in Copenhagen for fast start climate financing, portions were previously promised by former Prime Minister Gordon Brown in 2007 and all the

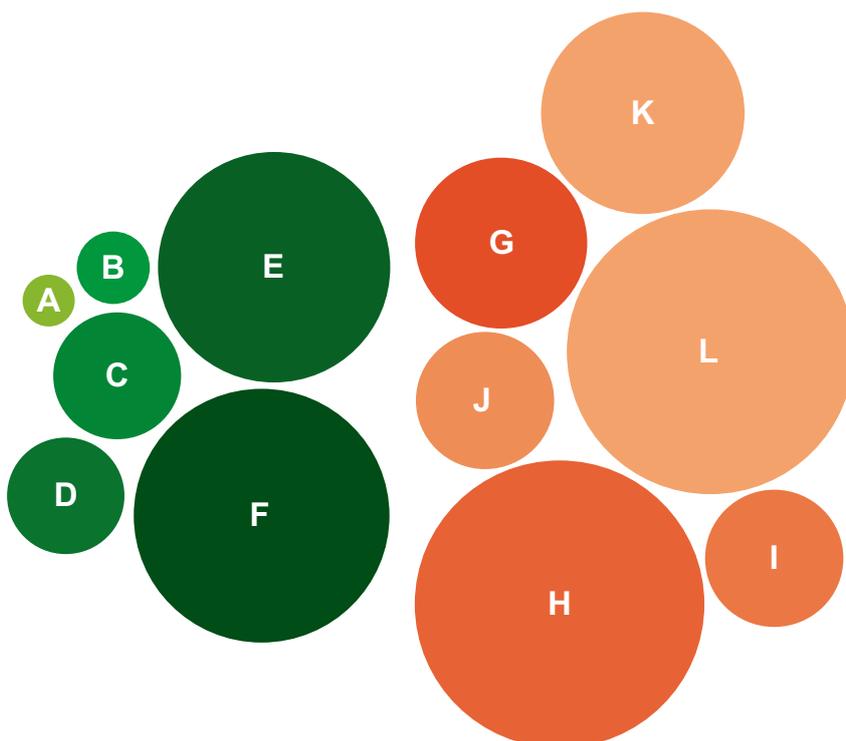
Box 3. Comparison of estimates of developing country climate-finance needs with selected developed country public expenditure

Estimates of developing country climate-finance needs (amounts are per year by 2020):

- A** European Union: €100 billion
- B** International Energy Agency: US\$197 billion
- C** G77+China: 1.5 per cent of Annex I GDP, equivalent to about US\$600 billion
- D** United Nations Department for Economic and Social Affairs: US\$500-600 billion
- E** Africa Group: 5 per cent of Annex I GDP (equivalent to roughly US\$2,000 billion)
- F** Cochabamba Peoples Agreement: 6 per cent of Annex I GDP, equivalent to about US\$2,400 billion

Estimates of selected developed country public expenditure:

- G** Global bank and hedge fund profits before the recession: US\$1,100-1,400 billion per year²⁸
- H** Global fiscal stimulus package proposed in 2009 in response to the recession: US\$3,100 billion²⁹
- I** US unconditional bank bail-out following the financial crisis: US\$700 billion³⁰
- J** Annual global fossil-fuel subsidies: US\$700 billion³¹
- K** Worldwide military expenditure in 2009: US\$1,531 billion³²
- L** Cost of the Iraq war to date: US\$3,000 billion³³



funding comes from the UK's existing commitment to reach an overseas development aid contribution of 0.7 per cent Gross National Income by 2013.³⁶

The task of identifying potential sources for the US\$100 billion per year in mid- to long-term financing has been delegated to the high level Advisory Group on Climate Finance. The group, launched by UN Secretary General Ban Ki-moon, is technically outside the official UNFCCC negotiations because it is seen as linked to the Copenhagen Accord, which was noted but not agreed to by the COP 15 meeting.

The rise of carbon trading as a climate 'solution'

In the hope of avoiding a large part of their financing- and emissions-reductions obligations while being seen to take action, developed countries have made carbon trading the central pillar of UN and national climate mitigation policy. Debates on market mechanisms dominate discussions in the UN climate negotiations, with proposals on the extension of carbon trading mechanisms globally and into new areas like forest protection put forward by a number of countries, most notably the European Union, the United States and Japan. Similarly, the current model for delivering climate finance to developing countries being advanced by the US, Europe and others centres on the carbon market. In its proposal for mid-term financing of €100 billion per year by 2020, set out in 2009, the European Commission envisaged around 40 per cent would come from the international carbon market, and 20-40 per cent from developing countries themselves, and hence likely a significant proportion of this through the carbon market. Only the remainder – as little as 20 per cent – would come from international public finance from developed countries, and some of that would likely to be in the form of loans rather than grants.³⁷

2. BACKGROUND ON SCIENCE AND RESPONSIBILITY

In contrast to the insufficient commitments to climate finance by some Annex I countries, private actors such as banks and big transnational companies are investing strongly in the carbon finance sector. Taking advantage of the global urgency to address climate change, more and more private financial actors are joining a global market that is already worth US\$126 billion³⁸ and which has been predicted to grow to a market value of US\$3,100 billion per year by 2020.³⁹

The major problems and limitations of carbon trading as a means of tackling climate change and financing low-carbon development are increasingly recognised. Civil society groups and social movements have been joined by specialists, like former NASA scientist and climate change specialist James Hansen and researchers in the multinational investment bank Deutsche Bank, as critics of carbon trading. Yet in spite of this growing criticism and the growing evidence of carbon trading's weaknesses and failures as a policy tool – to be recapped later in this report – it continues to be advanced by rich countries in the UNFCCC negotiations as the silver bullet solution for tackling climate change and providing climate finance.

The reasons why carbon trading is receiving so much attention from rich-country policy makers at the expense of other, more effective policy tools are clear:

1. Carbon trading allows developed countries to avoid necessary domestic emissions reductions:

The offsetting mechanism, which is part of all existing and planned carbon trading schemes in developed countries, is a major loophole through which they can avoid making their fair share of domestic emissions reductions, which are necessary (in addition to reducing growth of emissions in developing countries) to avoid catastrophic climate change. Through carbon trading, rich countries justify inaction on climate change at

home by arguing that they are paying for action to reduce emissions abroad. Expanding carbon trading opportunities globally, for example through the establishment of new carbon trading mechanisms in the UNFCCC, is thus a means for developed countries to undermine the principle of Common But Differentiated Responsibility (CBDR) that is central to the UNFCCC.

By participating in the global carbon market to legitimise inaction domestically, developed countries are placing an unfair burden on developing countries to tackle the problem of climate change, which for the most part they have not caused. This undermining of CBDR is very clearly the objective of the sectoral trading proposals currently under consideration in the UNFCCC. Under these proposals, covering particular global industrial sectors, developing countries would have to pay a portion of the costs for emissions reductions before becoming eligible for climate finance from developed countries.

2. Carbon trading provides a new growth opportunity for finance sectors in developed countries following the global economic crisis and this is a higher priority than fair and effective carbon reduction for some governments:

In the wake of the worldwide financial crisis, the global carbon market represents a significant new growth opportunity to international financial centres like the City of London and Wall Street, with global financial speculators already very active in the existing carbon market centred around the European Union Emissions Trading Scheme (the EU ETS).

According to a recent study, in 2009 there were 96 funds investing in emissions reduction projects with a total capitalisation of €10.8 billion. The biggest class of funds were private (48 per cent, compared with 29 per cent public funds), bought credits directly

(52 per cent compared with 23 per cent of funds investing in projects through the UN's Clean Development Mechanism and Joint Implementation projects), and nearly half invested solely for financial, i.e. speculative or profit-making, purposes rather than with the aim of complying with emissions trading regulations (42 per cent compared to 55 per cent).⁴⁰

3. Carbon trading helps developed countries avoid additional public spending to tackle climate change, which is given lower priority by Treasuries than other spending areas:

As well as presenting a new financial and economic opportunity for developed countries with strong finance sectors, the extension of carbon trading as the principle means for providing climate finance to developing countries allows developed countries to avoid having to provide this finance from public sources. Levying revenue from national treasuries to pay for climate mitigation is likely to be harder in the current global economic climate, in which trillions of dollars of public funds have just been spent bailing out the banks. Little progress was made on climate finance from public sources before the financial crisis. With many countries across the developed world implementing severe cuts in public spending to reduce national deficits resulting from the bail-outs, it has become harder for them to justify finding additional finances to support climate action in developing countries.

Finance from the carbon market does not legitimately count as climate finance for developing countries, when it results from offsetting the emissions-reductions commitments of developed countries. However, characterising the carbon market as a source of climate finance allows developed countries to avoid ensuring that their financing pledges are delivered with public funds.

4. Carbon trading is claimed to incentivise emissions reductions in a way that is most cost effective for developed countries: Proponents of carbon trading argue that trading allows emissions cuts to be made in the most cost-effective way because the flexibility provided allows emissions reductions to be made where it is cheapest to do so. Thus emitters who find it easier and therefore cheaper to reduce their emissions will do so, and then sell their excess allowances to emitters that find it harder and thus more expensive. It is argued that the overall effect is a lower aggregate cost for emissions reductions across the emitters covered by the scheme. But the UK's Committee on Climate Change has warned that such an approach avoids making necessary structural changes in the energy sector. As carbon reduction costs will escalate in later years, the short-term costs may be lower, but the overall cost of transition may be much higher.

Right: carbon trading lets developed countries avoid necessary domestic emissions cuts: incinerator in Camden, New Jersey, USA.



3. MITIGATION

Key principles for climate change mitigation

- It is critical that the transition to a low-carbon economy, while driven by the need for environmental justice, does not in itself lead to further economic and social injustices.
- Policies and measures to tackle greenhouse gas emissions and support economic transition must ensure jobs and decent work, protect low-income groups, and respect and promote the rights of local communities and Indigenous Peoples.
- Participation of affected workers and communities in developing solutions, and transparency, accountability and democratic control over decision-making are also absolutely crucial.

Mitigation and economic justice – the need for a Just Transition

As explored in more detail later in this report, tackling climate change will require significant economic restructuring in order to move away from the unsustainable, fossil fuel-based industrial, agricultural and transport processes on which many countries rely, towards more sustainable consumption and production systems. Any such large-scale economic restructuring carries with it the risk of significant negative economic and social impacts on workers, their families and the communities in which they live. While the expansion of industrial production in the developing world is creating jobs and economic wealth for some, it is also having very destructive social and environmental impacts, including increased pollution. The contraction of industrial production in many parts of the global North over the last 30 years has also had significant social and economic impacts, with many communities left jobless and increasingly impoverished and excluded.

It is critical that the transition to a low-carbon economy, while driven by the need for environmental justice, does not in itself lead to further economic and social injustices. This potential for harmful knock-on effects has been identified by many trade unions around the world. As highlighted by the British

Trades Union Congress (TUC): “Such injustice cannot become a feature of environmental transition. Not only would this be morally wrong and socially damaging but it would undermine the credibility of the transition itself and could slow or even halt this vital and urgent shift.”⁴¹ For this reason, it is now widely accepted that there needs to be a ‘Just Transition’ to a low-carbon economy.

Key principles for climate mitigation in order to ensure this Just Transition include:

- **Ensuring jobs and decent work:** It is essential job losses as a result of the environmental transition are minimised, job creation opportunities maximised, and movement of jobs to new sectors does not occur at the expense of decent work and decent terms and conditions for workers. Pay, conditions, and health and safety for workers should not deteriorate as a result of the move to a low-carbon economy. This will require a combination of:
 - adequate industrial policy at the local, national and regional level
 - well-planned policies and frameworks to protect and support workers and communities who are directly affected by the transition
 - increased provision for education, training and re-skilling to maximise the potential for workers and communities to benefit from the transition.

- **Protecting low-income groups:**

Policies and measures to achieve climate mitigation should not increase the economic disadvantage of low-income groups. Additional policies must be adopted to mitigate any potential for environmental measures to create further economic and social injustice.

Mitigation and human rights – protecting the rights of local communities and Indigenous Peoples

As we are already seeing with destructive offsetting projects, REDD (Reducing Emissions from Deforestation and Forest Degradation) projects, and other activities relating to the global carbon market, there is a risk that supposed ‘solutions’ to climate change have highly destructive social and environmental impacts. To be both just and effective, tools and measures adopted in the pursuit of climate change must respect and promote the rights of local communities and Indigenous Peoples, and must not adversely affect their rights and benefits pursuant to relevant international Conventions and Recommendations. Mitigation tools must adhere to the principles of relevant international agreements and declarations, including the United Nations Declaration on the Rights of Indigenous Peoples and the International Covenant on Civil and Political Rights.



Simon Rawles

Above: climate mitigation must respect the rights of Indigenous Peoples and local communities: members of the Makushi tribe, Iwokrama forest, Guyana.

Key principles are:

- **The right to self-determination and self-government:** Policies and measures must acknowledge Indigenous Peoples' right to self-determination, including the right to autonomy or self-government in matters relating to their internal and local affairs, as well as their right to participate fully, if they so choose, in the political life of the State.
- **Free, prior and informed consent:** Policies and measures must be based on the free and informed consent of all affected communities and Indigenous Peoples prior to the approval of any project affecting their lands or territories and other resources.
- **The right to management and customary use of natural resources:** Indigenous peoples have the right to determine and develop priorities and strategies for the development or use of their lands or territories and other resources. Mitigation policies must protect and encourage customary use of natural resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements.

● **Land tenure issues and land rights:**

Mitigation policies must recognise the rights of Indigenous Peoples and other local communities to the lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired.

- **The right to redress:** All policies must support the right of redress of Indigenous peoples and local communities, by means that can include restitution or, when this is not possible, just, fair and equitable compensation, for the lands, territories and resources which they have traditionally owned or otherwise occupied or used, and which have been confiscated, taken, occupied, used or damaged without their free, prior and informed consent.

Mitigation and good governance – transparency, accountability and participative decision-making

Good governance is critical to achieve the social, economic and human-rights protections outlined above; to ensure climate mitigation tools are effective; and also to ensure the potential positive benefits for communities and society of tackling climate change are maximised. Unless policies to tackle climate change are nationally and locally appropriate and devised with adequate participation from those who are affected by them, then not only are they likely to be less effective, there is also a very high risk of creating a whole new set of problems that the global community will have to solve. The participation of affected workers and communities in the development of policies and measures to tackle climate change, and transparency, accountability and democratic control over decision making are absolutely essential in the advancement of global climate solutions and ensuring that the transition to a low-carbon world is a just one.

3. MITIGATION

Problems with carbon trading as a tool for cutting greenhouse gas emissions

- Carbon trading is unreliable, unproven and burdens developing countries with the responsibility for tackling climate change.
- Carbon trading could make tackling climate change more expensive overall.
- Carbon trading is a tax on consumers to pay polluters to pollute, and actually incentivises increased pollution for profit.
- The barriers to reforming carbon trading are insurmountable in practice in the time we have available to avoid catastrophic climate change.

This section provides a short overview of the key problems with carbon trading as a policy tool for tackling greenhouse gas emissions. It summarises and updates the arguments made in Friends of the Earth's previous report, *A Dangerous Obsession – The evidence against carbon trading and for real solutions to avoid a climate crunch*.⁴²

Carbon trading burdens developing countries with the responsibility for tackling climate change

Although carbon trading doesn't, in theory, have to involve offsetting, all existing and planned carbon trading schemes in developed countries are based on substantial offsetting of emissions reductions, as are all of the proposals for the expansion of carbon trading currently on the table in the international climate negotiations in the UNFCCC. Instead of developed countries undertaking their fair share of global emissions reductions, offsetting is essentially an escape hatch, allowing them to purchase credits from projects in developing countries which are supposedly reducing greenhouse gas emissions.

Discussions are currently underway in the climate negotiations as to what a fair division of the remaining global carbon budget would look like. This budget corresponds to the volume of

greenhouse gas emissions that can still be emitted globally, while keeping overall emissions in the atmosphere below levels considered to present an unacceptable risk of catastrophic climate change. As explored earlier, the remaining global carbon budget compatible with a reasonable chance of avoiding dangerous climate change is in all likelihood extremely small.

If the historical responsibility of developed countries for the problem of climate change is fully taken into account as fairness and justice necessitate, then they will have to deliver dramatic domestic emissions reductions over the next decade, whereas every carbon offset they buy further increases their unfair use of the remaining global carbon budget. Offsetting shifts the burden of climate mitigation from the developed countries which are primarily responsible for the problem of climate change, to developing countries whose basic development needs – expanding energy access for improving living standards and access to public services like healthcare, water and sanitation – necessitate that they continue to increase their emissions for longer. Offsetting therefore undermines the equitable sharing of the remaining global carbon budget.

Carbon trading is unreliable and unproven

Carbon trading is largely unproven as a tool for driving sufficient reductions in carbon dioxide emissions. The European Union Emissions Trading System (EU ETS), the world's largest emissions trading scheme, has completely failed to drive emissions reductions at the pace necessary for Europe to contribute its fair share of emissions reductions.

Under the first phase of the scheme (2005-07), EU-wide emissions actually increased by 38 million tonnes CO₂e.⁴³ While declines in emissions covered by the scheme have been reported under the current, second phase of the scheme (2008-12), it is now widely acknowledged that the EU ETS is failing to deliver adequate incentives for emissions reductions and investment in new technologies by highly-polluting European industries. Overall emissions covered by the EU ETS showed a drop of 11.2 per cent⁴⁴ in 2009, but a significant proportion of this decline was due to the drop in industrial production across Europe brought about by the economic crisis, rather than due to any strong incentives provided by the EU ETS. Announcing the decline in 2009 emissions, the EU's Climate Action Commissioner Connie Hedegaard acknowledged: "We should not hide that the recession has significantly weakened the price signal".⁴⁵

Overall, the failure of the EU ETS to deliver sufficient emissions reductions across Europe is often argued to be a political failure – with the European Commission and EU member states consistently failing to set the cap low enough on emissions covered by the scheme. This has in turn resulted in a severe excess of pollution permits in the scheme and very little incentive for companies on the receiving end of those permits to reduce their emissions.

However, this political failure is in turn closely related to the complexity and opacity of the carbon trading mechanism itself, which in the case of the EU ETS has allowed polluting industries covered by the scheme to get away with highly successful lobbying, convincing the European Commission and European member states to grant them excessive quantities of free pollution permits.

The failure of the EU ETS is acknowledged by growing numbers of institutions and actors within Europe, who are now calling on European governments to enact new policies to tackle emissions from polluting industry. In the UK, the highly respected Committee on Climate Change confirmed in 2009 that it lacked confidence in the ability of the EU ETS to deliver the required low-carbon investments in the energy sectors covered by the scheme through the 2020s. It recommended that “a range of options [such as regulation and taxes] for intervention in carbon and electricity markets should be seriously considered.”⁴⁶

Globally, there is only one example where emissions trading has been even moderately effective as a mechanism for tackling pollution, namely the sulphur dioxide trading scheme in the US. However, the context and circumstances for this scheme were very different to the current global fight against climate change. The technologies needed to tackle sulphur emissions were already widely available and affordable, the

scheme did not allow for offsetting, and there were very few sources to examine, which made direct monitoring of the emissions possible, whereas emissions in carbon trading schemes are calculated by proxy. Furthermore, by 2007 the EU achieved a greater reduction of sulphur dioxide emissions through direct regulation (71 per cent), than did the US through cap and trade (43 per cent).⁴⁷

Given the urgency of the climate problem, it is clearly inadvisable to rely on complex and unproven mitigation tools like carbon trading. The EU ETS was established in 2005 and despite the significant resources available to the EU it is still not working effectively. Furthermore, as shown by the EU experience, carbon trading is very ‘institution heavy’ as a policy tool. Implementing complex carbon trading schemes and trying to make them effective will be even harder in developing countries where resources and regulatory and administrative capacity are in far more limited supply than in countries like the European member states.

Carbon trading could make tackling climate change more expensive overall

The main so-called benefit of carbon trading asserted by those in the carbon trading industry and its supporters in government is that it incentivises the reduction of emissions in a way that is “cost effective.” What this means is that, to the extent that carbon trading drives any emissions reductions, it incentivises the cheapest emissions reductions first. Worryingly, the flip-side of this so-called benefit is that carbon trading removes incentives for polluters to undertake adjustments which are more expensive, by providing them with the expedience of purchasing pollution permits or offset credits from others in the carbon market. In addition, carbon trading provides another disincentive for low-

carbon investment, as efforts to reduce emissions by polluting industries – such as energy-efficiency investments – have the effect of reducing demand for carbon trading permits. Consequently, the permits’ value drops, therefore reducing the incentive for additional low-carbon investments by making it easier for polluting industries to purchase permits to cover their greenhouse gas emissions.

The overall effect of this perverse incentive structure is that the hardest, most expensive economic adjustments are put off and countries covered by carbon trading schemes continue to develop along high-carbon pathways until they have no choice but to tackle the most expensive mitigation actions. This has the knock-on effect of wasting time we can ill afford if a transition to low-carbon economies is to take place before climate tipping points are reached. This is a very high risk approach which gambles nothing less than millions of lives on the ability of countries to deliver dramatic changes in their economic and industrial infrastructure over very short timescales.

It is also, despite the claims of carbon trading advocates, probably the least cost-effective approach from a longer-term perspective. As referred to above and highlighted by Stern, the Hadley Centre and others, for every year action to reduce emissions is delayed, not only do the chances of dangerous climate change increase but so do the costs of action. Nicholas Stern’s landmark review on the economics of climate change concluded that the benefits of strong, early action on climate change outweigh the costs, asserting that: “The effects of our actions now on future changes in the climate have long lead times. What we do now can have only a limited effect on the climate over the next 40 or 50 years. On the other hand what we do in the next 10 or 20 years can have a profound effect on the climate in the second half of this century and in the next.”⁴⁸

3. MITIGATION

Carbon trading is a tax on consumers to pay polluters to pollute

Research has revealed an additional reason why carbon trading fails to incentivise sufficient emissions reductions or investment in low-carbon technologies by polluting industries. The structure and regulatory context of existing carbon trading schemes allows industries covered by them to dodge the additional costs that failure to reduce pollution is supposed to engender, by passing these on to consumers. In effect, carbon trading acts as a consumer tax on carbon, but with the funds from this tax going into the pockets of shareholders of highly polluting industries rather than into government reserves from where they could be reinvested in energy-efficiency measures and other government-led activities to tackle climate change. This is an issue which is common to other price mechanisms, and not just carbon trading. It could equally apply to a carbon tax, and is related to the wider market context of the industries covered, in which neither competition nor price regulation are sufficient to prevent polluting industries from passing additional costs for pollution measures on to consumers.

Uwe Leprich from Saarbrücken University in Germany has tracked electricity prices since the establishment of the EU ETS in 2005. His research demonstrates that, even though energy companies initially received the majority of their pollution permits under the scheme for free, the companies included the full price of the permits in electricity prices. This led to increases in wholesale electricity prices of 30 per cent in

Germany and France, 50 per cent in Scandinavia, and over 80 per cent in the UK.⁴⁹ Passing on of the price of pollution permits would have a disproportionate impact on poorer households across Europe as energy is a greater proportion of the weekly income of low-income families. Other studies on the European energy sector have indicated that allowing European energy utilities to pass on the costs of freely acquired allowances would lead to consumers paying €248 for each tonne of CO₂ reduced in the electricity sector.⁵⁰

A recent study by the Dutch institute CE Delft made similar findings for manufacturing sectors covered by the EU ETS. It estimated that if the refining, iron and steel sectors passed on the full costs of freely acquired pollution permits to the consumer, they would have generated an estimated €14 billion between 2005 and 2008.⁵¹

Carbon trading incentivises increased pollution for profit

Research on the Clean Development Mechanism (CDM) – the official offsetting scheme sanctioned by the Kyoto Protocol – has exposed major market scandals. Widespread gaming and abuse of the system have been carried out by polluting industries in developing countries, seeking to qualify for offset credits under the scheme. These credits are desirable because they can then be sold to polluting companies in developed countries through carbon trading schemes such as the EU ETS.

Most recently, the watchdog CDM-Watch has exposed gaming and abuse of the CDM by the producers of HFC-23, a potent greenhouse gas which is a by-product of the refrigerant gas HCFC-22. The destruction of HFC-23 is one of the activities under the CDM which qualify for offset credits that can then be sold on the carbon market. However, analysis by CDM-Watch of monitoring data from all registered HFC-23 destruction projects revealed that CDM HCFC-22 plants are intentionally operated in a manner to maximise the production of offset credits. According to CDM-Watch: “The analysis indicates that because of the extra CDM revenue more HCFC-22 is produced and far more HFC-23 generated than would occur without the CDM.”⁵² In conclusion, CDM-Watch argues that the HFC-23 destruction projects under the CDM offsetting mechanism are actually having the opposite of the intended effect, i.e. they are contributing to increasing global greenhouse gas emissions.

Box 4. Can carbon trading be reformed?

The problems and flaws with carbon trading are being increasingly exposed and this growing awareness has led to widespread debate about whether carbon trading can be reformed, i.e. can it be improved to the extent that it can contribute effectively to tackling greenhouse gas emissions? There are a variety of views on this question. It is clear that numerous loopholes need to be closed in order to reduce the threat posed by existing carbon trading schemes to our chances of avoiding dangerous climate change. Addressing these would require:

- Setting caps on emissions in line with science and justice.
- Removing all offsetting from trading schemes.
- Prohibiting speculative trading activity.
- Auctioning of all pollution permits.
- Global regulation to prevent a 'race to the bottom' with countries forced to lower their regulatory standards to match the lowest standards globally.
- Disaggregation of industrial sectors covered by the schemes to allow for trading only within sectors.

- Supplementary interventions to drive innovation.

It is questionable whether the resulting mechanisms could be distinguished from other regulation such as standard setting, except that they would be far more complex, and thus more time consuming, expensive and difficult to implement.

Critically, ongoing calls for reform of the EU ETS in order to address some of the worst loopholes have led to very few improvements in practice. This failure is in large part attributable to the power and excessive influence over government decision-making of the considerable vested interests – polluting industries, financial actors and others – that have grown up around the scheme.

Furthermore, proposals for the expansion of carbon trading look set to repeat and even exaggerate the flaws and problems with existing systems, and economic rather than environmental concerns appear to be the primary motivation of the governments and interest groups who are driving these proposals forward.

The likelihood of wholesale reform of carbon trading in the time we have available to achieve a peak and decline in global carbon emissions thus looks entirely unrealistic.

Given this historical record, the current political context, and the availability of many more simple, direct and proven policies and measures for tackling carbon emissions, Friends of the Earth considers that our energies should be focused on these solutions to climate change. Where trading schemes already exist, the major loopholes in these systems must be urgently tackled, but without losing focus on the more effective, viable and equitable solutions that are available.

On a global level it is critical that we halt the expansion of carbon trading and focus on bringing forward a whole suite of solutions that have the greatest chance of reducing emissions and transforming our economies rapidly, effectively and in a just and equitable way.

3. MITIGATION

Solutions for climate change mitigation

As highlighted in the introduction to this report, tackling climate change requires a collection of policies and measures, and the search for a silver bullet is both lazy and dangerous. As a global society we have no choice but to adopt a raft of new climate mitigation tools, rather than highly flawed current and planned carbon trading schemes, if we are to have a chance of reducing emissions enough to avoid catastrophic climate change. This section explores priority policies and measures to bring about emissions reductions in the energy, agricultural, forest governance and industrial sectors of national economies. Because of limited time and resources it was not possible to include solutions for transport and waste but many such solutions do exist and warrant equal attention from policy makers.

The exact package of solutions required will obviously vary from country to country, and there will be significant differences in the types of policies that are needed in developed and developing countries. Broadly, for developed countries, tackling greenhouse gas emissions means reducing fossil-fuel use and increasing energy efficiency, changing their unsustainable industrial and agricultural base, and reducing the over-consumption of unsustainable commodities produced at home and abroad, combined with increased rates of reuse and recycling. A study published in 2009 in the journal *Geophysical Research Letters*, calculated that one third of China's carbon emissions were a result of producing goods for export,⁵³ giving an indication of the degree to which excessive consumption of energy-intensive products in developed countries has been masked by the offshoring of energy-intensive manufacturing to the developing world.

For developing countries, there is still a need to increase energy availability to

the millions of people currently without it, as well as access to basic goods and services which themselves require energy to produce. The emphasis must be on developing cleanly, including increasing energy access and production capacities, without following the unsustainable development path of the rich developed world.

Common to both developed and developing countries, and central to tackling climate change, is the need to reduce dependence on cheap, climate-destroying fossil fuels, and this will require far-reaching transformation of the global economy, including the relocalisation of production and consumption, with more goods being produced for local and regional markets instead of for export and the development of more sustainable and resilient economies at the national and local level.

Energy

- **Reducing emissions from energy use requires a combination of policies which drive down the cost of renewable energy with those that incentivise the reduction of fossil-fuel use by driving up the price of dirty energy.**
- **A global feed-in tariff programme with investment of US\$100 billion per year over fifteen years would bring down the costs of renewable technologies to a universally affordable level, so that renewable energy becomes “the default choice of the world as a whole.”⁵⁴**
- **Direct government intervention including stronger regulations on energy efficiency combined with increased carbon and energy taxation would also drive energy savings and create additional benefits, including new green jobs and government revenue.**

Energy supply is responsible for around one quarter of global greenhouse gas emissions.⁵⁵ Reducing emissions from energy production and use is therefore a central priority for the global effort to tackle climate change. However, underlying this overall figure are severe global inequalities which have significant ramifications for the way that we go about tackling emissions from energy. Only a fraction of the world's population benefit from current global energy use, while a significant proportion of people do not have access to enough energy to meet even their basic needs. According to the Swedish Society for Nature Conservation, the daily energy consumption of an average person in the US is 50 times that of one in Bangladesh. Per capita electricity use is even more unequal – on average a person in the US consumes one hundred times as much electricity as someone in Bangladesh and two hundred times more than someone in Tanzania.⁵⁶

Globally, around 1.63 billion people currently lack access to electricity and

2.4 billion people cook with firewood, with many suffering the health effects that result from exposure to wood smoke. As standards of living are closely correlated with access to energy, and energy services are essential to support the delivery of other key public services like health, expanding access to affordable energy to cover the basic needs of those people currently without it is a pressing development priority.⁵⁷ It is therefore essential that policy mechanisms to tackle emissions from global energy use go hand in hand with mechanisms to expand energy access to poor communities in developing countries that currently lack it.

Globally, delivering the cuts in emissions from global energy use that are needed to avert runaway climate change requires a dramatic switch away from the unsustainable fossil-fuel basis of our economies, with a reduction in unnecessary energy consumption, combined with increased use of renewable energy sources such as wind and solar power to meet basic energy needs. It is important to note that it is unlikely we will be able to find a direct, sustainable and renewable alternative to oil in the short time we have available to decarbonise the global economy, and therefore the shift to a more sustainable energy basis will require additional changes in systems of production, consumption, transportation and even population distribution to fit with this new approach. Overall, experience to date has shown that policy tools based purely on price mechanisms, such as carbon trading and carbon taxes, will not deliver a shift to renewable energy sources, because these alternative sources are currently far too expensive and the institutional and regulatory frameworks for them inappropriate.

Renewable energy use is expanding, with the reported annual growth rates of 25 per cent for wind energy and 80-100 per cent for solar photo-voltaics⁵⁸ going

hand in hand with equally dramatic declines in cost. However, these growth rates are from a very low base and renewable energy is still far from being cost competitive with dirty, fossil-fuel based energy, not least because of the substantial state subsidies to the fossil-fuel industry explored later in this report. The costs of dirty energy would have to increase far above what has been delivered by carbon trading schemes such as the EU ETS for currently available renewable technologies to be able to compete.

However, relying simply on driving up the cost of fossil fuels is not sufficient. Renewable energy technologies are largely still unaffordable in developing countries and further driving up the price of fossil fuels would have deeply inequitable outcomes, having the effect of reducing rather than increasing energy access. People in developing countries and many poorer families in developed countries would be priced out of the market and denied their basic energy needs.

It is therefore widely acknowledged that reducing emissions from energy use requires a combination of policies which drive down the cost of renewable energy with those that incentivise the reduction of fossil-fuel use by driving up the price of dirty energy – a combination of regulation, investment and taxation.

The Regulatory Assistance Project, a global non-profit team of experts with a background in energy regulation, focuses on the long-term economic and environmental sustainability of the power and natural gas sectors. It is one of a growing body of experts who have concluded that higher energy prices are not enough to drive a sustainable transition in the power sector. It argues that price mechanisms alone are more expensive and less likely to succeed than a suite of complementary policies involving energy-efficiency targets, standards and programmes; support for

renewable energy generation; power market reforms; grid investments for renewable power; and the recycling of carbon revenue – investing revenue in energy-efficiency measures, development of renewable technologies and so on.⁵⁹ Overall these changes point to the importance of improved energy governance, i.e. greater public accountability of decision-making over energy supply and use.

Investment in renewable energy – the case for global feed-in tariffs

As highlighted in *A global green new deal for energy, climate and development*, the landmark 2009 report by the United Nations Department for Economic and Social Affairs (UN-DESA), several recent global analyses point to the central role of increased public investment in renewable energy as a key tool for tackling climate change.⁶⁰ UN-DESA's 'Green Energy Revolution' strategy asserts that globally, investment in renewable energy needs to increase dramatically in order to meet the dual needs of tackling climate change and expanding energy access to those who need it. According to the UN body, a "big push" on investments in renewable energy will generate a virtuous circle of additional investment, cost reductions, improved technologies and employment generation.⁶¹ Additionally, it is argued that frontloading this investment – providing as much of the money as possible as early as possible – will speed up the processes involved and reduce total costs overall, thereby increasing our chances of avoiding dangerous climate change while reducing the costs of doing so in the long run.

Of all of the policy mechanisms with the aim of increasing investment in renewable energy deployed so far, the most dramatic expansion of renewable energy capacity was witnessed under the feed-in tariff programmes enacted in countries such as Germany and Spain.

3. MITIGATION



According to the European Commission, these resulted in seven to eight times as much wind capacity.⁶² Overall, around 90 per cent of the expansion of wind power in Europe since 1995 has occurred in countries that apply feed-in tariffs to power suppliers.⁶³

Feed-in tariffs oblige electricity grids to purchase renewable energy as it becomes available and to offer the providers of renewable energy a guaranteed price, the ‘tariff’ or rate paid for the electricity. Prices are set at levels that ensure renewable energy producers can recover their investments and make a reasonable profit. Prices are also regularly reviewed to prevent over-rewarding, including taking into account reductions in the costs of technology and deployment. Feed-in tariffs have been used in 50 countries around the world, including Germany, Spain, China, Brazil and India, and are responsible for the fact that Germany and Spain are now world leaders in investments in solar and wind energy.

Feed-in tariffs are institutionally light and their ease of implementation in Germany and Spain suggest it would be relatively simple to roll them out across other developed countries. However, in developing countries the ease with which feed-in tariffs could be implemented is severely restricted by the limited government revenue available to subsidise the tariffs until the price of renewable technology is sufficiently low that subsidies are no longer necessary. This leaves a gap between the feed-in tariffs that need to be offered to suppliers to make renewable energy competitive and the share of the subsidy that developing countries can afford to pay.

The solution to this problem proposed by UN-DESA is international support

Left: a global feed-in tariff could help communities become their own energy providers: putting up new solar panels, Idodi Health Centre, Tanzania.

for a global feed-in tariff programme.⁶⁴ It estimates that additional investment of US\$100 billion per year over fifteen years would bring down the costs of renewable technologies to a level that is universally affordable so that renewable energy becomes “the default choice for the world as a whole.”⁶⁵ This decline in price would result from improvements in manufacturing driven by increased demand, a process known as the ‘learning curve’. This is evidenced by current trends in renewable energy markets. For example, according to the European Wind Energy Association, every time the amount of wind generation capacity doubles, the price of electricity produced by wind turbines falls by 9-17 per cent.⁶⁶

In terms of how this global feed-in tariff programme could work, according to the Swedish Society for Nature Conservation: “A global programme of this kind is clearly best suited for funding through direct public investments and a centralised financial mechanism – carbon markets have little or no role to play here.”⁶⁷ It is therefore an ideal mechanism for inclusion in a global climate fund under the governance and authority of the UNFCCC. However, while the funding and goal setting for such a programme would need to be global, the implementation of the feed-in tariffs, including decisions about appropriate technologies and energy systems to support them, could be undertaken at the national level. This means the system could be flexible enough to take into account the very different realities and contexts across the developing world.

A global feed-in tariff programme of the type described by UN-DESA has a great many advantages and the potential to bring forward other significant benefits for the countries that implement tariff programmes. These include:

- **Pre-existing legal infrastructure:** With over 50 countries that already

have legal provisions for the introduction of feed-in tariffs, a great deal of the infrastructure needed is already in place.

- **Leverage for additional private investment in renewable energy:**

Feed-in tariffs deliver “the right mix of policy and market stability that, according to recent research summarised by Stern et al., can create the highest possible leverage of public financing, mobilising up to 15 times the original investment in additional, follow-on funding.”⁶⁸

- **Lower risk of corruption:** Although there would still be the possibility of gaming and corruption, a global feed-in tariff programme would have a lower risk of corruption than existing carbon trading mechanisms such as the Clean Development Mechanism (CDM). This is because tariff payment is made when fossil-fuel free electricity is delivered, not on the promise of a hypothetical reduction of emissions which is very difficult to measure, as is the case in the CDM.

- **Job creation:** Research has shown that investments in renewable energy create two to three times as many jobs as investments in conventional energy development.⁶⁹

- **Greater community control over energy:** Feed-in tariffs allow for the development of more decentralised energy systems in which communities can become their own energy providers by installing their own renewable energy resources. They therefore provide a critical opportunity to reduce the excessive power and often monopoly positions of many energy companies, and to increase social control over energy provision.

- **Flexible enough to include other solutions:** The global feed-in tariff framework is also flexible enough to include other types of solutions, helping to ensure that inappropriate technologies are not forced on communities. This framework could integrate policies and mechanisms to allow for the inclusion of small-scale, off-grid installations and also energy-efficiency technologies.

- **Unlocks developing country revenue:** Because of the big gap between high global energy prices and very low incomes in developing countries, their governments are forced to provide significant subsidies to consumers for fossil fuel-based energy. While these subsidies are essential for supporting energy access to cover basic needs, once the price of renewables has declined sufficiently to become affordable, then the need for fossil fuels will be considerably reduced and developing countries would be able to make significant savings. Completely ending the need for developing countries’ fossil-fuel subsidies would also need renewable energy solutions in the transport sector, which are beyond the scope of this report.

It is important to recognise that there are some risks associated with the expansion of renewable energy sources which would be facilitated by the global feed-in tariff programme, including unsustainable resource inputs into the production of renewable energy infrastructure. The manufacturing of renewable energy technology, particularly large-scale wind energy infrastructure, requires large amounts of steel, cement and other industrial inputs which themselves have a very destructive social and environmental footprint. Together, steel and cement production are responsible for 10 per cent of global carbon emissions.⁷⁰ Mineral extraction for steel and cement production is also associated with widespread abuses of human and community rights.⁷¹ Switching overall energy consumption to renewable energy and expanding access to renewable energy in developing countries is not automatically compatible with a safe global emissions pathway, nor with sustainable development.

In order to help reduce the risk of renewable energy expansion driving further unsustainable resource use,

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efforts must also be made to reduce wasteful and excessive energy consumption, both in developed countries and by elites in developing countries (see sections below on energy-efficiency measures and carbon and energy taxation). In addition, it is essential that a global feed-in tariff programme would have safeguards in place to ensure that the processes for selecting eligible technologies are transparent and participatory. These processes should take into account environmental and socio-economic impacts both in the countries and communities where the proposed projects are to be implemented and in the countries and communities where the raw material inputs will be produced.

The need for adequate safeguards to prevent negative socio-economic and environmental impacts of proposed projects is also highlighted by the fact that there are already cases of land grabbing associated with the expansion of large-scale wind energy projects, for example in India⁷² where locally communities have been forcibly displaced from their land to make way for large-scale wind energy plants.

Finally, any subsidy programme carries a significant risk of creating new and powerful vested economic interests whose drive for market expansion and increased shareholder value is incompatible with sustainable development. For example, if local communities cannot afford the initial up-front investment in local renewable energy infrastructure then these investments are likely to be made by existing energy providers, perpetuating what are in many cases monopoly positions and the excessive power of large-scale energy providers. In addition, the global feed-in tariff programme carries a risk of encouraging further net transfers of wealth from the South to North, as many of the companies with existing expertise in renewable

technology production are currently based in developed countries.

It will therefore be essential to ensure that the global feed-in tariff programme includes small-scale and informal energy providers in order to stimulate inclusive, decentralised development of national economies and avoid promoting monopolies and the further extraction of wealth from the South to the North. In many cases it will also be important for governments to provide finance to communities to support them in making the initial outlay for local renewable energy infrastructure, thus ensuring that they benefit from energy decentralisation. There is likely to be an important role for local governance in supporting this process. These measures will also need to be facilitated by the relaxation of intellectual property rights to allow the transfer of the best renewable technologies to developing countries.

Energy-efficiency measures

In the effort to avoid catastrophic climate change, even significant global investments in renewable energy such as those proposed by the global feed-in tariff programme are unlikely by themselves to be enough to tackle emissions from energy use. As well as shifting to renewable sources of energy, a big effort will also be needed to stop excessive energy consumption and reduce consumption overall.

As with other climate mitigation solutions, policies and measures to increase energy efficiency and reduce energy use are likely to have a number of knock-on benefits, in addition to the immediate impact of reduced greenhouse gas emissions. In Europe, the European Commission has highlighted that bringing EU energy consumption back down to 1990 levels would reduce CO₂ emissions by 800 million tonnes (equivalent to 20 per cent below 2005 levels). It would also generate €200 billion annual savings in energy bills and stimulate hundreds

of thousands of new jobs in sectors supporting industrial upgrades, energy and telecommunications services, and building retrofits.⁷³

An indication of the global potential for energy-efficiency measures has been provided by the International Energy Agency (IEA), which has put forward 25 recommendations for action on energy efficiency by governments and estimates that if these were implemented globally they could save 8,200 Mt (million tonnes) CO₂ per year by 2030. This is equivalent to half of the EU's annual emissions.⁷⁴

Stimulating energy savings and increasing energy efficiency requires a strategic approach, with direct government target-setting, monitoring, enforcement and evaluation of energy-efficiency measures, supported by public investment to overcome financial barriers to the meeting of targets.

1. Energy savings in buildings and construction

According to the IEA, buildings account for about 40 per cent of energy used in most countries. Tackling this energy use requires new building codes, innovative construction methods, and building certification schemes.

2. Energy from electrical appliances and equipment

Electrical appliances and equipment represent one of the fastest growing energy demands in most countries. IEA recommendations here include action on mandatory energy performance requirements or labels; low-power modes including standby power for electronic and networked equipment; energy savings from effective lighting technology; and energy-performance test standards and measurement protocols.

3. Energy savings in transport

Finally, with around 60 per cent of oil consumed in the global transport sector, this sector must be a key target for energy-savings measures. Such measures include mandatory fuel-efficiency standards for light-duty vehicles

and fuel economy of heavy-duty vehicles.

Source: International Energy Agency: http://www.iea.org/g8/2008/G8_EE_recommendations.pdf.

While energy-efficiency measures are an essential part of the toolbox to aid transition to a low-carbon world, there is a risk that overemphasis on such measures at the expense of transformational policies would serve to entrench fossil-fuel based activities, rather than help the rapid transition away from them. Efforts to secure energy savings must be supplementary and complementary to action to support wider transformational changes away from the unsustainable fossil-fuel base of our economies. This requires a highly integrated approach to policy-making at local, national, regional and international levels, with measures to reduce climate impacts fully integrated into and prioritised in all areas of public policy making, including transport, urban planning, agricultural and industrial policy.

Carbon and energy taxes

In developed countries where affordable energy is more readily accessible and excessive energy consumption is a significant problem, taxation of carbon and energy also has an important role to play.

If well targeted, and with an escalator – a mechanism which allows the tax to start low and then be increased incrementally – taxation, in combination with other measures, can help to shift behaviour. Such taxes are an effective policy tool for incentivising energy efficiency and drive emissions reductions.

The UK, Denmark, Finland, Ireland, the Netherlands, Sweden, and Norway all have carbon taxes. The UK's carbon tax, the Climate Change Levy (CCL), taxes energy delivered to non-domestic users, including those in industry, agriculture and public administration. Although the scheme was watered down as a result of lobbying by businesses covered by it, the UK regulatory body the National Audit Office (NAO) estimates that the scheme

will lead to a saving of 3.5 MtC (million tonnes of carbon) in 2010.⁷⁵ Sweden's escalating carbon tax was introduced at a rate of €28 per tonne but is now over €100 per tonne, and the country's Ministry of Finance estimates that emissions would be 20 per cent higher without the tax.⁷⁶

Taxation, like carbon trading, is a price mechanism. It seeks to affect specific behaviours by increasing their costs. It therefore shares a key shortcoming with other price mechanisms – unless delivered hand in hand with significant investments in energy alternatives, such as through a global feed-in tariff programme, it will not result in changes in behaviour, structural change or private-sector innovation and may lead to highly inequitable outcomes. However, if integrated in a package of other policy mechanisms, taxation can play a useful role in incentivising energy efficiency and reducing excessive energy consumption and overall greenhouse gas emissions.

Taxation is considered a key aspect of national sovereignty, and attempts to interfere with it by regional or international bodies are often met with significant sensitivity and resistance by national populations. Therefore the prospect of getting agreement on the implementation of international or even region-wide taxation instruments is very unlikely. A proposal by the Swiss for a global carbon tax made very little progress at the international climate negotiations. It did not respect the CBDR principle and therefore did not receive the support of developing countries and was eventually shelved. However, with a large number of countries already having carbon taxes in place, the UNFCCC could play a major role in helping to share learning and best practices among developed countries on the use of taxation to tackle greenhouse gas emissions, and providing a space for the development of more effective taxation policies which parties to the UNFCCC could implement nationally.

As a price mechanism, taxation has a number of advantages over carbon trading:

- **A more stable, predictable price impact:** The price stability and predictability offered by carbon taxes are important factors in encouraging longer-term private-sector investment decisions and makes investment in low-carbon infrastructure such as renewable and energy-efficiency technology more attractive. This is in contrast to carbon trading where uncertainties in the value of offset credits and the predominance of speculative transactions drive considerable volatility in the carbon market. According to the UN 2009 Social and Economic Survey: "By increasing the cost of emissions to private parties in a more predictable manner than cap and trade, carbon taxes provide the opportunity to both raise public revenues and mitigate climate damage."⁷⁷
- **Greater ease of control by governments:** The experience of the EU ETS has shown that it is very easy to misjudge the number of permits that can be allocated to industry to deliver a specific outcome in terms of emissions reductions, and once a misjudgement is made it is very difficult to correct. This is far less of a problem with carbon taxation, which if introduced at too low a level can be increased with relative ease.
- **Simplicity and ease of implementation:** Taxation instruments are far simpler than the highly complex and opaque carbon trading schemes that are currently in existence and the even more complicated proposals that are currently on the table in the United Nations negotiations, which even industry advocates often appear to struggle to understand. The simplicity of taxation makes it a superior policy tool, not only in terms of design and implementation, but also because of the reduced likelihood of manipulation by special interest groups due to greater possibilities for public scrutiny.
- **A source of government revenue:** Carbon taxation is a source of

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government revenue, some of which could be directed towards domestic efforts to tackle climate change or ring fenced as a developed country's contribution to a global climate fund that supports climate mitigation and adaptation for developing countries.

In considering the use of carbon taxation as a mitigation solution, it is important to note that carbon taxes do not automatically mean that polluters pay. The experience of the EU ETS has seen polluting industries covered by the scheme passing the increased costs associated with participation on to consumers and thus avoiding any incentive to reduce emissions. There is a similar risk with carbon taxation instruments, if levied on energy producers or large-scale energy users in a situation where insufficient market competition or lack of price regulation allows them to pass on prices to households and consumers.

Ensuring that large-scale industrial polluters who are targeted by any taxation instrument actually pay necessitates great care in the design stage. It may also require regulations to ensure that the extra costs are not passed on to consumers, or if they are, then mitigation measures are in place. In some cases this may require direct market interventions by governments in the form of price regulation. Another solution is the 'cap and dividend' scheme⁷⁸ being put forward by campaigners in the United States which returns revenues from carbon fees directly to households.

Unless carefully designed, carbon taxes targeted at reducing general energy use could also have deeply inequitable outcomes, including the effect of penalising poor or rural households. Modelling by the UK-based Institute for Public Policy Research shows that, without adjustment, those in the lowest

Box 5. Tackling climate change and creating jobs

According to the United Nations Environment Programme's *Global Green New Deal* policy briefing⁸⁰ (2009):

- About 2.3 million people have in recent years found new jobs in the renewable energy sector, even though this provides only two per cent of global primary energy.
- In China, the renewable energy sector generates output worth US\$17 billion and employs one million workers, of which 600,000 are employed in making and installing solar thermal products such as solar water heaters.
- A worldwide transition to energy-efficient buildings would create millions of jobs as well as "greening" existing jobs for the estimated 111 million people employed in the sector.
- Investments in improved energy efficiency in buildings could generate an additional 2–3.5 million green jobs in Europe and the United States alone.

income decile would (in proportional terms) lose four to six times as much from a carbon tax as those in the highest decile.⁷⁹ In addition, carbon taxation on transport fuels would have differential impacts on rural and suburban households compared to urban ones.

If carbon taxes are directed at households then they must be accompanied by measures to mitigate any regressive impacts. For example, cushioning low-income households by pitching price brackets to levels of income or energy use could counteract any regressive effects of carbon taxation, as could initial up-front investments in energy efficiency for low-income households. Mitigation measures such as rebates or investment in better public transport services could be used to mitigate the adverse effects of carbon taxation on transport fuels for low-income households in rural areas.



Friends of the Earth

Above: expanding small-scale organic farming would lead to a dramatic reduction in fossil-fuel use: forest and organic farm in Altos, run by Sobrevivencia/Friends of the Earth Paraguay for training and education.

Agriculture

- **The expansion of small-scale, sustainable agriculture has the potential to bring about a dramatic reduction in global greenhouse gas emissions though reduced fossil-fuel use in agriculture and carbon sequestration in plants and soils.**
- **This will require a package of policy measures aimed at transformation of large-scale industrial agriculture and increased support for small-scale farmers, food sovereignty and sustainable agricultural practices and techniques.**
- **At the same time it is critical to tackle global demand for products associated with damaging intensive agriculture, including excessive consumption of meat and dairy products.**

Industrial agriculture and the industrial food system are major causes of the climate crisis. In its Fourth Assessment Report the IPCC estimated emissions from agriculture at 13.5 per cent of global

greenhouse gas emissions in 2004.⁸¹ However, this did not include emissions from transport and land-use change relating to agriculture. Food and farming specialists GRAIN estimate emissions from the global food system amount to 44-57 per cent of total greenhouse gas emissions. In terms of specific sources, 11-15 per cent of these emissions are from agricultural activities, including the use of industrial machinery and chemical fertilisers; 15-18 per cent from land clearing and deforestation; 15-20 per cent from food processing, packaging and transportation; and the remaining 3-4 per cent from the decomposition of organic matter, including food waste.⁸²

Policy specialists⁸³ have identified key changes in the global food system crucial to achieving the reductions in greenhouse gases necessary to avert catastrophic climate change. These include:

- Reduced dependence on fossil fuels, by decreasing the production and use of artificial fertilisers and the use of fossil-fuel powered transport and machinery.

- A dramatic expansion in agricultural methods that return organic matter to the soil, in order to capture carbon and reduce the release of nitrous oxide and methane into the atmosphere.
- An end to land clearing and deforestation for agriculture, by scaling down monoculture plantations and supporting diversified agricultural systems that integrate forest cover.
- An end to excessive meat and dairy consumption coupled with increased diversity of farm animals to provide a farming system more able to adapt to changing climate and less dependent on the availability of animal feed.
- Strengthening local markets and urban agriculture to increase consumption of fresh, seasonal food.
- An end to the use of agricultural land for the production of agrofuels, and decreased consumption of other non-food products produced from plant raw materials.

Together, these solutions to agriculture's contribution to the climate crisis are the same ones that have

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been advocated by many small-scale farmers, such as those from the global peasant farmers movement La Via Campesina, since the early 1990s: a return to small-scale, locally-appropriate, sustainable models of agricultural production in developed and developing countries. This argument is supported by widespread agreement among independent agricultural specialists – those not employed or funded by the major multinational food, agricultural and biotechnology corporations, which have in recent decades dramatically increased their influence over scientific research and government policy-making. Small-scale, sustainable models of production allow for a drastic reduction in the use of fossil fuels, while at the same time providing great potential for carbon sequestration (the removal of carbon dioxide from the atmosphere) in plants and soils.⁸⁴ However, these solutions must be combined with a significant shift in diets, especially in the North, to ensure adequate nutrition is distributed fairly across the globe.

According to Norwegian development specialists The Development Fund (Utviklingsfondet): “The majority of climate change mitigation activities are cornerstones of organic agricultural practice, meaning that organic production systems arguably serve as the best widespread examples of low emissions agriculture to date.”⁸⁵ For example, a comparative analysis of long-term trials at the Rodale Institute found that organic farming systems used around 70 per cent of the energy required by conventional farms, largely by avoiding the energy input needed for synthetic nitrogen fertiliser.⁸⁶

Reduced demand for the products associated with more damaging, intensive systems will be vital to allow nutritious diets to be available globally.⁸⁷ Many studies also confirm that diets with less meat are essential to tackle climate change and other resource-use limits within the food system.⁸⁸

One study, which modelled the impact of changing diets, production systems, land availability and crop yields, shows that it is still possible to feed the world in 2050 without the most intensive forms of production or a massive expansion of agricultural land. It would require healthier, lower-meat diets as well as food distributed more equitably.⁸⁹ In policy terms, it is necessary to combine policies which control demand with those that both protect the existence and stimulate the resurgence of small-scale, sustainable systems which are under threat. A global effort to support the expansion of small-scale, sustainable agriculture and food distribution is likely to necessitate technology and knowledge transfers, including from the global South – where many such food systems still manage to exist – to the global North – where large-scale industrial agriculture is now largely dominant.

Key policy priorities include:

- Regulation to end the expansion and support the transformation of large-scale industrial agriculture, intensive livestock rearing and fisheries.
- An end to current policies that promote the concentration of ownership of land, production processes, processing and retailing. This should include measures to limit government support so that the largest farms do not get the largest subsidies; competition and planning policy to control the size, activities and buying power of major food companies; and land redistribution through agrarian reform to reduce the concentration of land ownership and stop the corporate takeover of farming.
- Policies to encourage the decentralisation of animal production and re-integration of plant and animal production, reversing the increased specialisation that has taken place in recent decades.
- Support for agricultural techniques and practices based on diversity, local seed

Box 6. Food Sovereignty

“Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound sustainable methods, and their right to define their own food and agriculture systems. It puts the aspirations and needs of those who produce, distribute and consume food at the heart of food systems and policies rather than the demands of markets and corporations. It defends the interests and inclusion of the next generation. It offers a strategy to resist and dismantle the current corporate trade and food regime, and directions for food, farming, pastoral and fisheries systems determined by local producers and users. Food sovereignty prioritises local and national economies and markets and empowers peasant and family farmer-driven agriculture, artisanal fishing, pastoralist-led grazing, and food production, distribution and consumption based on environmental, social and economic sustainability. Food sovereignty promotes transparent trade that guarantees just incomes to all peoples as well as the rights of consumers to control their food and nutrition. It ensures that the rights to use and manage lands, territories, waters, seeds, livestock and biodiversity are in the hands of those of us who produce food. Food sovereignty implies new social relations free of oppression and inequality between men and women, peoples, racial groups, social and economic classes and generations.”

*Definition of food sovereignty (from the Declaration of Nyéléni)*⁹¹

systems and agro-ecological processes, including appropriate sharing and dissemination.

- Public investment and other support for small farmers and recognition of their ability “to feed the world, reduce climate change, preserve the natural wealth of agricultural and grazing lands, soil, biodiversity, water and aquatic resources that they use in production.”⁹⁰
- Reforms in global trade rules, bilateral trade, regional policies (such as the EU Common Agricultural Policy or US Farm policy) and investment deals that are incompatible with food sovereignty (see definition opposite).
- Global, national and regional measures (including procurement, fiscal, pricing and public awareness tools) to reverse the trend for diets dominated by meat and dairy in emerging economies and measures to reduce consumption in developed economies.

These policies will bring about changes in systems of agricultural production, consumption and distribution that will make a major contribution to the fight against climate change.

Even if action by the global community means that we are able to avert catastrophic climate change, its effects are and will be apparent in the next decades. Therefore, policies are also of critical importance in building the resilience in agricultural systems that is essential for adaptation to the inevitable climatic changes to come.

Even if the worst effects of climate change can be avoided, the impacts on agriculture are likely to be significant, including less predictable rainfall patterns, an increase in extreme weather events such as intense rainfall and longer and more frequent droughts, and the spread of pests and diseases to new regions. South Asia and Southern Africa have been identified as the two parts of the world likely to be hit hardest by largely unavoidable climatic changes.

What is needed to aid adaptation to

these changing climatic conditions is “a form of agriculture that is resilient, and a system of food production that supports knowledge transfer and on-farm experimentation through building the adaptive capacity of farmers.”⁹² Small-scale, sustainable models of production have far greater flexibility and diversity and are therefore more compatible with changing climatic conditions than large-scale, uniform, industrial agriculture. They are also better at withstanding the shocks and stresses of extreme weather events such as droughts and flooding. The Food and Agriculture Organization (FAO) also recognises the adaptive benefits of sustainable systems, such as organic farming. It concludes: “In developing countries, organic agricultural systems achieve equal or even higher yields, as compared to the current conventional practices, which translate into a potentially important option for food security and sustainable livelihoods for the rural poor in times of climate change.”⁹³

Finally, the resurgence of small-scale, environmentally sustainable forms of agriculture brings multiple other social, economic and environmental benefits. The expansion of local food production and small-scale agricultural industries in rural areas, if supported by appropriate accompanying measures, has the potential to generate a considerable increase in decent⁹⁴ local employment for local communities,⁹⁵ as well as better, healthy diets and associated improvements in quality of life.



Maria Jimena Amarza

Above: action to reduce greenhouse gases from deforestation and forest degradation must protect the rights of Indigenous Peoples like the Indigenous Guarani in Argentina.

Forests

- **Tackling emissions from deforestation and forest degradation necessitates measures to tackle the core drivers of these processes, most notably demand for agrofuels, meat and forest products.**
- **Improvements in forest governance are also essential, including recognition and protection of the rights of forest-dwelling communities and Indigenous Peoples and the extension of community forest governance.**
- **Funding schemes are essential to support developing countries in implementing better forest governance and also to incentivise the shift away from development pathways based on forest destruction.**

Deforestation is currently responsible for as much as 17 per cent of all carbon emissions⁹⁶ and almost half of the global emissions from deforestation come from two countries: Brazil and Indonesia.⁹⁷ Relevant proposals submitted to the UNFCCC negotiations by FERN, Friends of the Earth International and Rainforest UK in 2008⁹⁸ point to three areas where improvements need to be made if the real drivers of global deforestation are to

be mitigated:

1. Reducing demand in consumer countries for products and activities that result in deforestation.
2. Improvements in weak and ineffective forest sector governance.
3. Facilitating new development pathways which are not premised on forest destruction.

Tackling the drivers of deforestation and forest degradation

Addressing these three areas in order to reduce deforestation and forest degradation and achieve lasting protection of natural forests requires a broad suite of policy approaches, including “policy, institutional and legislative reforms, enhanced forest law enforcement and improved forest governance.”⁹⁹ Measures are needed both in countries where forests are located and in countries where demand for products that result in deforestation is generated. In consumer countries it is essential to tackle demand for agrofuels, meat and forest products, including using policies that tackle demand directly, that reward reduced consumption, and that tackle any trade in these products which contravenes or undermines existing laws on forest production in producer countries.

In countries where deforestation is taking place the focus must be on protecting and promoting the rights of the local communities and Indigenous Peoples who are the traditional stewards of forests and strengthening and enforcing laws to protect forests. Community forest governance schemes have the potential to play an important role,¹⁰⁰ but they must adhere to key principles in order to be effective, including managing forests so that their resilience to climate change is sustained and restored. This requires practices that maintain biological diversity at all levels, including species, structure, genetic and landscape diversity. This in turn requires moving away from the current approach to forest management, which decides what to remove, to an approach which removes only what will not jeopardise forest resilience.¹⁰¹

Finance for forest protection

For many developing countries whose forests are under threat, it will be necessary to introduce funding schemes to support these measures and to incentivise a shift away from a development pathway that is based on forest destruction. For lasting protection of forests, similar funding schemes will be necessary for countries with natural

forests, but currently low deforestation and degradation.

To reduce global emissions from deforestation it is therefore essential that reliable and adequate funding is made available to developing countries by rich, developed countries, in addition to their overseas development assistance commitments.

Discussions on the provision of such funding are currently underway in the UNFCCC, under the negotiations on REDD (Reducing Emissions from Deforestation and Forest Degradation). However, the direction taken by these negotiations is increasingly worrying, with developed countries pushing for the inclusion of a REDD funding mechanism in the global carbon market. As a result, funding measures to prevent deforestation in developing countries could be used to offset carbon emissions from rich developed countries, thus providing a get out for developed countries trying to avoid their fair share of the global emissions cuts needed to avoid dangerous climate change. As explored earlier in the report, there is no room for offsetting in a fair and equitable global carbon budget. Rich developed countries are responsible for the vast majority of the global greenhouse gas emissions that have given rise to the problem of climate change and have a legal and moral responsibility to act first and fastest to stem their emissions.

In addition, the proposals currently on the table for REDD would not necessarily guarantee long-lasting forest protection and could even produce perverse incentives which actually drive deforestation. Hence, under some REDD scenarios, it is possible that deforestation could be allowed to continue or return to unacceptable rates.¹⁰² Under certain proposals, countries would benefit from REDD funding for deferring deforestation, even if they intend to return to their original deforestation rates after a certain period.

The current definition of forests used in the UNFCCC includes plantations. Plantations only store 20 per cent of the carbon of intact natural forests and, in addition, large-scale monoculture plantations are responsible for serious environmental, social and economic problems.¹⁰³ While negotiators were reluctant to revisit the definition of forests, a provision to ensure that REDD policies and incentives are not used to support or promote the conversion of natural forests has been included.¹⁰⁴ The current formulation is weaker than a clear safeguard.

Key criteria for forest funding

In so far as funding for forest protection in developing countries is necessary, any funding mechanism must be based on clear criteria and principles. These have been set out in detail elsewhere, including in the submission by FERN, Friends of the Earth International and Rainforest UK to the UNFCCC mentioned above, and in a more recent joint paper by Rainforest Foundation Norway and Friends of the Earth Norway.¹⁰⁵ The following criteria and principles for fund-based mechanisms for forest protection are essential:

- **Respect and promotion of the rights of Indigenous Peoples and local communities**, including ensuring their participation in the development of national implementation. Such broad-based participation is essential if all of the key national drivers are to be addressed, and thus for ensuring overall effectiveness.
- **Equitable sharing of the benefits** including ensuring that local communities and Indigenous Peoples who are the traditional stewards of forests are key beneficiaries of the scheme.
- **Avoiding perverse incentives** such as loopholes where plantation owners, logging companies and other actors behind deforestation and forest degradation become beneficiaries of the scheme.

- **Sound definitions of 'forest', 'deforestation' and 'degradation'** that describe the conversion of forests into plantations as deforestation and logging as forest degradation.
- **Public funding** as opposed to funding through the carbon market.
- **Regional initiatives and coordination** where large forests are shared among several different countries, to ensure that national schemes are complementary and mutually reinforcing.
- **Good governance** including clear, coherent policy laws and regulations and effective implementation and enforcement of, and compliance with, those policies, laws and regulations; transparent and accountable decision-making and institutions; as well as transparency of funds transfers and data on carbon emissions so that they can be open to monitoring and verification by independent third parties.
- **Independent complaint and conflict-resolution mechanisms** to address any conflicts which might arise between governments, communities and other actors involved.

Parallel with measures to support the protection of forests in a way that involves, benefits and respects the rights of local communities and Indigenous Peoples, it is also important to put a stop to public funding mechanisms that are currently contributing to forest destruction. The expansion of large-scale tree plantations has been promoted by the World Bank with the justification that they provide a carbon sink, when in fact, as elaborated above, they are no replacement for the natural forest that is very often destroyed in their creation.

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Industrial processes

- **Regulation and standard setting specifically targeted at individual industrial sectors are essential for tackling industrial emissions.**
- **To prevent polluting companies from using the threat of offshoring or so-called carbon leakage to avoid taking action, the starting point must be an international agreement on the introduction of common standards on the use of best available technology.**
- **This will in turn require a relaxation in intellectual property rights to ensure access to best available technologies at affordable rates.**

The need for direct regulation

With regard to industrial processes, there is a triple challenge for the global community: how to bring about a reduction in emissions in this sector; how to do so while supporting developing countries in further developing their domestic industrial capacity in order to reduce import dependency and meet basic domestic needs in a sustainable way; and how to support the relocation of production and consumption across the whole global economy which the challenge of tackling climate change necessitates.

Tackling emissions from industry – especially from energy-intensive primary materials industries like chemicals and petrochemicals, iron and steel, cement, pulp and paper, and aluminium – is thus a highly complex one. It is complicated further by the necessity felt by all countries in the global economy to provide an attractive investment environment for businesses, encouraging international investors to locate production within their borders to provide employment and contribute revenue to the national economy in the form of taxes. The importance of providing a competitive investment environment has been enhanced by the

global trade and investment deregulation and accompanying labour deregulation which took place in the latter half of the twentieth century, facilitating ‘offshoring’ – the relocation by companies to other countries where costs were cheaper and hence potential for profit making greater.

In terms of policy measures, the experience of the EU ETS has shown the considerable limitations of carbon trading as a means of tackling emissions from industry. The complexity of the trading process has permitted considerable lobbying and gaming by European industry, resulting in the consistent over-allocation of pollution permits by the European Commission to industries covered by the EU ETS. As a result, it has been largely ineffective in providing incentives for companies to reduce their emissions and has actually created the potential for massive windfall profits for some from the sale of their excess permits.¹⁰⁶ The experience of the EU ETS indicates that direct government intervention in the form of regulation and standard setting specifically targeted at individual industrial sectors, combined with adequate monitoring and enforcement, is essential for tackling industrial emissions, which currently contribute around one fifth of global greenhouse gas emissions.¹⁰⁷ This in turn requires increased investment in regulatory capacity.

Tackling the threat of carbon leakage

The issue currently is how to strengthen regulation and standard setting for polluting industries globally, without encouraging further offshoring of industry to countries with weaker regulations, or what has come to be known in the climate debate as carbon leakage. National governments are highly reluctant to unilaterally introduce tighter regulations on their domestic industries if similar measures are not being undertaken by other countries hosting actual or potential competitors. The current emissions-reductions regime

under the Kyoto Protocol – important because it involves binding emissions-reduction targets for Annex I, developed countries – does give rise to at least the potential for carbon leakage, where climate mitigation action in Annex I countries to meet these targets could motivate highly polluting industries in these countries to shift their operations to developing countries which are not subject to internationally-agreed emissions reduction targets.

Threats from industries that climate mitigation measures will force them to shut up their operations and move to countries with less rigorous emissions-reductions measures have been exposed as often having been grossly exaggerated. Recent research by CAN-Europe, a network of environmental campaigning organisations, concluded that, contrary to widespread claims by European industry, “the scientific case for carbon leakage under the current EU Emissions Trading System is weak if not non-existent.”¹⁰⁸

However, it is the perceived threat of carbon leakage and the perceived necessity to avoid it that is one of the motivations behind the proposals for new sectoral mechanisms, tabled by developed countries in the UN climate negotiations on carbon trading. Polluting industries provide significant jobs, taxes, and shareholder dividends in Annex I countries and the loss of their operations would have a significant impact on Annex I economies. The EU and other Annex I countries are therefore pushing for the extension of sectoral targets to key economic sectors in developing countries, such as steel, cement and power. If these sectors were also subject to emissions reduction targets, the incentive for industries in these sectors to move their operations from Annex I countries to developing countries would decrease, and so would the threat of carbon leakage.

It is essential to find a solution to industrial global greenhouse gas emissions

which deals with this perceived carbon leakage threat and the impact that it has on national government policy making while also avoiding carbon trading and the undermining of the CBDR principle which sectoral trading mechanisms involve. The starting point has to include:

- **Common standards for best available technology**, so that industries are held to the same standards for their industrial emissions wherever in the world they operate.
- **A fair and equitable carbon budget** with emissions targets agreed for all countries globally according to their historical contribution to the problem of climate change, their capacity to act to address climate change, and their other pressing development needs, i.e. based on the CBDR principle.
- **Adequate finance and technology transfers to developing countries**, as specified by Annex I commitments under the UNFCCC, to support their low-carbon development.
- **Reregulation of global trade and investment** to allow all governments greater control over the industries located within their borders.
- **Relaxation of intellectual property rights** to allow the affordable transfer of the most advanced, low-carbon technologies to developing countries.

Common standards on best available technology

Introducing common standards for the use of the best available technologies across industry would alleviate the fear that standards would compromise industrial competitiveness and incentivise businesses to move overseas to more 'attractive' investment environments with weaker pollution regulations. The principle of Best Available Techniques (BAT) has already been used effectively in driving better environmental standards in polluting industries. The European Integrated Pollution Prevention and Control (IPPC) directive, for example,

sets emissions limits according to the best techniques and technologies that are reasonably achievable and available at a reasonable cost. The BAT principle allows for standards in the industry to be determined by the most environmentally progressive firms, so it is highly progressive and rewards best practice.

A similar principle underlies Japan's Top Runner Programme, a regulatory scheme designed to drive continuous improvement in the energy efficiency of products, including household appliances and vehicles. The scheme covers manufacturers and importers of products, and it undergoes continuous revisions, allowing for the introduction of new product-specific energy-performance requirements dependent on the best available technology at the time of revision.

The relaxation of intellectual property rights will be absolutely essential here. If developing countries are not able to access affordable low-carbon technologies then they will have no option but to set weaker standards to allow the use of dirtier technologies, as is currently the case in many industrial sectors in the current global economy, including most recently the manufacture of solar voltaic technology. For example, the Washington Post recently exposed the impacts of toxic waste from solar voltaic cell production on local communities in China.¹⁰⁹

Other measures important at the national level for driving technological innovation include the correction of information imbalances between regulators and large corporations to ensure that targets set in relation to BAT are as forward looking as they can be; an increased role for public procurement; and increased public investment in research, development and distribution.

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Key principles for climate finance

This section sets out key principles for the provision of climate finance in fulfilment of the developed countries' obligations under the UNFCCC to provide new and additional finance to cover the incremental costs of clean development, as well as to help particularly vulnerable developing countries meet the costs of adapting to adverse climate impacts.

Type of finance

- **Adequate, sustainable, predictable, scaleable**

- The scale of climate finance should be adequate: comparable in scale to realistic estimates of what is needed.

- The sources of finance should be sustainable, and there should be certainty for the recipient governments in terms of the amount of finance they will receive and the time period over which the finance will flow.

- It should be possible to increase the scale of the funds if new needs or funding gaps are identified.

- **Polluter pays**

- Finance flows should follow the principle of Common But Differentiated Responsibility (see Box 1) and ensure the fulfilment of developed countries' commitments to pay the full incremental costs faced by developing countries for low-carbon development, and to support vulnerable countries in adapting to the impacts of climate change.

- **Equitable**

- Climate finance should be equitable in sharing effort, with developed countries contributing according to their abilities to pay, and the greatest funding coming from the countries which can afford to pay the most.

- Providing climate finance to developing countries should not come at the cost of deepening the impoverishment of low-income communities and households in the developed world.

- Climate finance should be equitable in terms of disbursement, with developing countries receiving adequate finance according to their mitigation and adaptation needs, and ensuring funding goes to the countries and communities who are poorest and most vulnerable to the impacts of climate change.

- **Grants not loans**

- As an extension of the polluter pays principle, climate finance must be delivered to developing countries as grants, not loans. Tackling climate change must not burden developing countries with even more illegitimate debt.

- **Public before private**

- Private-sector investment should be in addition to adequate public finance for climate action, not instead of it.

- Additionally, governments should make use of existing and innovative new means such as levies and fees to ensure that the private sector adequately contributes to the financing of climate mitigation and adaptation.

- Many of the activities which must be undertaken by developing countries to tackle climate change and adapt to its impacts either will not be profitable, such as small-scale, pro-poor adaptation projects, or will be at a market disadvantage, such as renewable energy. Many important activities will therefore not be of interest to the private sector, and the private sector cannot be relied on to finance them.

- Adequate climate finance must first and foremost be raised and contributed by governments. This initial public investment is essential to ensure adequate and timely action on climate change in developing countries and will help to create conditions for greater private-sector investment in tackling climate change in the future.

- **Not recycled aid money**

- Climate finance must be new money, additional to existing commitments from developed countries to overseas development aid. Tackling climate change should not take place at the expense of dealing with other urgent development needs like the provision of water, housing, sanitation and healthcare.

- Funds from multilateral development banks such as the World Bank should not count as a new source of climate finance as the vast majority of their funds are generated from developed countries' contributions and developing countries' loan payments.



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Use of funds

- **Fair, transparent and accountable governance**

- Disbursement of climate finance to developing countries should take place through a new global climate fund which is under the authority of, and fully accountable to, the UNFCCC.

- The fund should be governed by an executive board with equitable representation consistent with the balance of representation in the UNFCCC.

- The board should ensure that transparency and accountability mechanisms are in place at local, national and international levels to ensure effective public scrutiny of the provision and disbursement of the climate funds.
- The World Bank is not an appropriate institution for the management of climate finance and should play no role in the governance or disbursement of climate funds (see Box 7).

- **Free from conditions set by donor governments**

- Contributing governments should have no power to impose conditionalities over the disbursement of the finance. Responsibility for ensuring the funds are spent appropriately and according to need should sit with the UNFCCC.

- **Participation of affected communities and protection of their human rights**

- New large-scale financial transfers from developed to developing countries carry significant risks, including the imposition of harmful or inappropriate projects which have negative impacts on local communities.

- Climate finance must ensure the participation of local communities in defining suitable activities for climate mitigation and adaptation.

- The governance and implementation of climate finance must ensure the respect and protection of local communities and Indigenous Peoples' rights, cultures, lands and natural resources and be consistent with existing international treaties and conventions.

Above: carbon trading cannot guarantee a predictable flow of climate finance to developing countries.

- Governance and implementation must ensure free, prior and informed consent on behalf of affected communities, and include and facilitate rights of redress for affected communities.

- Climate finance must support workers in carbon-dependent industries to achieve a just transition to more sustainable economic activities.

- **Promoting local control**

- Activities supported by climate finance must promote the local control, use and management of energy, forests, water, and other essential environmental resources, and prioritise local technologies and knowledge.

- **Transformation to environmentally-sustainable alternatives**

- Activities supported by climate finance must contribute to the transformation of economies away from fossil fuels and towards renewable energy.

Box 7. The World Bank and climate finance

The World Bank is the world's largest financier of fossil fuels – its lending to fossil-fuel projects increased on average by 22 per cent between 2007 and 2009.¹¹⁰ Its governance structure lacks developing country representation and it continues to be one of the world's most powerful institutional proponents of unsustainable development models. The World Bank also has a history of lending to highly destructive projects associated with considerable human rights and environmental impacts.

For more information see: www.brettonwoodsproject.org

- **No false solutions**

- Climate finance should not be used to fund false solutions which undermine sustainable development, such as large hydroelectricity plants, nuclear energy, monoculture plantations, agrofuels and genetic engineering.

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Problems with carbon trading as a source of climate finance

- Carbon market offset finance is not a legitimate source of climate finance, and cannot guarantee a predictable flow of finance to developing countries.
- It rarely supports genuine low-carbon development.
- Instead, the biggest financial beneficiary of carbon trading is the Northern carbon-trading industry

This section provides a short overview of the key problems with carbon trading as a policy tool for providing climate finance. It summarises and updates the key arguments made in Friends of the Earth's previous report, *A Dangerous Obsession – The evidence against carbon trading and for real solutions to avoid a climate crunch*.¹¹¹

Carbon market offset finance is not a legitimate source of climate finance

Under the UNFCCC, owing to their historical responsibility for the problem of climate change, developed countries have a dual obligation and commitment: firstly, to reduce their emissions first and fastest to help tackle climate change, and secondly, to provide new and additional finance to pay the full incremental costs incurred by developing countries in having to develop along a low-carbon path, as well as in meeting the costs of adapting to the impacts of climate change.¹¹² Finance received by developing countries through their participation in the carbon market cannot contribute to developed countries' obligations to provide climate finance, as the funding is neither provided under the Convention nor is it 'new and additional' – a requirement enshrined in the UNFCCC. Instead, these funds are produced as a result of developed countries paying to offset their emissions reductions by supporting mitigation projects in developing countries. Counting carbon market finance towards

developed countries' climate finance obligations is therefore double counting their emissions-reductions commitments. The effort by developed countries to expand carbon trading and to conflate carbon market finance with public funding for developing countries is simply a tactic deployed by those countries to avoid fulfilling their obligations under the UNFCCC.

Carbon market finance rarely supports genuine low-carbon development

Even though carbon market finance does not legitimately contribute to developed countries' commitments to provide adequate new and additional public finance, the governments of many developing countries see the prospects for delivery of these commitments as low and therefore regard carbon market finance as a second best option. However, experience shows that carbon market finance has little incentive to support the kinds of activities which will genuinely contribute to low-carbon sustainable development and transformation of developing country economies away from fossil fuels while also meeting the energy needs of their populations. In addition, there has so far been very little interest from the carbon market in investment in the poorest countries and communities. Even in countries that have attracted many Clean Development Mechanism (CDM) offset projects, the profits have gone to the

largest polluters in these countries – often transnational companies – rather than governments or communities.

Over one quarter of offset credits estimated to be issued in 2012 from CDM projects currently in the pipeline will come from large firms making minor technical adjustments at a few industrial installations to eliminate hydrofluorocarbons (HFCs) and nitrous oxide (N₂O). In contrast, only 11 per cent of credits are projected to come from CDM projects involving the production of renewable energy from wind or solar. Furthermore, most CDM credits generated in 2012, nearly 80 per cent in total, will come from the four advanced developing countries of China, India, Brazil and Mexico.¹¹³

The underlying cause of this failure of carbon market finance to support genuine low-carbon development in developing countries is central to the trading mechanism itself, as the majority of offset project developers are involved in the carbon market to maximise the returns on their investment. This drives an attraction to 'low hanging fruit' – the climate mitigation projects which have the greatest returns for the least cost. Projects that invest in renewable energy or clean energy provision in poorer, less developed communities are rarely considered attractive investments and therefore cannot be expected to attract finance from the private sector, except for the very limited number of more socially responsible businesses. Because of

the attraction of 'low hanging fruit', most carbon market finance finds its way to the most industrialised developing countries, by-passing the less industrialised ones which have very significant needs in terms of funding for low-carbon development and climate adaptation.

Furthermore, while funding is needed by the more industrialised developing countries to help them shift onto low-carbon development paths, carbon market finance is often doing the opposite, allowing developing countries to become further locked in to dirty development. In September 2007 the CDM board ruled that super-critical coal combustion plants could receive offset credits. These are more efficient than plants using older technology, but are still highly carbon intensive, producing high levels of carbon for each unit of electricity generated. Although discussions are underway on how to change CDM rules to channel more finance to poorer countries and more beneficial projects such as small-scale renewable energy, there is very strong lobbying against tighter rules.

The biggest financial beneficiary of carbon trading is the Northern carbon-trading industry

Research by the organisation Carbon Retirement on CDM projects in developing countries found that only 28 per cent of total funds received for offset credits under the CDM went directly into mitigation projects in developing countries, for example into capital expenditure and project maintenance. The remaining funds raised went into fees and profits for other actors involved in the trading process, including 30 per cent to banks and project investors, 17 per cent to company shareholders of the project developer, and 25 per cent into taxes, Adaptation Fund fees, bank interest and fees to carbon-trading brokers.¹¹⁴ Hence a greater proportion of the funds raised are being recycled back into the Northern-

based carbon-trading industry than are going into projects that support mitigation in developing countries.

The CDM has also recently come under fire because of the level of additional fees paid to Northern-based consultants by developing countries participating in the scheme. A recent investigation by the British newspaper, the Guardian, exposed a Norwegian company that has so far charged €25,600 for two assessment visits to Nepal to validate and verify a Nepali government greenhouse gas reduction programme. Under the programme, farmers receive subsidies from the Nepali government to install equipment to produce methane cooking fuel from animal and human waste, reducing their use of firewood and other fuels and thus reducing their carbon emissions. The consultancy fees charged would pay for 58 of the carbon-cutting biogas projects the Nepali government is trying to set up.¹¹⁵

Carbon trading cannot guarantee a predictable flow of finance to developing countries

Even if we could ensure that carbon market finance only went to beneficial low-carbon development projects, carbon trading will never provide the reliable and predictable flows of finance to developing countries that are necessary to support well-planned sustainable development. This is because these flows are by their very nature unpredictable, depending as they do on the price of carbon at any given time.

Carbon trading schemes, including the EU ETS and America's sulphur dioxide trading scheme, have shown acute price volatility. The price of offset credits traded in the EU ETS has varied from over €30 to as little as €0.03 in the past five years.¹¹⁶ Similarly, since its launch in the mid 1990s, prices on America's sulphur dioxide market have fluctuated, on average, by more than 40 per cent per year.¹¹⁷ As is the case in other

commodity markets, this price volatility in carbon markets is aggravated by the involvement of speculators. According to the United Nations World Economic and Social Survey 2009, "the trading of emission certificates as financial assets and speculative instruments can generate a high volatility in the price of carbon."¹¹⁸

Even more worrying is the growing use in the global carbon market of highly complex financial instruments similar to those that brought about the sub-prime mortgage crisis in the US and the subsequent global economic crisis. Despite the highly destructive impacts of the financial crisis on the global economy, developed countries have so far failed to introduce tighter regulations on the opaque world of financial derivatives instruments. Such products have been described by US businessman and investor Warren Buffet as "financial weapons of mass destruction."¹¹⁹ Their use in the carbon market, combined with the fundamental difficulty in proving whether offset projects have delivered emissions reductions which would not otherwise have occurred, risk the development of 'subprime carbon', creating offset credits that carry a relatively high risk of not constituting real emissions reductions¹²⁰, and developing a speculative bubble in the carbon market. Reliance on carbon market finance as a source of funding for low-carbon development is extremely perilous and therefore inadvisable.

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Potential sources of climate finance

This section looks at five priority solutions for finding the finance needed for developed countries to fulfil their obligations to provide adequate support for developing countries' action on climate mitigation and adaptation. These solutions are:

- the introduction of a global Financial Transaction Tax
- tackling tax evasion
- redirecting fossil-fuel subsidies
- expanding Special Drawing Rights
- increasing carbon and energy taxation.

These have been selected because they have the potential to mobilise significant funds for climate finance while at the same time being less likely to create a significant additional burden on ordinary working people in developed countries or detract from public spending on key domestic priorities such as health, education and the provision of other public services. Where the finance is drawn from new types of taxation or by implementing existing tax rules, as with policies to crack down on tax evasion, the focus is on previously under-taxed sectors in the developed world, including high-value individuals, multinational companies, and speculative investors, or on excessive consumption of energy. Proposals are also accompanied by measures to mitigate regressive impacts. This is the most equitable option, considering: the significant fiscal squeeze faced by many developed countries as a result of the financial crisis; the policy of public spending cuts being implemented by many developed countries which will in many cases have the worst impacts on poorer sections in society¹²¹; and the broader economic changes that have taken place over the last 30 years and which have contributed to the current economic crisis, including the significant decline in the ratio of wages to profits across much of the developed world.¹²²

It is likely that a combination of the five solutions put forward here would need to be introduced to provide adequate funds to meet developed countries' obligations for developing countries' climate finance. However, it is not expected that, if implemented, the total revenue from each solution would go towards these obligations alone. There are other legitimate domestic demands on some of these potential sources of public finance, including health, education, domestic action on climate change, and plugging public deficits resulting from the financial crisis. However, we are confident that these solutions, if implemented together, could go a very long way to helping developed countries meet their obligations under the UNFCCC.

Financial Transaction Tax

- **The introduction of an international Financial Transaction Tax, a new, global tax on cross-border financial transactions could generate additional government revenue of US\$400 billion.**
- **The tax is geared towards speculative traders in the global finance industry and would not cover the financial transactions of ordinary consumers, such as payments for goods, pay checks or cross-border remittances.**
- **Campaigners are calling for one quarter of the revenue to be directed towards meeting developed countries' obligations for developing countries' climate finance.**

The Financial Transaction Tax (FTT) is a proposed new tax on specific types of cross-border financial transactions. It has significant potential to contribute large amounts to Annex I government revenues generally, including contributions to the climate finance of developing countries. The proposal builds on the idea developed by Nobel Laureate economist James Tobin for a tax on all on-the-spot conversions of one currency into another, with the aim of generating government revenue while at the same time curbing excessive and highly destructive speculative activities in international currency markets. The FTT proposal has widespread support and a recent IMF report has noted that it is technically feasible. In Box 8 below, we explore how the FTT would work and the potential it has as a source of extra government revenue for spending on key issues like climate finance.

Box 8. Financial Transaction Tax: How it works

The content below is informed by the Robin Hood Tax campaign, the UK coalition supporting international action for greater taxation of the financial sector, most especially the introduction of Financial Transaction Taxes. For more information please see the coalition website: <http://robinhoodtax.org.uk>.

What is the solution?

Financial sector taxation: having the financial sector pay its fair share. The preferred method is via Financial Transaction Taxes (FTTs), however taxes on profits, remunerations and balance sheets are all under discussion. FTTs cover financial assets, such as shares (stocks/equities), bonds (government/corporate), currency (foreign exchange) and derivatives (futures, forwards, swaps and options). The taxes would not affect ordinary consumer financial transactions such as payments for goods, pay cheques or cross-border remittances.

Key arguments

• **The global financial sector is currently relatively under-taxed – FTTs would make taxation of the sector more equitable:** While the financial sector has expanded dramatically over the past decades and has become a predominant economic actor, it has remained relatively speaking under-taxed. This is because unlike other sectors it is not liable to VAT. This sector, which was at the core of the recent financial crisis that gave rise to the current global economic downturn, now needs to shoulder its fair share of the tax burden. Implementation of FTTs would help redress the current imbalance where much of taxation is borne on the wages and consumption of ordinary working people.

• **The volume of speculative financial market transactions is excessive, as is the overall size of the financial sector relative to the real economy – FTTs would help rein in the dangerous ‘casino economy’ of global finance:** The casino economy – in which financial products are the commodities to be traded, not real goods and services which benefit wider society – has exploded in the last two decades. As a result, the majority of financial transactions are now divorced from real economic growth and, very fundamentally, job creation. Just in the past decade, the trading of derivatives and foreign exchanges has far surpassed real global trade.¹²³ In 2008, for example, the value of financial transactions was approximately 74 times higher than nominal global gross domestic product. In 1990, it was only 15 times higher.

In terms of regulation, financial authorities have lost a great deal of control over global finance since the deregulation of the 1980s and 1990s. FTTs would have the effect not only of generating revenue from an as yet relatively under-taxed sector of society but would also serve to decrease the number of transactions that take place in the global financial sector that are socially useless and even dangerous because of their potential to create speculative bubbles and thus significant risks to the real economy.¹²⁴ FTTs would help stem short-term speculative trading carried out by day traders who hold assets for only minutes or hours. It would make a dent in the worst excesses of this type of behaviour: computer-generated high-frequency trading where transactions follow trends in price movements rather than the value of the underlying asset.

More about FTTs

The tax rate proposed for FTTs varies from 0.005 per cent on currency transactions to 0.5 per cent on share transactions. This has the potential to generate up to US\$400 billion per year in additional revenue if implemented internationally.

FTTs would not have a negative impact on mid-term and long-term investors, such as pension funds, as transactions tend to be very low frequency (perhaps once a year) as opposed to those generating income through constantly flipping stock and other assets.

A widely held myth is that FTTs have to be levied globally or the trade will migrate to an untaxed territory. In the UK, there is an FTT on share transactions of 0.5 per cent which is designed in such a way that the geographical location of the trade cannot lead to avoidance of the tax. To own shares in companies listed on the London Stock Exchange (that gives you legal entitlement to the proportion of the company you now own) you have to pay the tax. The UK's Stamp Duty Reserve Tax produces revenue of more than US\$4 billion a year, with London's stock exchange remaining one of the most robust in the world.

Over the last few decades FTTs have been implemented on a range of assets including stocks, bonds and certain derivatives. FTTs are commonplace and have been introduced permanently or temporarily in at least 40 countries, including: Argentina, Australia, Austria, Belgium, Brazil, Chile, China, Colombia, Denmark, Ecuador, Finland, France, Germany, Greece, Guatemala, Hong Kong, India, Indonesia, Ireland, Italy, Japan, Malaysia, Morocco, Netherlands, New Zealand, Pakistan, Panama, Peru, Philippines, Portugal, Russia, Singapore,

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Box 8. (continued)

South Korea, Sweden, Switzerland, Taiwan, UK, US, Venezuela, and Zimbabwe.

Feasibility: The principal reason why FTTs are feasible is the almost total automation and increasing centralisation of financial markets. This has been created by the major banks and encouraged by finance ministries, as it is a strong means by which to counter settlement risk (ie one or other of the counterparties defaulting on a deal). Advances in modern communication technology make it possible to capture the tax at the point when deals are settled. FTTs are an inexpensive form to collect compared with income tax or Value Added Tax (VAT).

Political and academic support: FTTs already have a large number of supporters. French President Nicholas Sarkozy, Spanish Prime Minister Zapatero and German Chancellor Angela Merkel number amongst them. The EU parliament and European Commission have also spoken out in favour. In academia, Joseph Stiglitz, Paul Krugman, Dani Rodrik, Geoffrey Sachs, and Paul Volcker, along with 350 more economists, have given backing to the idea. It is also supported by influential financiers George Soros and Warren Buffet.

Distribution of the revenue raised: In terms of how the money would be distributed, there are number of different proposals supported by civil

society organisations, but most groups in Europe and North America are supportive of splitting the revenue, with 50 per cent of the money generated going towards fighting the deficit and protecting the poorest in the country where the tax has been generated and in some of the other G20 countries, and the other 50 per cent divided evenly between helping developing countries achieve the Millennium Development Goals and adapting to and mitigating against the impacts of climate change. Many groups see the UN as the only institutional framework with the legitimacy to administer funds dedicated to global purposes.



Tackling tax evasion

- Globally, tax avoidance by wealthy individuals and multinational companies is worth hundreds of billions of dollars per year.
- Clamping down on tax avoidance in developed countries could provide significant additional government revenue, part of which could be directed towards providing climate finance for developing countries.
- Tax avoidance in Europe is estimated at 2-2.25 per cent of European Gross Domestic Product (GDP): €236-266 billion in 2009.

Tax avoidance by wealthy individuals and multinational companies costs national governments billions of dollars in lost revenue every year. Closing down the mechanisms which allow this tax avoidance could significantly increase the revenues available to governments to spend on desirable social goods such as health, education, housing, and, critically, tackling climate change and adapting to its impacts. While global figures are not available, the French senior tax officers trade union (SNUI) recently estimated that cracking down on tax avoidance across Europe would account for 2-2.25 per cent of European GDP, or €236-266 billion based on 2009 figures. A 2008 US Senate report put losses of US tax revenue from offshore tax abuses at

US\$100 billion per year.¹²⁵ The British overseas development charity Christian Aid estimates that tax dodging in the developing world costs its governments US\$160 billion a year.¹²⁶

Clamping down on tax avoidance in developed countries could provide significant additional government revenue, part of which could fulfil obligations to support developing countries to develop cleanly and adapt to the impacts of climate change. The measures needed to do this, however, would be best implemented on a global scale, and this scenario would mean additional benefits for developing countries, by returning lost revenue to their governments to spend on development needs.

The Task Force on Financial Integrity & Economic Development, part of the Global Financial Integrity project – a consortium of governments and research and advocacy organisations focused on achieving greater transparency in the global financial system for the benefit of developing countries – has identified five key demands for financial transparency which would help national governments to crack down on the worst excesses of tax evasion globally. These demands, and background information on why they would be effective, are included in Box 9.

Box 9. Five demands for global financial integrity

The text below is taken directly from the demands of the Task Force on Financial Integrity & Economic Development, a global initiative which promotes national and multilateral policies, safeguards, and agreements aimed at curtailing the cross-border flow of illegal money. For more information see the taskforce website: <http://www.financialtaskforce.org/>.

Trade mispricing:

Background: Approximately 60 per cent of global trade is conducted by multi-national corporations and half that amount is between subsidiaries of a parent company. A 2004 OECD paper entitled *Institutional Approaches to Policy Coherence for Development* notes that since “intra-group transactions are not subject to the same market forces as transactions between unrelated parties operating on the free market, there is a huge potential for profit shifting via under or over pricing of intra-group transactions.” In other words, unless sufficient attention is given to transfer pricing issues, it is possible that in practice a developing country will derive little or no revenues from the foreign direct investment attracted to its territory.

Action item: Require that the parties conducting a sale of goods or services in a cross-border transaction sign a statement in the commercial invoice certifying that no trade mispricing in an attempt to avoid duties or taxes has taken place and that the transaction is priced using the OECD arms-length principle.

Country-by-country reporting

Background: Tax avoidance is a global problem. It involves the abusive exploitation of gaps and loopholes in

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Left: a Financial Transaction Tax will generate new government revenue to tackle climate change and curb harmful speculation in the global financial markets.

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Box 9. Five demands for global financial integrity (continued)

domestic and international tax law that allows multinational companies (MNCs) to shift profits from country to country, often to or via tax havens, with the intention of reducing the tax they pay on some or all of their profits. Tax avoidance on such a large scale is facilitated by a lack of transparency in the way MNCs report and publish their accounts. Making MNCs accounts more transparent would help tackle tax avoidance at very low cost.

Action item: Require that all multinational corporations report sales, profits, and taxes paid in all jurisdictions in their audited annual reports and tax returns.

Beneficial ownership

Background: The flow of illicit money including tax evasion, the proceeds of corruption, criminal cartels and a host of other global ills can be traced to the lack of information about the beneficial owners of corporations, trusts and foundations. Often located in some 70 secrecy jurisdictions around the world, these entities can absorb, hide, and often transfer wealth instantaneously outside the reach of the law enforcement and tax agencies of the countries whose laws are broken. In many instances, the illicit activities of these entities do not benefit the local population and they frequently have no legitimate business purpose. Furthermore, beneficiaries of these activities often remain secret. In effect, these entities operate in a world distinctly separate from, but utilising the framework of, the legitimate global economy.

Action item: Require that the beneficial ownership and control of companies, trusts and foundations be readily available on public record to facilitate effective due diligence.

Automatic tax information exchange

Background: Globalisation and the liberalisation of economic activity has converted the private sector into a world without borders. This creates a major problem for national tax authorities because similar changes in their enforcement powers have not kept pace with industry. National tax authorities continue to be constrained by national borders and collecting tax revenue has been difficult. Additionally, bank secrecy and other confidentiality laws in many jurisdictions (such as tax havens and international financial centres) prevent disclosure of relevant information by financial institutions to government authorities. Further, lax response by tax authorities in those jurisdictions to information requests from foreign governments often delays or prevents cases against tax cheats.

Action item: Require governments to collect from financial institutions data on income, gains, and property paid to non-resident individuals, corporations, and trusts. Mandate that data collected automatically be provided to the governments where the non-resident entity is located.

Money laundering

Background: Under current US law it is legal for American banks to accept the proceeds resulting from handling stolen property, customs crimes, counterfeiting, and trafficking in stolen property when those crimes occur outside US borders. American banks are also permitted to accept deposits that are derived from sex and arms trafficking, racketeering and dozens of other crimes that, if they were committed in the US, would be predicate crimes for a money laundering offence. Indeed, the United States was found partially non-compliant with international anti-money laundering standards in the most recent Financial Action Task Force peer review. While predicate crimes for a money laundering charge – when the crime is committed outside a nation's borders – are more restrictive in European nations they are by no means universal. Corrupt officials, criminals, tax evaders and terrorist organisations can easily transmit the proceeds of illegal activity to the safety of the western banking system by simply conducting legal arbitrage. It is estimated that some US\$900 billion in illicit funds are funnelled out of developing countries each year. This depletion of capital undermines the ability of poor countries to build their economies and become productive and vibrant participants in the world economy. Porous anti-money laundering regimes in countries where illicit funds are most likely laundered contribute to illicit flows.

Action item: Require that predicate offences [offences from which proceeds have been generated] for a money-laundering charge are harmonised at the most restrictive level and codified.

Redirecting fossil-fuel subsidies

- **Global subsidies for the production and consumption of fossil fuels are estimated at US\$700 billion per year.**
- **Producer subsidies are mostly transfers from Northern governments to companies involved in fossil-fuel extraction, processing and distribution.**
- **Redirecting these producer subsidies would have minimal impacts on ordinary people in developed countries and could make available significant revenue for climate finance in the developing world.**

Global subsidies from governments for fossil fuels, a major source of global carbon emissions, fall into two broad categories: producer subsidies – transfers to large oil and gas multinationals to support exploration, production and distribution of fuel – and consumer subsidies, largely transfers made by governments to reduce the price of fuel products from these processes so that they are available at a rate that is affordable to consumers.

In total, global subsidies for fossil-fuel production and consumption are estimated at around US\$700 billion per year.¹²⁷ According to the International Energy Agency, consumption subsidies in developing countries were approximately US\$557 billion in 2008.¹²⁸ Subsidies from developed countries to support production are harder to estimate, but according to the Organisation for Economic Co-operation and Development (OECD) the global total could be as much as US\$100 billion per year.¹²⁹ A significant proportion of producer subsidies involve direct transfers from developed country governments to Northern-based multinational companies involved in the global extraction, processing and distribution of fossil fuels. Neither of these estimates includes spending by

developed countries to secure fossil-fuel supplies. A recent article in the journal *Foreign Policy* pointed to research suggesting that the US military alone has spent US\$7.3 trillion in the last three decades keeping aircraft carriers in the Persian Gulf in order to secure oil shipments.¹³⁰

International and regional financial Institutions and export credit agencies are also significant sources of funding for the production of fossil fuels globally – often to support the extraction of these fuels to developed countries. The overall volume of World Bank fossil-fuel subsidies increased by 102 per cent in 2008, with a 642 per cent increase for coal alone.¹³¹ According to the campaigning organisation Christian Aid, the World Bank's coal financing for 2010 will be US\$4.4 billion.¹³²

Both types of subsidies are a barrier to effective action on tackling climate change. They contribute to artificially increasing the competitive advantage of fossil fuels over more sustainable forms of energy, and provide an incentive for energy providers to continue to invest in fossil-fuel exploration, processing and distribution rather than switching investments to more sustainable activities.

Redirecting subsidies away from fossil-fuel producers

Ultimately, effective global action on climate change requires decarbonisation of the global energy supply and thus changes to the way we use energy, which in turn necessitates bringing an end to all artificial subsidies for fossil fuels. However, as explored in section 3 on energy, even fossil fuel-based energy supplies are barely affordable for poorer communities in developing countries and poorer households in developed countries. As a result, it would be both unfair and difficult to tackle consumer subsidies for fossil fuels before action is taken to reduce the cost of alternative renewable energy sources, for example

via the implementation of a global feed-in tariff programme, as well as action to reduce the need for fossil fuel-based energy use.

However, subsidies to fossil-fuel producers do not play the same important social role. The economic benefits associated with the subsidies largely accrue to the senior executives and shareholders of fossil-fuel companies. As a result, redirection of fossil-fuel producer subsidies could be undertaken soon without significant detrimental impacts on energy affordability and energy access.

Estimates of fossil-fuel subsidies in developed, Annex I countries vary. According to Oil Change International, annual fossil-fuel subsidies from Annex I countries can be credibly and conservatively estimated at US\$67 billion.¹³³ Other estimates put fossil-fuel subsidies in OECD countries between US\$57 billion and US\$100 billion annually.¹³⁴ The phasing out of these subsidies and their redirection to tackling climate change and supporting adaptation in developing countries could plug an important gap in the revenues needed to fulfil the climate-finance obligations of developed countries.

Additional benefits of cutting subsidies to dirty energy

The Kyoto Protocol already calls on countries to remove fossil-fuel subsidies and there is widespread agreement that the staggered phasing out of producer subsidies in Annex I countries could take place relatively quickly. Commitments to begin such a process were made by the G20 at their meeting in Pittsburgh in 2009 and again in Toronto in 2010.¹³⁵ There is also support for reducing fossil-fuel subsidies as a tool for tackling climate change from a number of leading global figures, including UN Secretary General Ban Ki-moon, Nicholas Stern, Al Gore, and John Browne (former CEO of the multinational oil company BP).¹³⁶

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The coordinated implementation of this policy by Annex I countries would be unlikely to harm ordinary working people through the passing on of prices. As mentioned above, the subsidies themselves have little effect on the prices paid by consumers, as the additional benefits mostly accrue to fossil-fuel company shareholders and executives. However, governments would need to ensure that companies did not pass on the loss of the subsidies to consumers through energy price hikes.

Removing these subsidies would have knock-on benefits in the fight to avoid catastrophic climate change. Firstly, it would serve as a mitigation tool, contributing to reductions in global emissions. This is clear from estimates by the International Energy Agency (IEA) about the benefits that phasing out fossil fuel could achieve in terms of reductions in global greenhouse gas emissions. According to the IEA: “Phasing out subsidies for fossil fuels between 2011 and 2020 would cut global oil demand by 6.5 million barrels per day in 2020, or about one-third of current US demand. It would also cut global energy demand by 5.8 per cent by 2020, the equivalent of the energy consumption of Japan, New Zealand, Korea, and Australia combined. Greenhouse gas emissions savings would be the equivalent of current emission of France, Spain, Germany, the UK, and Italy combined.”¹³⁷ Secondly, removing subsidies will make renewable energy more competitive, encouraging greater investment in the development of these technologies by providing greater market certainty for investors.

Special Drawing Rights

- **Special Drawing Rights (SDRs) are reserve assets created by the International Monetary Fund (IMF) which governments can use to increase financial reserves in their central banks or to convert into hard currency.**
- **The IMF allocated new SDRs to help countries’ finance policy responses to the global financial crisis in 2009 and similar new allocations could be used to help meet developed countries’ climate-finance obligations.**
- **New allocations of SDRs of approximately US\$100 billion per year could be made without leading to inflation.**

Another source of global finance which could contribute to the climate-finance needs of developing countries while creating minimal burden on developed country economies is the special drawing right (SDR), an international reserve asset specially created by the International Monetary Fund (IMF).¹³⁸ Use of SDRs to support climate mitigation and adaptation is supported by a growing body of developing countries in the UNFCCC negotiations, including the Africa group of countries,¹³⁹ and has increasing support from climate campaigners and development agencies. How the SDR would work as a funding source and could contribute to developing countries’ action on climate change is set out in Box 10.

It is important to note that there is a risk that extending SDRs as a source of climate finance could increase the power of the IMF, which has a very problematic history. The institution was a major driving force for the imposition of highly damaging structural adjustment programmes (SAPs) on developing countries, which required them to implement extensive programmes of privatisation and deregulation as a condition of receiving IMF finance in

Box 10. ActionAid USA fact sheet – What are Special Drawing Rights and how can they be used to finance climate adaptation and mitigation?

The text below is taken directly from a briefing by ActionAid USA for UNFCCC negotiators published in June 2010. The full briefing is available online at: [http://actionaidusa.org/assets/pdfs/climate_change/SDR_Factsheet - UNFCCC delegates.pdf](http://actionaidusa.org/assets/pdfs/climate_change/SDR_Factsheet_-_UNFCCC_delegates.pdf).

What are Special Drawing Rights (SDRs)?

SDRs are reserve assets created by the International Monetary Fund (IMF). SDRs are allocated to IMF member countries in proportion to their quotas, which are based on a country’s relative weight in the global economy. The value of SDRs is derived from a mix of four major currencies: the US dollar, the Euro, the Japanese yen, and the UK pound. SDRs were created in 1969 during a shortage of both dollars and gold, but they have been used more recently in response to the global financial and economic crisis that struck in 2008.

Why should SDRs be used for climate finance?

SDRs can contribute to the urgent adaptation and mitigation needs of developing countries. They are not a “silver bullet” solution to climate financing, but are one among several alternative financing mechanisms which should be seriously considered as a source of funding.

How can SDRs be used?

A government can use SDRs to build up reserves at its central bank (since increasing reserves provides an instant credit boost and usually means that a country can borrow on better terms), or it can convert its SDRs into hard currency. When a government converts its SDRs into hard currency, it is required to pay a small interest charge, applicable until that government converts the currency back into the form of SDRs. Currently, with interest rates low in response to the financial crisis, the interest rate for SDRs is less than 0.5 percent. However, there is no fixed price for interest rates on SDRs, so rates will likely rise along with other interest rates as the global economy recovers.

Can the IMF condition the use of SDRs?

Once a government converts its SDRs into hard currency, it can use the funds for whatever purpose it chooses. The IMF cannot impose any conditions and it has no voice in how countries use their SDR-derived funds.

When were SDRs last used?

In April 2009, the G20 called for an allocation of SDRs in response to the global financial and economic crisis. In less than five months, the IMF made a general allocation of SDRs worth about US\$250 billion. Based on their IMF quotas, wealthy countries received two-thirds of the SDRs, or approximately US\$165 billion. However, because developed country governments can raise funds on world markets at about the same cost as the SDR interest charge, they generally do not need additional reserves.

How can SDRs be used for climate finance?

There are at least three proposals for how SDRs can be used for climate finance:

1. In December 2009 philanthropist George Soros proposed that developed countries lend US\$100 billion worth of the SDRs from their 2009 allocation to capitalise a Green Climate Fund. He suggested that the surplus value of the IMF's gold reserves could cover the interest payments on these SDRs.¹⁴⁰

2. In March 2010 the IMF released a staff paper which proposed that developed countries use their reserve assets (including SDRs) as the initial capital base for a Green Climate Fund. The Green Fund would issue low-cost "green bonds" to private investors and other holders to generate additional finance for mitigation purposes. Developed countries would subsidise the Green Fund from their own resources to provide developing countries with grant funding for adaptation needs. The authors of the IMF paper make clear that they are not proposing that "the IMF itself would create, finance, or manage the Green Fund."¹⁴¹

3. ActionAid has proposed that in addition to developed countries transferring SDRs from their 2009 allocation to a Green Fund – which should be under the authority of the UNFCCC – the IMF should also issue new, regular allocations of SDRs to fund climate needs. For new allocations of SDRs, ActionAid proposes that both developed and developing countries should convert their SDR allocation into cash to be transferred to a UNFCCC fund.¹⁴² The fund would then make grants to developing countries for climate adaptation and mitigation, based on rules established by its governing body.

How much money could SDRs generate?

Developed countries could immediately contribute at least US\$100 billion from their 2009 SDR allocation. There is no technical limit on the value of future allocations of SDRs.

Would new allocations of SDRs lead to inflation?

New allocations of SDRs at the levels discussed in this brief – approximately US\$100 billion per year – would not lead to inflation. World GDP is approximately US\$60 trillion dollars. Injecting another US\$100 billion into the economy each year – only about one-sixth of one percent of world GDP – should not have any inflationary effect.

Who would pay the interest charges?

Traditionally, any country which converts SDRs into hard currency would have to pay an interest charge. However, when SDRs are used for climate finance (particularly for adaptation) developing country governments should not bear any of the costs involved. This follows from the "polluter pays" principle, in which adaptation finance is a form of compensation for the measures developing countries are forced to take to deal with climate impacts their emissions did not create. Therefore, the interest on SDRs should be paid by developed countries. Alternatively, governments may collectively decide that the global climate crisis warrants the cancellation of interest charges on SDRs, or even of principal repayments of SDRs.

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its role as global lender of last resort. The IMF's SAPs undermined the sovereignty of developing countries over their national economies, undermined economic development and lowered living standards by fostering import dependency, and very often led to big declines in access to and quality of essential public services like health and education.¹⁴³ While the IMF's role in the global economy has recently improved, it still has a very unbalanced governance structure. European countries currently hold nine of the 24 seats on the IMF's executive board, which is supposed to represent all 187 countries that are members of the institution.¹⁴⁴

If SDRs are used as a source of climate finance it is essential that the IMF has no power over the governance and use of the funds. It may be possible to go even further, with SDRs being issued by an institution other than the IMF. The Italian NGO Campagna per la Riforma della Banca Mondiale (CRBM), has proposed issuing climate-SDRs (or C-SDRs) linked to countries' emissions target performance. C-SDRs would be issued on an annual basis by an institution other than the IMF.

Below: special Drawing Rights can contribute to the urgent climate adaption needs of developing countries.



Carbon and energy taxation

- **As well as driving emissions reductions, carbon and energy taxation can provide increased government revenue, some of which could be directed towards developing country climate finance.**
- **An EU-wide carbon tax and a proposal for a graduated ‘Starter Tax’ in the US could together bring in around US\$200 billion per year and making only a quarter of this available for climate finance could still provide over US\$40 billion per year.**
- **A levy on international aviation could also bring in an additional US\$10 billion per year.**

Carbon and energy taxation is explored earlier in this report as a climate change mitigation solution. It has potential both to provide incentives for reducing CO₂ emissions when used in conjunction with other policy measures, and as a source of increased government revenue for spending on climate finance. The Swiss government, which already has a significant carbon tax in place domestically (explored briefly on page 25), has put forward a proposal in the UNFCCC negotiations for a uniform global tax of US\$2 per tonne of CO₂ on all fossil-fuel emissions. This is equivalent to a tax of around 0.5 US cents per litre of liquid fuel.¹⁴⁵

Potential revenue from carbon and energy taxes

Proposals for global taxation regimes are problematic from the point of view of democratic control over taxation and also highly unlikely to lead to agreement at the international level. However, the Swiss proposal gives an indication of the revenue-raising potential of carbon taxation. According to a study by Alex Wilks on potential sources of climate finance, the amount raised by a carbon tax would depend on the rate, the coverage, and the market response.

However, the Swiss proposal for a global tax of US\$2 per tonne could generate US\$40-50 billion per year.¹⁴⁶ In a recent Communication, the European Commission asserted that a carbon price of €30 per tonne would be needed in the EU ETS in order to achieve a reduction of EU emissions of 30 per cent by 2020. Applying this to EU-wide greenhouse gas emissions, according to 2008 figures from the European Environment Agency, gives an indication of the much greater potential for an EU-wide tax on all greenhouse gas emissions, with €30 per tonne raising approximately €148.2 billion.¹⁴⁷ In the US, campaigners estimate that revenues in the first year of the introduction of a graduated ‘Starter Tax’ of US\$37 per ton of carbon emitted (equivalent to US\$10 per ton of CO₂) would be approximately US\$55 billion a year.¹⁴⁸

Proposals for an international aviation levy

One potential area of carbon and energy taxation which has already gained interest is the proposal for an international aviation levy. Several proposals for different forms of levy on international flights have been put forward in the UNFCCC negotiations. The Maldives, on behalf of the group of Less Developed Countries, has proposed a formula based on the existing French aviation levy of US\$6 on all international economic flights and US\$62 for all business-class flights.¹⁴⁹ The levy would be collected by airlines from their passengers at the point of sale, with some of the revenue returned to airlines for the costs of administering the system.

On the basis of their proposed formula, the Maldives estimates that the levy could raise near-term revenue of US\$10 billion per year.¹⁵⁰ World Bank estimates suggest that a value added tax of 5 per cent globally would bring in about US\$20 billion.¹⁵¹ The global aviation industry has revenues of about US\$500 billion per year.¹⁵²

It is argued that earnings from such a levy would be relatively sustainable because of the relative price inelasticity of air travel.¹⁵³ With less than 5 per cent of the world’s population currently engaged in international tourism, and much of the remaining 95 per cent prevented because its costs are prohibitive, such a levy would be progressive as a fiscal measure on the global scale.¹⁵⁴ It could also be relatively easy to administer because most of the necessary systems are already in place.

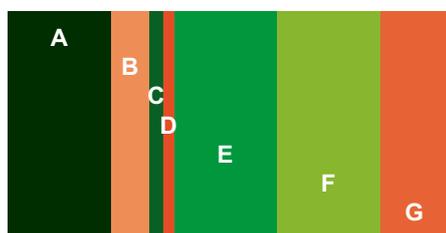
In order to be consistent with the CBDR principle, the levy would need to be implemented by Annex I countries only, applying to flights between Annex I countries and return flights departing from Annex I countries. Other exemptions or supplementary measures may also be necessary to ensure that the levy does not have regressive impacts within Annex I countries.

5. CONCLUSIONS AND RECOMMENDATIONS

The solutions in this report demonstrate the wealth of ideas that are ready to hand for tackling global carbon emissions and financing action on climate change by developing countries. Many of these solutions are already well elaborated and the only barriers to their implementation are political will and the dominance that carbon trading currently exerts over discussions on solutions to climate change by policy makers, the United Nations negotiations and the media. It is essential to elaborate and implement these and other viable, equitable and effective solutions if we are to reduce greenhouse gas emissions at the pace so urgently needed to avert catastrophic climate change.

Box 11. Estimated annual revenue for international climate finance from proposed new sources

- A.** Global Financial Transaction Tax: US\$100 billion
- B.** An EU-wide tax on greenhouse gas emissions: US\$37 billion
- C.** A graduated US carbon ‘Starter Tax’: US\$14 billion
- D.** An aviation levy covering Annex I countries: US\$10 billion
- E.** Cracking down on tax evasion by wealthy individuals and multinational companies: US\$100 billion
- F.** New Special Drawing Rights at the IMF: US\$100 billion
- G.** Redirecting subsidies to fossil-fuel producers: US\$67 billion



For climate mitigation, it is essential to transform energy production and use. This could be done by investing in renewable energy sources through the implementation of a global feed-in tariff programme, and through stronger government intervention in the form of standard setting for energy efficiency and the implementation of carbon- and energy-taxation measures.

Similar levels of intervention are essential to reduce emissions from heavily polluting industry, most notably the introduction of common standards on the use of best available technology. Dealing with the threat of carbon leakage also necessitates agreement at the UNFCCC on a safe and equitable global carbon budget, and ensuring the availability of affordable clean technologies in developing countries through the relaxation of intellectual property rights.

Tackling emissions from agriculture will necessitate rolling back unsustainable, fossil-fuel based industrial agriculture; expanding and supporting small-scale, sustainable farming around the globe; and reducing excessive consumption of the most damaging agricultural products including meat and dairy. And finally, reducing emissions from deforestation and forest degradation requires that we tackle the core drivers of these problems, notably demand for agrofuels, forest products and meat fed on soy; weak forest governance; failure to protect the land rights of forest-dwelling and Indigenous Peoples; and development models that rely on forest exploitation. This will in turn require making funding available to developing countries to incentivise and support forest protection measures, including the extension of community forest governance.

Where could this funding and other climate finance for developing countries come from? A conservative estimate of the revenue-generating potential of the finance solutions set out in this report

indicates that they could provide new and additional climate finance for developing countries of at least US\$420 billion per year (See Box 11 for a breakdown of this figure).¹⁵⁵ Furthermore, the solutions – a global Financial Transaction Tax (FTT), redirecting subsidies to fossil-fuel producers, new Special Drawing Rights at the IMF, cracking down on tax evasion by multinational companies and wealthy individuals, and new carbon and energy taxation – would have minimal impacts on ordinary working people in developed countries¹⁵⁶ and would also bring about many additional benefits of their own, including reducing dangerous volatility and speculation in the global financial markets in the case of the FTT. Furthermore, some of the solutions – like the FTT and carbon and energy taxation – would generate significant, additional amounts of revenue for developed countries’ governments to spend on public services like health and education, on plugging the big public deficits left by the bank bail-outs and government responses to the economic crisis, and on domestic action to tackle climate change and transition to low-carbon economies.

Based on the evidence outlined in this report, Friends of the Earth is calling on national governments to:

- **Bring an immediate halt to the expansion of carbon trading globally.**
- **Urgently dedicate time and resources to elaborate and implement these and many other viable, equitable and effective solutions that are available to cut emissions and deliver climate finance.**

It is now more critical than ever that we bring an end to the dangerous obsession with carbon trading and focus on the real solutions to the climate crisis.



The solutions to tackle emissions and finance action in developing countries are already to hand. All that is needed is the political will to make them a reality.

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- **US\$100 billion from a global Financial Transaction Tax (FTT)**
A new FTT of 0.005 – 0.5 per cent of the value of transactions covered by the tax has the potential to generate up to US\$400 billion per year. There are number of different proposals on how to distribute the revenue. Most European and North American NGOs support:
 - 50%: fighting the deficit and protecting the poorest in the country where the tax has been generated and in some of the other G20 countries.
 - 25%: helping developing countries achieve the Millennium Development Goals.
 - 25%: helping developing countries tackle climate change and adapt to its impacts.Based on this distribution of the revenue, approximately US\$100 per year could be made available for international climate finance.
 - **US\$50 billion from new carbon and energy taxes**
This figure is based on estimates of potential revenue from new carbon taxes applied in the European Union and United States only. If applied in all Annex I countries the revenue-generating potential of new carbon and energy taxes is much higher. The revenue potential of new carbon taxes is also variable depending on the level of taxation. Taking only an estimate made here for the EU and an available estimate for the US:
 - A carbon tax of €30 per tonne (the carbon price that the European Commission argues is needed to achieve 30 per cent emissions reductions by 2020) applied to greenhouse gas emissions across the EU (including industrial sectors covered by the EU ETS) could, according to 2008 emissions figures from the European Environment Agency, generate approximately €148.2 billion. If one quarter of this revenue was spent on international climate finance this could generate around €37 billion per year.
 - According to the American Carbon Tax Center, a US carbon

'Starter Tax' of US\$37 per ton of carbon emitted (equivalent to US\$10 per ton of CO₂) would generate around US\$55 billion a year. If one quarter of this revenue was spent on international climate finance, this could generate around US\$14 billion per year.

• **US\$10 billion from an aviation levy**

According to the proposal for an International Air Passenger Adaptation Levy put forward at the UNFCCC negotiations by the Maldives on behalf of the group of Least Developed Countries, a levy of US\$6 on all international economy-class flights and US\$62 for all business-class flights could raise US\$10 billion per year. If implemented according to the climate finance criteria set out in this report, the tax would only apply to flights between Annex I countries and return flights departing from Annex I countries. The taxation levels would therefore need to increase slightly to generate the same amount of revenue, although not significantly because of the proportion of flights which take place between Annex I countries.

• **US\$100 billion from cracking down on tax evasion by wealthy individuals and multinational companies**

An overall estimate of tax evasion from Annex I countries is not available. The French senior tax officers' union (SNUI) estimates European tax evasion at 2-2.25 per cent of European GDP or €236-€266 billion in 2009. Losses of US tax revenue from offshore tax abuses are estimated at US\$100 billion per year by the US Senate. Total Annex I-government revenue losses from tax avoidance could therefore be conservatively estimated at US\$400 billion per year. If one quarter of this additional government revenue were directed towards international climate finance this could raise US\$100 billion per year.

• **US\$100 billion per year from new Special Drawing Rights at the IMF**

According to proposals by ActionAid USA, new allocations of SDRs of approximately US\$100 billion per year could be issued by the IMF without leading to inflation.

• **US\$67 billion from redirecting subsidies to fossil-fuel producers**

According to Oil Change International, annual fossil-fuel subsidies from Annex I countries can be credibly and conservatively estimated at US\$67 billion. Other estimates put fossil-fuel subsidies in OECD countries between US\$57 billion and US\$100 billion annually.

156 NB. This assumes that adequate accompanying measures are implemented to prevent regressive impacts of new carbon and energy taxation. For examples of how these might work see the proposals from US campaigners for a 'Cap and Dividend' scheme.

CLEARING THE AIR

This report has been prepared by Friends of the Earth England, Wales and Northern Ireland as part of its campaign for a fair, strong and binding international agreement to tackle climate change. The report is being distributed to decision makers, negotiators, the media and campaigners in advance of the 16th Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC) in Cancun, Mexico in November 2010.

The report outlines why carbon trading is not the solution to climate change and sets out some of the real solutions for cutting greenhouse gas emissions and delivering climate finance. It calls on national governments to urgently dedicate time and resources to develop and implement these and other more viable, equitable and effective solutions to the climate crisis.

This report draws on the longstanding experience of Friends of the Earth as an environmental justice campaigning organisation and on the rich experience and analysis of our sister organisations in Friends of the Earth International, the largest grassroots-to-global federation of environmental justice campaigning organisations in the world. We also incorporate analysis and ideas from many policy institutions, think tanks, and multilateral institutions such as the United Nations, as well as key actors in the climate justice movement.

This full report is available online at: www.foe.co.uk/resource/reports/clearing_air.pdf.

A shorter, summary version of the report is also available at:
www.foe.co.uk/resource/reports/clearing_air_summ.pdf.

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