



COUNTDOWN TO
CO₂PENHAGEN
Time to make a difference

Countdown to Copenhagen: the race for climate justice in the UNFCCC talks

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Foreword by Mohamed Adow, ‘Cut the Carbon’ marcher and Christian Aid East Africa programme officer working on climate change

We will live tomorrow by the choice we make today



Christian Aid

Last year I took part in Christian Aid’s historic march to ‘cut the carbon’, and I walked 1,000 miles, together with a small group of people from developing countries and from the UK, to highlight what climate change is doing to the world’s poor people. These are people who have imprinted the lightest of carbon footprints on the earth and, through no fault of their own, are most vulnerable to the damage caused by greenhouse gases emitted by the developed countries.

In volunteering for this march I made a choice to raise awareness about climate injustice and to campaign for a cut in carbon emissions by the UK government and businesses. I was calling on the government of the UK to set a good example for other countries to follow, so that the world might attain a fair and just agreement on climate change that will prevent climate catastrophe while preserving the rights of the poor to reach a dignified level of development free of the privations of poverty. Throughout the UK thousands of people responded to this message and chose to stand by the poor.

The question now is what choice do we have, individually and collectively, to confront the changing climate and, indeed, the resulting poverty? What is our authority over the current state of things? In the raging climate debate our ‘ability’ to make a good choice is being called into question; this God-given ability that makes the human race the grandest phenomenon in the universe is also rendering us the most vulnerable creation. Pitiably, some nations are still sitting on the fence, oblivious of the implications their choices have on the poor.

Already the climate is changing in developing countries and the effects are disastrous for millions of people whose crops are failing and who are hungry and thirsty. This is happening because of rich countries’ carbon emissions. Today we are all bearing the brunt for the choices ‘they’ took. It is therefore important first to face up to the choices that have already been taken and then to take stock of the hard choices that we must all now make, bearing in mind the needs of the poorest people in the world

Poor people must have climate justice. They have a right to a world free from poverty and free from the injustices and depredations of climate change. We must call for global action based on the Bali road map so we cease those activities that lead to climate change and we help poor people to adapt to the inevitable and increasing impact of that change. This compels us to employ our human will and intellectual faculties to execute this choice. In effect, we must call on rich countries to repay their carbon debt.

This is what the Greenhouse Development Rights framework described in this report argues for, based on the agreed principle of ‘common but differentiated responsibilities and respective capabilities’. This framework offers a fair path through the difficult and troubled choices we face as the climate continues to change.

I braved 1,000 miles to call for action in the UK, but that was only a start – the campaign continues. Please join us and let’s act now and act fast to make Copenhagen count.

Introduction

'Climate change is the defining challenge of our age. The science is clear; climate change is happening, the impact is real. The time to act is now.'

Ban Ki-moon, UN secretary general at the opening of the Bali climate talks

In a world of poverty and inequality the climate is changing. There is no option but to face the climate crisis with urgency and resolve. This must be done in the midst of a development crisis in which more than one-third of the world's people are poor, hungry, short of water, denied basic healthcare, access to adequate education and – importantly in the context of climate change – fuel and electricity.

Being poor makes people more vulnerable to extreme weather. The bulk of the world's poorest communities are also located in places more likely to be affected by the worst the climate has to offer. And so it follows that an increase in drought, flooding, hurricanes and other extreme weather brought about by climate change is likely to expose those already in a position of extreme vulnerability to further risk.

In Christian Aid's experience and from research conducted in poor communities from Bolivia and Bangladesh to Kenya and Tajikistan, the phenomenon of more extreme weather as a result of climate change is already upon us. People whose way of life is dependent on the weather, such as those who farm and are reliant on predictable rainfall for the success of their crops, are already losing out because things have manifestly changed.

In the worst cases, such as in northern Kenya where people have for centuries reared cattle but where drought has increased four-fold, wiping out whole herds, a way of life is under threat. But throughout the developing world, a war of attrition is being fought against rains that arrive late and fall more heavily than before and against the drought that spans greater periods of time in between.

The science of climate change confirms what is already well known by many in the poorest communities. The UN's intergovernmental panel of climate scientists – the world's most eminent climatologists, geographers and meteorologists – have concluded that climate change is unequivocal and that its cause is very likely 'human activity'. Unless we are to stand in denial, there is only one logical course of action – to cease those activities that lead to climate change.

Unfortunately it is not that simple. The 'human activity' that is leading to global warming and climate change is the emission of 'greenhouse' gases, in particular carbon dioxide (CO₂) produced from burning fossil fuels – coal, oil and gas.

The UK was the cradle of the industrial revolution. Using home-grown and cheaply imported fossil fuels, we powered our way to industrialisation. The US and Canada, other European nations, Australia and, more recently, Japan, followed suit. The industrialised way of life is as intrinsically bound up in the emitting of CO₂ as the cattle-rearing people of northern Kenya's is in the weather.

Those who have experimented with reducing CO₂ emissions know only too well the difficulties. Governments in industrialised countries, afraid of prescribing any major changes in lifestyle, emphasise measures such as changing incandescent light bulbs for low-energy compact fluorescent tubes. They urge their populations to walk and cycle more and to insulate their homes. But while the importance of these actions, if taken by the majority, should not be underestimated, they are notes in the margin of the manifesto required to tackle climate change.

If the countries that led the world in industrialisation are to lead the way to a zero CO₂ future – the only safe option available – then every aspect of life in these countries will have to be examined. This includes the way electricity is generated; the way people move around; the way homes are heated and offices cooled; the way new buildings are designed and old ones modified; and the way goods are produced and sold.

This Herculean re-engineering job is possible and possibly desirable, although only if a balance is struck between the likely increased costs of energy and the savings brought about through living more efficiently and the greater energy security of using renewable sources wherever possible. But the re-engineering of industrialised economies is only half the job of tackling climate change.

For while the world's poorest are most vulnerable to worsening weather, they also have the right to develop. This does not mean they or anyone else necessarily has a right to add further CO₂ to the atmosphere, but that if they are to achieve more secure, sustainable and dignified lives, with greater opportunities, this is dependent to some extent on access to energy.

And yet the real kernel of inconvenient truth lurking at the heart of the climate change debate is that industrialised nations have not only gobbled up their share of the atmosphere, but also quite a large proportion of that needed by those yet to undergo industrialisation. The tried-and-tested method of development through high fossil fuel dependency, now demonstrably unsustainable, is no longer possible.

International negotiations on climate change were launched at a meeting in Bali, Indonesia, in 2007 and are due to conclude in Copenhagen, Denmark, at the end of 2009. Their importance cannot be understated. They must deliver an agreement that is capable of reducing emissions sufficiently to stop a climatic catastrophe while simultaneously ensuring poor people are not denied their right to development.

Those concerned with the rights of poorer people, both to live in a world free from the impacts of human-induced climate change and to enjoy a future of dignity and opportunity, must approach these negotiations with vigour. Nothing short of a massive and sustained international campaign for climate protection and justice will be needed to ensure politicians have a mandate to make tough decisions.

It is against this backdrop that Christian Aid has developed, in partnership with EcoEquity in the US, a framework for measuring progress within these talks against climate and development benchmarks. Known as Greenhouse Development Rights, the framework differentiates between countries according to their responsibility for climate change and their capability to take on the burden of avoiding climate catastrophe.

A world of poverty and inequality that is also facing a climate crisis, needs a fair, comprehensive, international agreement to deal with the threat. Without this, it is Christian Aid's belief that humanity will fail on both counts. But development and environment campaigners can help ensure failure is not an option.

1. The climate of poverty

'Because of the saltwater, we have to suffer hardship just to survive. We can't even wash our own vegetables or fish with the water. If you wash anything with it and then leave it, you'll see it goes black.'

Minu Basar, Kayabunia village, Bagerhat District, Bangladesh

Key points

Poverty is already being further entrenched by climate change. Christian Aid research has revealed that:

- sea level rise along the coastline of Bangladesh has already deprived many poor communities of access to fresh water because their supply has turned salty
- drought in northern Kenya has increased four-fold in the past 25 years, driving many cattle-rearing families, or pastoralists, out of business
- community elders in rural Bolivia have noticed profound changes in the natural signals on which they rely in order to anticipate when to sow seeds and plant crops.

But poor people also need access to energy in order to improve their standard of living and increase job opportunities, thus threatening further increases in global greenhouse gas emissions:

- some 2.4 billion people do not have secure supplies of fuel for cooking, heating or cooling
- about 1.6 billion people, 75 per cent of them living in rural areas, lack access to electricity¹
- a doubling of gross domestic product (GDP) in China between 1995 and 2005 has been accompanied by an increase of CO₂ from 3.2 billion tonnes in 1995 to 5.2 billion tonnes in 2004.²



Minu Basar (second from right) with others from a village water council supported by Christian Aid partner BCAS in Bangladesh
Christian Aid/Mohammadur Rahman

In Bangladesh, Minu Basar, wife, mother and community activist, is fighting a triple crisis. She is poor. Rising sea levels and coastal erosion are turning her family's drinking water saline and threatening their homes. And policies to tackle climate

change – as yet undetected in villages such as hers – might mean that the energy she needs as a stepping stone to development will soon be too expensive for her to afford.

Minu is on the margins of everything. She is a woman in a male-dominated society. She is a poor person with no land, living in a flood-prone country whose rivers are for now increasingly swollen by rapidly melting Himalayan glaciers, but in future may be dry. The coastal banks on which her village is perched are being eroded by the rising sea.³ As her fresh water turns saline, Minu is forced to purchase her supply from government vendors, which costs 34 pence per day and involves a 12-mile round trip by foot and small boat.

On 15 November 2007, Cyclone Sidr hit Bangladesh, causing more than \$2.3 billion damage⁴ and affecting an estimated 8.5 million people⁵. Like many other villages, Kayabunia, where Minu lives, was badly damaged.

'Human activities are altering the earth's atmospheric composition'⁶, yet Minu and hundreds of millions like her have not taken part in those activities. Climate change – perhaps the final straw for women and their families living on the edge of everything – has been caused by greenhouse gas emissions from industrialisation. Minu is yet to benefit from these processes, now taken for granted elsewhere in the world.

But Minu still has a right to pursue a better quality of life, which will inevitably require access to sources of energy. If this energy comes from burning fossil fuels, then it will lead to an increase in carbon dioxide (CO₂) emissions. Currently, average yearly CO₂ emissions in Bangladesh are 0.3 tonnes per person. By contrast, people in the UK each emit an average of 9.2 tonnes of CO₂ per year. The European Union (EU) average is 8.8 tonnes and in the US, the figure is 20.1 tonnes.⁷

It is self-evidently unfair that people like Minu in Bangladesh, who are already suffering tangible, costly losses as a result of climate change, are right in the firing line for future disasters and yet emit 30 times less CO₂ than people in the UK. But were she and those around her to consume at the same level as UK citizens or the relatively small Bangladeshi elite and by the same polluting means, then the total emissions of Bangladesh would rise to the same level as those of Japan, the world's fifth biggest emitter of CO₂.⁸

It is arguably no one's right to pollute and every country's responsibility, according to international law, to avoid climate catastrophe.⁹ But energy is necessary for even the most basic human development and the alleviation of suffering. While fossil fuels remain the cheapest and most accessible source of energy, poorer nations will burn them. Countries with high levels of development and, without exception, high CO₂ emissions are in no position to argue otherwise.

The inescapable, undeniable truth of tackling climate change is that global greenhouse gas emissions, of which CO₂ from the burning of fossil fuels is the most significant, must be reduced dramatically and rapidly. And yet poor communities already living on the front line can neither be expected to pay for the escalating costs of climate change nor to give up opportunities to develop.

In the UN Framework Convention on Climate Change (UNFCCC), first written in 1990, signed by many in 1992 and by more since, countries are not only required to '... prevent anthropogenic [human made] climate change ...' but to do so according to principles of 'equity' and 'common but differentiated responsibilities'. This means

that all humans are in some way responsible for climate change and capable of preventing catastrophe, but some are more so than others.

Minu Basar needs greenhouse gas emissions to be cut dramatically and to be compensated for the losses she is already suffering as a result of climate change. But, along with some two billion other poor people, she has a right to enjoy opportunities and she should not be denied a route out of poverty. That this route must now be 'clean' and must involve very few greenhouse gas emissions is everyone's problem.

2. What action is needed to avoid climate catastrophe?

'If humanity wishes to preserve a planet similar to that on which civilisation developed, paleoclimate evidence and ongoing climate change suggest that CO₂ will need to be reduced from its current 385ppm [parts per million of atmosphere] to at most 350ppm.'

From *Target Atmospheric CO₂: Where Should Humanity Aim?*, Hansen et al¹⁰

Key points

The UN assembles a panel of leading climate scientists – known as the Intergovernmental Panel on Climate Change (IPCC) – every six years to survey the latest papers and studies on climate change. Its fourth assessment of climate science (known as AR4), published in 2007, reports that climate change is happening and that human activity is 'very likely' to be the primary cause.

- AR4 reports that the global average temperature rise over the 100-year period from 1906 to 2005 was 0.74°C.
- Recent observations from the Mauna Loa observatory in Hawaii suggest that at a peak of 387ppm of CO₂, the rate of carbon emissions is increasing faster than expected.¹¹
- Leading climate scientist Dr James Hansen suggests that a 'safe' level of atmospheric concentration would be around 350ppm of CO₂.¹²
- To achieve this, scientists estimate that cuts in global emissions must total at least 80 per cent over 1990 levels by 2050, with a global peak around 2015 and an annual rate of decline thereafter of around 6 per cent.
- This global effort will require emissions cuts in poorer and developing countries as well as in industrialised countries.

2007 was a watershed year for climate change science. Not only was the IPCC's fourth assessment (AR4) of the scientific evidence completed,¹³ but a series of significant studies were published which, because of the length of the IPCC process, were not included in AR4. Perhaps the most significant of these was the September 2007 study of Arctic sea ice, which revealed that its rate of melting was '100 years ahead of schedule'.¹⁴

According to *Climate Code Red*, a report commissioned by environmental groups but based on peer-reviewed science: 'The 2007 Arctic minimum on 16 September was 4.13 million square kilometres, compared to the previous record low of 5.32 million square kilometres in 2005, representing a precipitous decline of 22 per cent in two years.'

The melting of sea-borne ice is not wholly attributable to climate change and does not in itself present an immediate danger to human wellbeing as it does not contribute to sea level rise.¹⁵ However, it is an important sign of trends in the climate and recent studies have led some scientists to conclude that summer ice loss may already have crossed or be close to crossing the point of no return or 'tipping point'.¹⁶

Ice reflects the sun's radiation, helping to regulate the temperature of the planet; its loss will also accelerate warming. More importantly, such a rapid increase in the rate of summer ice loss in the Arctic indicates that even the relatively small increase in average global temperatures experienced so far may lead to irreversible changes.

Also not included in AR4, and at the time of writing still in the process of being peer reviewed, is a new paper from Dr James Hansen, Director of NASA's highly respected Goddard Space Flight Center (sic) and a leading climate scientist. Along with eight other scientists, Dr Hansen speculates that the impact of changes caused by existing warming, such as ice loss, will have a more profound impact on temperature increases than even the IPCC estimates.

Dr Hansen has in the past suggested that global warming needs to be kept below 1.7°C (degrees Celsius) over pre-industrial levels¹⁷ rather than the +2°C 'safe' limit supported by the EU, among others. His new study indicates that to achieve this, the concentration of CO₂ in the atmosphere, currently at around 385ppm, needs to be stabilised at around 350ppm. Progressive climate policy has hitherto suggested that 400ppm is a 'safe' stabilisation level.

The IPCC's AR4 in fact supports this view as it considers a range of scenarios under which the concentration of greenhouse gases in the atmosphere are stabilised at different levels. It suggests that stabilising CO₂ in the atmosphere at 500ppm carries a risk of up to more than 90 per cent of exceeding +2°C and that, even at a 400ppm stabilisation level, the risk of exceeding +2°C is greater than 50 per cent and perhaps more than 70 per cent.¹⁸

Both these levels – 500ppm and 400ppm – involve taking big risks with a climate system that, for all its increased sophistication, the science does not yet fully understand. Politicians may look at the IPCC's work and conclude that, given the economic costs of very ambitious cuts in emissions and the likely unpopularity of the policies required, that an even chance of exceeding +2°C is worth taking.

However, a closer look at what the IPCC report says, alongside mounting evidence that the planet is more sensitive to temperature increases than had hitherto been assumed, suggests that the maximum stabilisation level should be 375ppm. This, according to AR4, carries a much lower risk – less than 20 per cent – of exceeding +2°C.¹⁹

Christian Aid is a faith- rather than a science-based organisation. We are moved to respond by the implications for poor people living in the most vulnerable communities and the injustice of climate change. But we must heed these warnings – from observed changes and authoritative projections – and act accordingly.

It is therefore our view that, while avoiding becoming fixated on temperature ranges and atmospheric concentrations (that respond to one another in a notoriously dynamic fashion), there is now little chance of doing too much to tackle climate change and every danger of doing too little.

The international negotiations should aim for a global peak in emissions no later than 2015, a return to around 1990 levels by 2020 and a global reduction of around 80 per cent by 2050. The bulk of modelling – from IPCC to work by the Potsdam Institute for Climate Impact Research and others²⁰ – supports this level of action.

The Greenhouse Development Rights framework is, therefore, based on an 'emergency programme' of emissions reductions of this order (see the blue curve in Figure 1 below). It carries a 17-36 per cent risk of exceeding 2°C and in which concentrations peak at around 400ppm and stabilise at around 350ppm.²¹

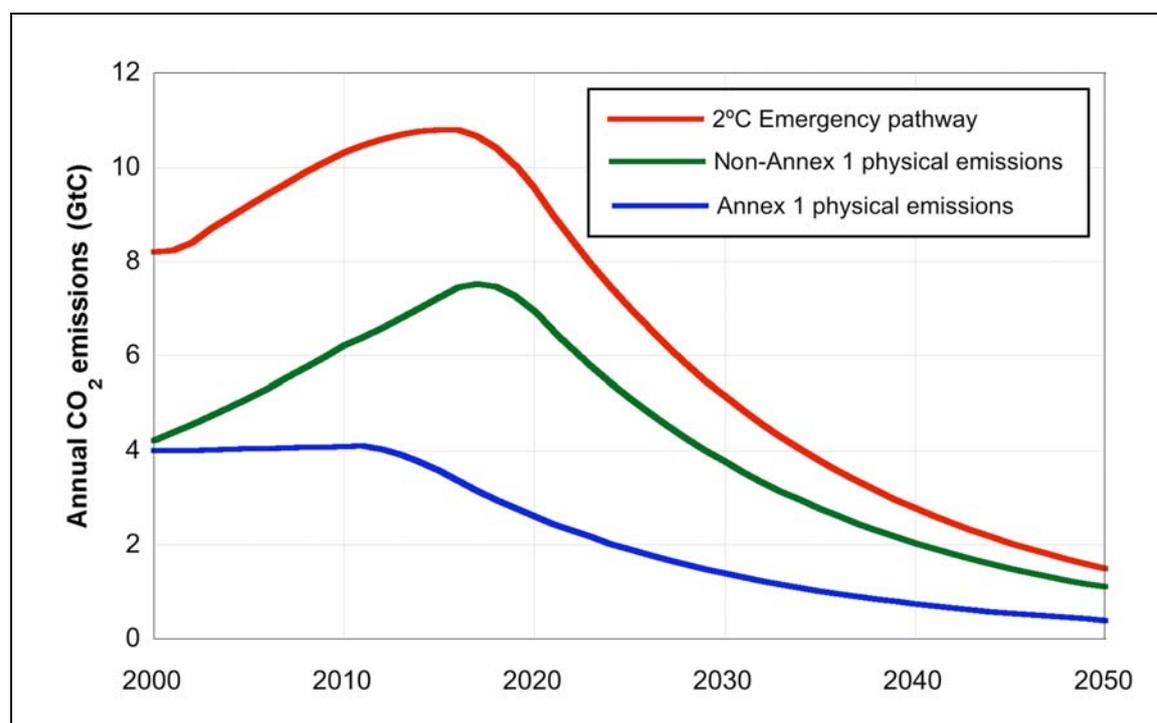


Figure 1: Truly inconvenient. An emergency pathway (red) requires virtual decarbonisation in rich (Annex 1) countries (blue) but also demands cuts in the developing world too (green). Modelled by Paul Baer

Unfortunately but significantly, such a rapid and comprehensive global cut in emissions requires reductions not only in the industrialised world, but also in developing countries (see Figure 1). Even the most stringent emissions reductions in industrialised countries – referred to in the UN climate negotiations as Annex 1 countries – will now likely be insufficient to restrict global warming to below +2°C.

Figure 1 illustrates this clearly and according to simple arithmetic. The red curve represents a lowest risk global emissions pathway to 2020 and the blue curve a corresponding virtual decarbonisation in industrialised countries. The green curve, then, is the sum of the red curve minus the blue curve and shows the remaining emissions 'budget' available to developing nations – referred to as non-Annex 1.

This is the challenge that stands before those currently negotiating the next phase of the international climate agreement. The developing nations of the southern hemisphere, home to most of the world's poor people, must begin the process of decarbonisation before they have completed the process of development.

3. The UN negotiations and the Bali decision

'At this meeting we have launched a new negotiation process, designed to tackle climate change, with the aim of completing this by 2009.'

Rachmat Witoelar, president, UN climate change conference in Bali²²

Key points

Since 1990, the UN has been the home of international climate talks. At its first global 'earth summit' in 1992, the UNFCCC was signed and has now been ratified by 192 countries and so is a legally binding agreement. What is missing from the UNFCCC is any numeric targets:

- In 1997, the Kyoto Protocol was agreed as an amendment to the UNFCCC to give industrialised (Annex 1) countries binding emissions reduction targets.
- Kyoto entered into legal force in 2008, with its first commitment period (set of binding emissions reduction targets) running until 2012.
- However, since Kyoto was first agreed, emissions have continued to increase dramatically, even in Annex 1 countries with reduction targets.
- The breakthrough at the annual UN climate summit in Bali, Indonesia, in 2007, opened the way for new negotiations on tougher targets for these countries after 2012.
- Developing countries are also being pressured to take on binding targets to reduce emissions which, while necessary, is unfair unless these are financed by the industrialised world.

In Bali on 15 December 2007 – almost one day after the 13th Conference of the Parties (COP) – signatory countries to the UNFCCC – was scheduled to have finished – the world's climate negotiators finally reached agreement to launch new talks aimed at the '... full, effective and sustained implementation of the convention ...',²³

The precise significance of this decision is important. The negotiation, which will be reviewed at the 14th COP in Poznan, Poland, in 2008 and completed in 2009 in Copenhagen, is not focused on agreeing a new convention or, as is often suggested in media coverage, a successor to the Kyoto Protocol. Instead, its task is to ensure that countries fulfill existing obligations and make further commitments to fulfill the core aim of the UNFCCC – to prevent anthropogenic climate change.

It should be the priority of the negotiations to ensure that a sequence of events follows the Bali decision. These are outlined in section 4 of this document. But the onus is currently on industrialised nations to lead with bold new commitments to cut emissions and a willingness, in addition, to commit to financing emissions cuts in developing countries.

For those concerned with climate change and poverty and therefore wanting to ensure the outcome is fair this is very important. The UNFCCC already commits countries to the principles of 'equity' and of 'common but differentiated responsibilities and respective capabilities'. In the current negotiations, therefore, these principles are not open to question and must form the basis of any further commitments.

According to the Bali decision, negotiations are to be taken forward in two different forums. The first is an ad hoc working group for countries that have ratified the Kyoto Protocol and is known as the AWG-KP. Its main focus will be on reviewing the protocol, which finally entered into force during the Bali meeting, ten years after it was first agreed, and on agreeing new commitments for a second phase after the first ends in 2012.

The AWG-KP existed before Bali. The second forum of the two – the ad hoc working group on long-term, cooperative action (AWG-LCA) – involves all countries and is where the ‘full, effective and sustained implementation of the Convention’ will be discussed.

The US presents a challenge to this structure. It has not ratified the Kyoto Protocol and is therefore not included in AWG-KP discussions, which means it is not under pressure through this part of the negotiations to take on binding targets to cut its emissions. It is involved only in the AWG-LCA. However, the Bali decision states clearly that all developed countries, which would include the US, should take ensure ‘comparability of efforts’ as they take on commitments to reduce emissions. This text was resisted strongly by the US, but its delegation backed down in the final moments of Bali. Ultimately, it is the imminent prospect of a new US administration, which is anticipated to be more positive towards the climate talks, that is providing the scope for negotiations to take place.

In Bali, some developing countries were reluctant to commit themselves to this part of the negotiations before industrialised countries had demonstrated their willingness to take on much deeper cuts than their existing Kyoto obligations. These average a mere 5 per cent by 2012 over 1990 levels. They argue that rich countries are responsible for the bulk of emissions currently in the atmosphere and causing climate change.

However, a last-minute change to the Bali decision opened the way for their involvement. Pressure from India, supported by other developing countries, ensured that mention of future emissions cuts by developing countries was placed carefully in the context of action by industrialised countries.

The principle that action to cut emissions in developing countries should be supported by money and technology from industrialised countries is enshrined in article 4 of the UNFCCC²⁴ and now echoed in the Bali decision. This makes Greenhouse Development Rights, at its heart a proposal for how this principle should work, hugely relevant to the ongoing negotiations.

4. Greenhouse Development Rights

'Countries will be asked to meet different requirements based upon their historical share or contribution to the problem and their relative ability to carry the burden of change. This precedent is well established in international law, and there is no other way to do it.'

Al Gore, former US vice president²⁵

Key points

One way to break the international deadlock is for countries to agree a new means of sharing out the cuts that have to be made to keep global warming below 2°C.

Christian Aid has developed a framework called Greenhouse Development Rights (GDRs), which shows exactly how this could be done.

- GDRs uses the UNFCCC's core principles of common but differentiated responsibility and capability to work out how much each country should contribute towards the global effort.
- It combines the per person running total of each country's emissions since 1990 (responsibility) with its per person wealth (capability).
- Using this data, GDRs places all 192 nations in the UNFCCC in an index of responsibility and capability to show what share of the effort each should accept.

GDRs exposes the need for countries high on the index – those that have contributed most to the problem and have the greatest wealth – to contribute towards the cost of cuts in emissions overseas as well as cutting at home, thereby freeing up the poorest countries who are least responsible for climate change to channel money into anti-poverty initiatives.

A dangerous impasse still grips international climate change talks: unless negotiations address how poor people can escape poverty without adding further to the climate crisis, it is difficult to imagine how poorer nations can be persuaded to sign any new agreement.

The larger developing countries, who are burning ever greater amounts of fossil fuels but who have populations that include millions of poor people, are sceptical of the industrialised countries who have consistently failed to meet their commitments in this and other international arenas. In this context they ask why they should take action on a problem they have little responsibility for causing rather than focus on providing for their populations. This stand-off is putting poor people's future opportunities right at the heart of the global climate talks.

GDRs gives us one way to break this impasse. It addresses the development crisis as well as the climate crisis. And while its inner workings, assumptions and calculations are complicated, the principles behind it are simple.

GDRs is a means of sharing out the global 'effort' needed to meet the demands of the emergency programme in Figure 1 (see above), according to the principles of equity in the UNFCCC. This 'effort' is simply the difference between what would be emitted in the future if no action was taken to 'mitigate' or cut emissions²⁶ and what might be emitted if the emergency programme was followed.

Countries are indexed to illustrate what percentage share of the global effort they should take on. Each country's place in the index is determined according to clearly explained measures of responsibility and capability.

Responsibility is calculated by taking each country's total 'cumulative' emissions²⁷ since 1990, when the UNFCCC was first drawn up and the first IPCC assessment report published, and dividing these by the number of people in each country. It is important that the size of a country's population is taken into account as emissions equate closely with their opportunity to develop.

Capability is arguably the more important factor in determining the amount of effort a country can take on. This is especially so for Christian Aid, an organisation concerned with eradicating poverty. In GDRs, it is calculated using per capita national income data, adjusted to reflect differences in purchasing power and inequality from one country to another. It reflects the ability of a country to pay for climate mitigation and adaptation.

It is Christian Aid's firm belief that very poor countries – such as those falling into the UN's 'least developed' category – should focus their attention and resources on meeting the needs of their people, especially as climate change impacts increase. In the GDRs proposal, they would not be asked to pay for tackling climate change.

Larger developing countries, such as India, in which there are still large numbers of poor people and yet increasing pockets of wealth, would have to pay for some of their own measures both to reduce emissions and to adapt to climate change. It is for this reason that the calculation of capability includes an adjustment for inequality within countries; largely the more unequal a country is, the more it has to pay in recognition of its available wealth.

An **income threshold** of \$7,500 is applied to both responsibility and capability, which affects countries' position in the index; the greater the proportion of a country's population that falls below this line, the less of the effort that country is required to take on. This is somewhat like a personal allowance applied to income tax, shielding those below the threshold from the costs of tackling climate change.

These calculations are not set in stone and are very much open to debate and negotiation, although any significant deviation will throw more of the global 'effort' on to the shoulders of those least able to respond. Christian Aid's primary concern is for the wellbeing of poor people, so our aim has been to place as much of the effort as possible on to the shoulders of those who can better afford to take it, hence in the final responsibility, capability and income threshold (RCI) calculation, capability is weighted 6:4 in relation to responsibility.

For industrialised countries, their high rating in the index sends a very clear message about what they must do. They must not only cut domestic emissions dramatically, but must also contribute to what is required globally, taking on a share of the effort that those lower on the index can ill afford. This is also the case when it comes to paying for the costs of adapting to climate change.

This is clearly illustrated by Figure 2. The critical reductions that are required in developing countries are financed by industrialised nations taking on a formal obligation to cut emissions way beyond what is possible domestically. Note that the green line in the second graph in Figure 2 is bent significantly, but not decisively, by action taken by developing countries themselves; it is the additional effort taken on by industrialised nations according to their RCI that makes the real difference.

For example, the EU (including the UK) must, according to the RCI, take on a 25 per cent share of the global 'effort' required to tackle climate change. In practice this means huge cuts in greenhouse gas emissions in the EU (also fairly shared according to the RCI) and an obligation to finance cuts in developing countries whose percentage share of the effort is significantly less. Using the same data, the US and the UK must take on a 32 per cent and a 3.6 per cent share of the global effort, respectively.

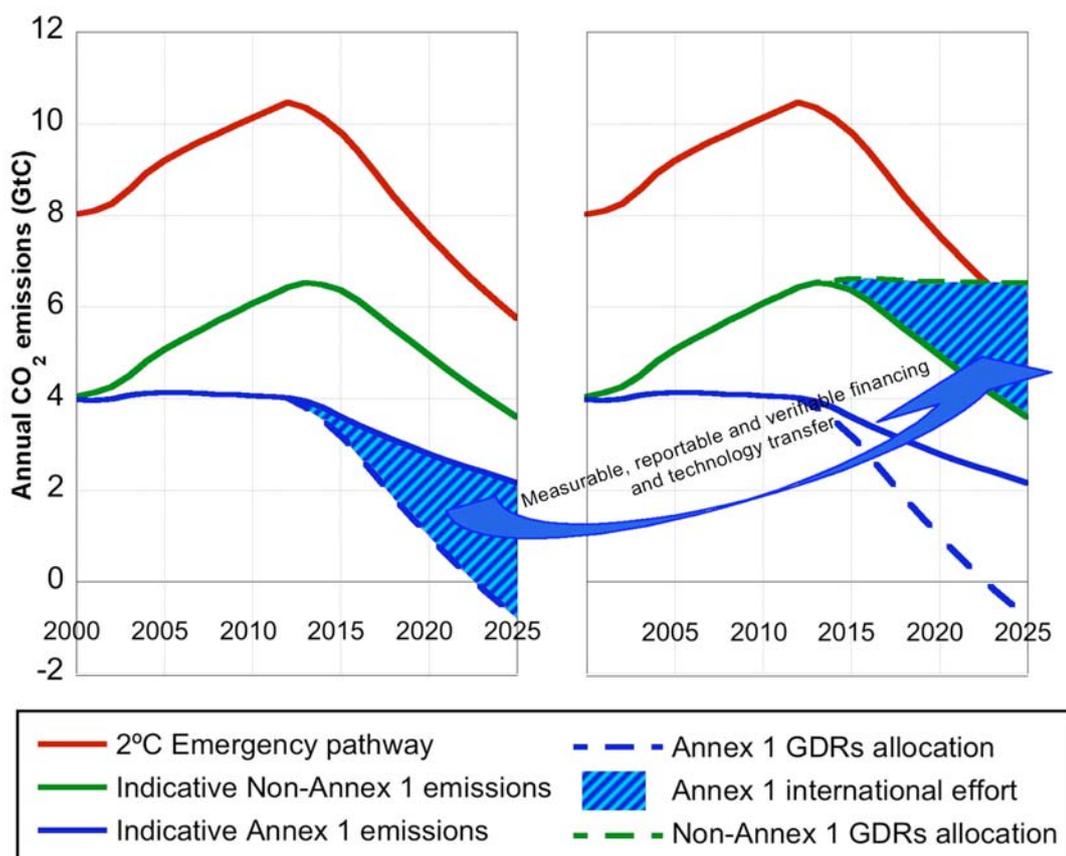


Figure 2: Industrialised (Annex 1) countries not only cut emissions domestically but also take on an additional obligation to finance cuts in developing (non-Annex 1) countries

For the EU, the practical message is challenging. In Figure 3, the light blue wedge indicates strong action by the EU on reducing its domestic emissions; around 40 per cent reductions over 1990 levels by 2020. This leaves a further 30 per cent of international reduction over its 1990 levels, which should be purchased from or financed in developing nations; this is what the EU must sign up to in Copenhagen. The divide between domestic reduction and international support is somewhat arbitrary but it is clear that the EU must deliver the most ambitious possible cuts at home if it is to keep its international obligation affordable and not put an impossible burden on to poor countries. The time for offsetting is over.

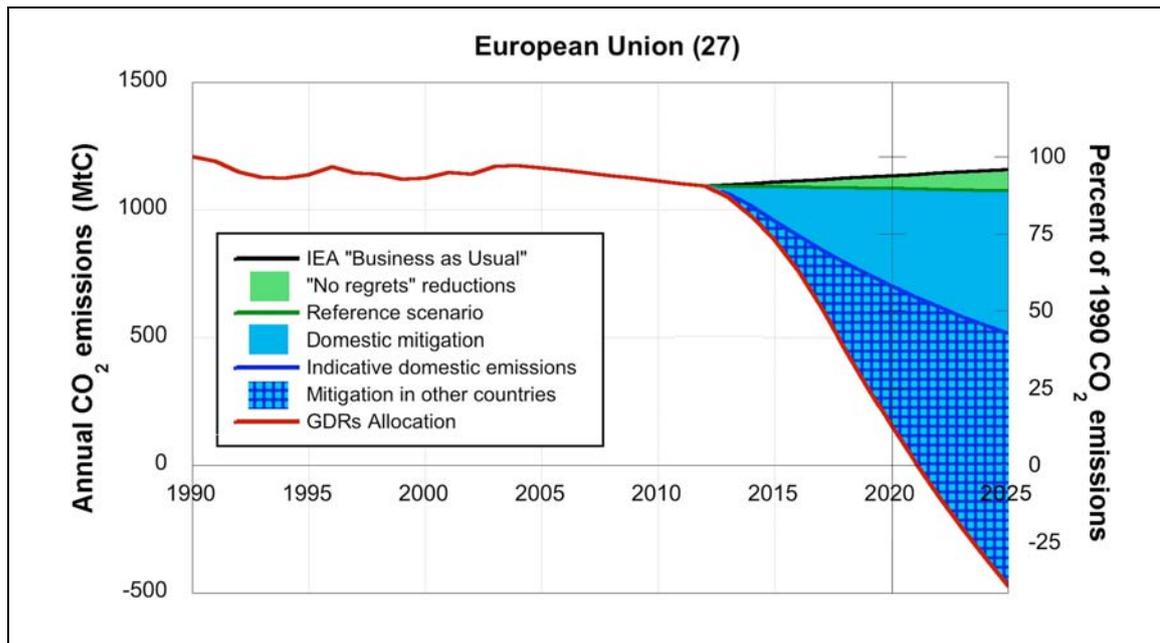


Figure 3: The EU's (27) obligations in the Greenhouse Development Rights proposal. The distinction between domestic (plain blue) and international (hatched) reductions is political rather than scientific

By comparison, countries such as China and India, where emissions have grown dramatically in recent years and yet where large populations of poor people still live, will be receivers of finance to cut emissions. They will have to make some contribution to cutting their own emissions, dependent on their place on the RCI, but much of what the global emergency programme requires them to cut will be funded by industrialised nations.

GDRs not only suggests a method of quantifying the UNFCCC's core equity principles of responsibility and capability, it also describes a means by which the political impasse in the climate negotiations might be broken – in effect, by industrialised countries agreeing to shoulder a significant proportion of the poorer nations' burden. Stabilising the climate below +2°C requires cuts in countries where tackling poverty is still the main priority.

GDRs is one possible solution to the global climate talks; there are many proposals and options on the table. But it provides a crucial insight into the scale of efforts required by different countries and brings to life what a fair and equitable deal to tackle climate change might look like. This underlying principle of equity is crucial if the climate talks are to do what they need to do – prevent climate change from dramatically worsening the horror that is global poverty.

5. Elements of a fair climate change agreement

'Climate change is the defining challenge of our age. The science is clear; climate change is happening, the impact is real. The time to act is now.'

Ban Ki-moon, UN secretary general at the opening of the Bali climate talks

Key points

An international agreement that addresses the climate crisis in the midst of the development crisis must contain five key elements:

- large and sustained cuts in the emissions of industrialised countries, which must be made in these countries and not by purchasing offsets
- a formal obligation on the part of industrialised countries to finance cuts in developing countries on top of their domestic reductions
- important technology that may help low carbon development must be shared with poorer nations
- financing for communities vulnerable to the impact of climate change must be made available through an international fund under the UNFCCC
- in return, poorer and developing nations must commit to making measurable cuts in their emissions and to planning in order to manage adaptation effectively.

Although carbon trading is likely to play a significant part in financing the reduction of emissions, other measures – in particular taxation – will be needed to raise finance. This must be levied and spent by governments with utmost honesty and clarity, with clear links between the tax and the expenditure.

The decision reached in Bali is important, but it does not guarantee action on climate change, it does not stop a single additional tonne of CO₂ being emitted and offers no additional protection to those already experiencing the impact of climate change. Many of the world's governments are still flat lining on climate change policy. The negotiations need a strong shot of climate and development reality injecting into their heart.

Tackling climate change also demands greater honesty from politicians. Cutting greenhouse gas emissions, while ensuring poorer nations develop cleanly and can protect their vulnerable citizens against changes already loaded into the climate system, will cost money. Although the new carbon markets may play a part in this process, there is no magic ingredient, no economic witchcraft that can conjure up a solution.

Polluting the atmosphere with greenhouse gases incurs costs that are either borne by poorer people and future generations or paid up front, now, in full. To keep these costs down and – more importantly – to stand a high chance of remaining below +2°C, a peak in global emissions no later than 2015 must be followed by a steady but inexorable decline towards virtual decarbonisation globally by 2050. This means that what happens now is more important than ever.

Without an international framework, action will be piecemeal and difficult to measure against what is required. But, as the GDRs framework illustrates, as well as safeguarding the climate, it is important that an agreement is fair and recognises people's different circumstances. This reflects political as well as social, economic and climate reality; developing countries whose decarbonisation is necessary if

climate catastrophe is to be avoided are unlikely to sign an agreement that places unfair burdens on their shoulders.

There are five principles of such an agreement:

1. Large cuts in the industrialised world. Industrialised countries, especially those in Europe and North America, must lead the way. They should impose upon themselves, by way of national legislation, emissions reduction targets of around 40 per cent by 2020 and of at least 80 per cent by 2050 over 1990 levels, making signing up to such targets at the international level a matter of course.

These reductions should be made at home. We should not ask other, poorer countries to make our reductions for us, especially if we are to win their governments around to the view that a low carbon global economy is not just desirable but inevitable.

2. Binding international cuts for industrialised countries on top of cuts at home. According to the principles of responsibility and capability quantified in the GDRs framework, countries should pay for international cuts in addition to domestic action. These payments should be obligatory and linked to a binding commitment, as is stipulated in article 4.7 of the UNFCCC, rather than made on an ad hoc, voluntary basis.

3. Sharing important technology. All countries must be prepared to share the technology that will play an important part in ensuring emissions are reduced without undermining people's opportunities to develop. In practice, much of this technology is currently owned in richer nations and must be made available to poorer nations so that it can be manufactured locally to reduce its cost and adapted to suit different national circumstances.

4. Adapting to climate change. According to the same principles of responsibility and capability, countries must ensure that poor and vulnerable communities are supported to withstand global warming up to +2°C, which will still bring dramatic consequences. Adaptation to climate change must not fail for want of money or other resources that should be made available through funds and mechanisms accountable to the UNFCCC. The adaptation fund agreed in Bali should be supported.

5. Measurable cuts in poorer countries. For their part, developing countries must put regulations in place to improve the efficiency of their development (in GDRs, known as 'no regrets' reductions²⁸) and, depending on their responsibility and capability to pay, will have to fund some of their own reductions. All of the reductions in emissions they make, whether paid for by mobilising domestic resources or funded from the international obligations of industrialised countries, must be measured, reported and verified.

All of these measures, along with those designed to stop deforestation, can be negotiated under the existing UNFCCC and Kyoto Protocol. The rich countries can lock themselves in to their national targets through much more ambitious second and third commitment periods of Kyoto and can take on additional, international obligations to pay for cuts in poorer nations under article 4 of the UNFCCC. A further amendment, similar in legal terms to the protocol, may be needed to lock in the decisions made in the AWG-LCA (as described in section 3 above).

Financing an emergency climate programme

The assumption at the heart of the ongoing negotiations – at least on the part of many industrialised nations – is that carbon trading, extended and increasingly linked globally, will play a major role in reducing emissions. However, while the trading of emissions permits may have a part to play, market-based approaches such as this may be neither the fairest nor the most cost-effective way of reducing emissions.

Carbon trading, such as through the emissions trading scheme (ETS) in Europe, takes place when emitters are given or required to buy permits in order to emit and then allowed to sell any surplus or buy further permits if required. Under a 'cap and trade' scheme, the overall number of permits in the market is restricted by governments at the outset and then further restricted over time. In theory at least this ever-tightening 'cap' on emissions should be designed to fit with agreed emissions-reduction targets.

The ETS has been much criticised, principally because, in its first two phases, governments in Europe have failed to restrict the supply of permits enough either to reflect any effective reduction targets or to drive up the price of the permits when traded. Furthermore, the permits have been 'grandfathered' (handed out for free on the basis of existing emissions levels) rather than sold or auctioned. An EU proposal for the third, post-2012 phase of the ETS would see much tighter caps and all permits being auctioned rather than handed out.

However, market-based mechanisms are cumbersome and likely to reward those with the resources to shift away from emitting or, if the price of permits in the market fails to rise above a critical level, to continue emitting and paying the price. The addition of auctioning revenue, which goes to governments and can be used to help poorer people meet the cost of reducing emissions, to provide incentives for wider decarbonisation and to finance international cuts and adaptation, makes trading more attractive.

At the international level, the inherent iniquity of market-based mechanisms – that they are likely to reward those with the muscle to ensure that rewards accrue to them – will be even more apparent. Currently, through the Clean Development Mechanism (CDM), companies and organisations based in countries with Kyoto targets can 'offset' these by purchasing credits from projects in developing countries. However, as well as weakening targets in industrialised countries, this process has also attracted much criticism because some projects have been found to worsen conditions for poorer communities.²⁹

While trading is likely to play a part in the transition from a high- to low-carbon economy, there are other, simpler mechanisms that may help set a more stable price for carbon and provide greater certainty and predictability for countries and companies wanting to make more expensive, low carbon investments. Taxation is the most obvious of these; applying levies to emissions provides a clear price signal and provides revenue to assist with the transition. Auctioning permits in a trading system is a *de facto* tax. There is also a 2 per cent levy on CDM transactions, which is ring-fenced to help with adaptation costs.

Internationally, Mexico has proposed a multinational climate change fund into which tax and auctioning revenues and the proceeds of other levies could be deposited. What is interesting about Mexico's proposal is that all countries apart from the poorest would be required to contribute on the basis of agreed indicators of responsibility and capability

rather than on a voluntary basis. Clearly GDRs could be used to calculate these obligations.

The logic of the Stern review³⁰ of 2006 – that it will cost money up front to avoid climate catastrophe but that this is prudent as well as necessary – is unavoidable and governments must be honest about this. Coupled with the seemingly inexorable rise in fossil fuel prices, the costs of energy are on the rise and the challenge facing politicians is to ensure that these additional costs are distributed fairly; poor people cannot be asked to pay to tackle climate change.

Lord Stern's original calculations dictated that the world need spend the equivalent of only 1 per cent of gross world product (GWP) to avert climate catastrophe, by stabilising atmospheric CO₂ at levels below 500ppm. However, according to the IPCC's AR4, stabilising at less than 400ppm CO₂ could cost more than 3 per cent of GWP by 2030. As recent science has even more clearly spelt out this danger, Stern has revised his stabilisation target to 450ppm, at a cost of around 2 per cent of GWP.

All of these estimates are considerable – but affordable when you compare them to the costs of failing to deal with climate change, which Stern estimates at between 5 to 20 per cent of GWP or possibly even more.

In truth, while the logic that avoiding climate catastrophe will now be a costly business is indubitably true, there are so many scientific and economic uncertainties as to make estimates highly speculative. However, governments need to prepare the ground for increased costs, ensure the burden of these costs falls on those who can best shoulder them and put in place mechanisms to enable public expenditure backed up by necessary regulation (for instance, emissions standards, product bans and moratoriums).

Conclusions

A manifesto for climate justice

There is no escaping the urgency of the climate crisis. The body of scientific evidence is so strong as to be overwhelming; inaction now on the part of those in positions of power and influence is likely to be judged very harshly by future generations. However, tackling climate change in a manner that reinforces global injustice and entrenches poverty is equally iniquitous.

Something must happen, but what? A truly global crisis requires a truly global approach, but there is no precedent for such comprehensive and cohesive action. Positive examples, such as the Montreal Protocol to cut ozone-depleting gases, are by comparison very limited in their scope and had little if any impact on poorer people; negative examples, such as the World Trade Organisation, offer little by way of hope.

Worrying too is the paralysis that is currently gripping many of the politicians involved in negotiations whose pathway to agreement is obscured by concerns about economic competitiveness, jobs and domestic unpopularity if climate policies cause pain. It is, then, down to citizens to clear the way ahead for politicians to move into. Christian Aid is therefore calling on people to support its principles for an urgent but just solution to the climate crisis.

The onus is on industrialised countries that derive much of their wealth from their long history of fossil fuel use to act first and go furthest. Christian Aid calls on the UK, EU and leaders of industrialised nations to sign up to:

- domestic cuts in emissions of 40 per cent by 2020 and in excess of 80 per cent by 2050 compared to what they were emitting in 1990
- paying for a similar level of emissions reductions in developing nations through an international mechanism based on clear equity principles
- establishing a fighting fund to assist vulnerable communities wherever they are to adapt to now inevitable and profound changes in the climate.

However, no country should do nothing. All 192 signatories to the UNFCCC must agree to act, with the scale of their commitments relative to their responsibility and capability. Christian Aid calls on countries in the G77 (developing) country grouping to:

- propose and support serious equity principle-based frameworks, such as the GDRs approach
- in parallel, propose new mechanisms capable of channelling significant sums of finance into low carbon, sustainable development policies
- provide clear examples of and plans for how low carbon development and adaptation can benefit poorer communities.

It is time for people to lead the fight against climate change. Without citizen action, politicians and officials may procrastinate for a further 10 years, by which time climate catastrophe will be a near certainty rather than a grave danger.

Countdown to Copenhagen – what you can do

In December 2009 countries will meet at the UN climate negotiations in Copenhagen. International agreement at these talks could be the last chance for the world to stand any chance of keeping global warming within 2°C.

The vulnerable communities Christian Aid and our partners support around the world are bearing the brunt of climate change. The run-up to the Copenhagen meeting will be a crucial period to campaign for an international climate deal that really counts for the world's poor.

Christian Aid's 'Countdown to Copenhagen' campaign will be calling for richer countries, including the UK, to recognise that they have created most of the climate-changing emissions to date and that they need to repay their carbon debt to poorer countries accordingly. They also have the greatest capability to act.

We want rich countries to:

- make at least 80 per cent cuts in carbon emissions by 2050 – and at home, not abroad
- assist and help pay for developing countries to reduce their emissions, develop cleanly and adapt to the impacts of climate change.

We are asking people to sign a pledge to show they support our campaign and send a clear message to decision makers that any new climate change deal must have justice and equity at its heart.

How can I get involved?

- Order a Countdown to Copenhagen campaigns pack, complete with information, DVD resources and action cards, by calling us on +4420 7523 2264, emailing us at campaigns@christian-aid.org or writing to us at Christian Aid Campaigns, PO Box 100, London SE1 7RT.
- Sign the Christian Aid pledge for climate justice in Copenhagen and collect pledges in your local church and community.
- Go to www.christianaid.org.uk and find out more about the campaign in your area.

Notes

- 1 UN, *The Energy Challenge for Achieving the Millennium Development Goals*, 2007, www.un.org/News/Press/docs/2005/dev2529.doc.htm
- 2 See World Resources Institute's Climate Analysis Indicator Tools for UNFCCC yearly emissions data, <http://cait.wri.org/>
- 3 Global warming leads to sea level rise because land-based ice caps, such as glaciers, melt faster than they replenish and because the seas expand at higher temperatures. According to the UN's Intergovernmental Panel on Climate Change, between 1993 and 2003, sea levels rose at a rate of 0.28 metres per century (± 0.07), a significant acceleration over the 1961 to 2003 rate of 0.11 metres per century (± 0.05). See *Climate Change 2007: The Physical Science Basis, Summary for Policymakers*, IPCC WG1, 2007, table SPM-0, p 5.
- 4 Xinhua News Agency, 'Cyclone Sidr costs Bangladesh \$2.31 billion', 26 November 2007, <http://www.reliefweb.int/rw/RWB.NSF/db900SID/PANA-79BJ9P?OpenDocument>
- 5 Reuters, 'Bangladesh cyclone damage much worse than thought – UN', 4 December 2007, <http://www.alertnet.org/thenews/newsdesk/DHA82355.htm>
- 6 J Hansen, M Sato, P Kharecha, et al, 'Target atmospheric CO₂: where should humanity aim?', draft submitted to *Open Atmospheric Science Journal*, 18 June 2008, <http://arxiv.org/abs/0804.1126>
- 7 Data from the Climate Analysis Indicator Tools of the World Resources Institute, CO₂ only, 2004, <http://cait.wri.org/>
- 8 If Bangladesh's current emissions – 37.5 million tonnes per annum – were to increase 30-fold, they would total 1,125 million tonnes per annum. Japan, the world's fifth biggest emitter of CO₂, after the US, China, the EU and Russia, emits 1,304 million tonnes per annum, <http://cait.wri.org/>
- 9 The overarching aim of the UN Framework Convention on Climate Change, signed at the Rio Earth Summit in 1992 is the '...stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system'.
- 10 J Hansen, M Sato, P Kharecha, et al, 'Target atmospheric CO₂: where should humanity aim?', draft submitted to *Open Atmospheric Science Journal*, 18 June 2008,
- 11 Observed atmospheric CO₂ concentration at Mauna Loa peaked at 387ppm in May 2008, the highest level on record. The average is therefore currently at around 384ppm, <http://www.esrl.noaa.gov/gmd/ccgg/trends/>
- 12 Atmospheric concentration levels are measured in parts of CO₂ per million of atmosphere. CO₂ concentration in the atmosphere is often also written with an 'e' – CO₂e – indicating that other greenhouse gases, such as methane and nitrous oxide, are included in the calculation. As a very rough rule of thumb, CO₂e values are around 50 parts per million higher than CO₂ values. So 450ppm CO₂e is 400ppm CO₂. In this briefing, concentration values are for CO₂ rather than CO₂e, unless otherwise indicated.
- 13 <http://www.ipcc.ch/ipccreports/assessments-reports.htm>
- 14 Quotation attributed to Richard Alley, Evan Hugh Professor of Geosciences, Penn State University. See Peter N Spotts, 'Little time to avoid big thaw, scientists warn', *Christian Science Monitor*, 24 March 2006, www.csmonitor.com/2006/0324/p01s03-sten.html. Quote based on work by Julienne Stroeve, Marika M. Holland, Walt Meier, et al. 'Arctic sea ice decline: faster than forecast?', *Geophysical Research Letters* 2007, 34: 9, p L09501, and Mark C Serreze, Marika M Holland, Julienne Stroeve, 'Perspectives on the Arctic's shrinking sea-ice cover', *Science* 2007, 315, 5818, p 1533-1536. For a longer explanation see David Spratt, Philip Sutton, *Climate Code Red*, Friends of the Earth, 2008.
- 15 Satellite images of ice mass date back to 1979, so assumptions about the extent of ice loss are based on a relatively short amount of time for which accurate data are available. Other ocean and weather trends, aside from anthropogenic climate change, are thought to have a significant influence over summer Arctic ice mass and its recovery in the winter.
- 16 Timothy M Lenton, Hermann Held, Elmar Kriegler et al, 'Tipping elements in the earth's climate system', *Proceedings of the National Academy of Sciences*, 12 February 2008, 105, 6, p 1786-1793. This paper's authors study literature on several indicators of warming and, with regard to Arctic sea ice, conclude that '... a summer ice-loss threshold [tipping point], if not already passed, may be very close and transition could occur well within this century'.

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- 17 J Hansen, M Sato, Ruedy, P et al, 'Dangerous human-made interference with climate: a GISS modelE study'. *Atmos Chem Phys* 2007, 7, p 2287-2312.
- 18 IPCC, *Climate Change 2007*, 2007. IPCC in fact consider values for CO₂ and its equivalents. The values as expressed in AR4 are 550ppm and 450ppm CO₂e, rather than 500ppm and 400ppm CO₂.
- 19 Ibid IPCC
- 20 See IPCC AR4, M Meinshausen, 'What does a 2°C target mean for greenhouse gas concentrations? A brief analysis based on multi-gas emission pathways and several climate sensitivity uncertainty estimates', JS Schellnhuber, W Cramer, N Nakicenovic, et al, *Avoiding Dangerous Climate Change*, Cambridge, Cambridge University Press, 2006. More recently, see, Martin Parry, Jean Palutikof, Clair Hanson et al, Squaring up to reality, *Nature*, 29 May 2008.
- 21 For more research on peaking and declining emissions concentrations, see Michel GJ den Elzen, Detlef P van Vuuren, 'Peaking profiles for achieving long-term temperature targets with more likelihood at lower costs', *Proceedings of the National Academy of Sciences*, November 7, 2007.
- 22 See http://unfccc.int/files/meetings/cop_13/application/pdf/close_stat_cop13_president.pdf
- 23 See UNFCCC, *Action taken by the Conference of the Parties at its thirteenth session*, 2007. FCCC/CP/2007/6/Add.1
- 24 See UNFCCC, Article 4.7. 'The extent to which developing country Parties will effectively implement their commitments under the Convention will depend on the effective implementation by developed country Parties of their commitments under the Convention related to financial resources and transfer of technology and will take fully into account that economic and social development and poverty eradication are the first and overriding priorities of the developing country Parties.'
- 25 Al Gore, 'Moving beyond Kyoto', *New York Times*, 1 July 2007.
- 26 The IPCC's SRES B1, which is in fact quite optimistic, is used as the reference 'business as usual' scenario. See <http://www.lennotech.com/greenhouse-effect/IPCC-SRES-scenarios-causes.htm> for an explanation.
- 27 Cumulative emissions is the phrase used to describe the build of gases over time. Because CO₂ has a life span of more than 100 years, much of the impact seen today is as a result of quantities of emitted during the 20th century. So while China and India are now major emitters, their cumulative emissions are still relatively small.
- 28 No regrets reductions are those that are available to a country at no cost, but that may not happen without regulations being imposed. These include more fuel efficient vehicles, increased insulation for buildings, more efficient lighting, reducing energy losses due to standby functions on electronic equipment and many more.
- 29 For a discussion of the CDM's shortcomings, see Michael Wara and David G Victor, 'A realistic policy on international carbon offsets', Program on Energy and Sustainable Development Working Paper 74, Stanford University, April 2008. Larry Lohman, an independent author and researcher, has also written much on the CDM's failings.
- 30 Sir Nicholas Stern, *Stern Review on the Economics of Climate Change*, 2006, http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm