

The first cut is the deepest?

Reducing global emissions



tearfund

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Tearfund is a Christian relief and development agency working with a global network of local churches to help eradicate poverty.

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Executive summary and recommendations

Climate change is having devastating impacts on the world's poorest and most vulnerable people and will eventually affect us all, regardless of where we live. This was highlighted recently by the International Scientific Congress on Climate Change, in Copenhagen, which emphasised that the impacts of climate change are happening faster than had been anticipated.¹

Drastic cuts in emissions must therefore be made as a matter of urgency. The world must move to an entirely new kind of development pathway as soon as possible.

Countries are currently negotiating a new climate deal under the United Nations Framework Convention on Climate Change, building on the Kyoto Protocol, with the aim of reaching agreement in Copenhagen in December 2009. To be successful, this deal must enshrine large-scale and rapid emissions cuts. Emissions must peak by 2015 and start to decline, and ambitious mid-term targets for developed countries amounting to cuts of at least 40 per cent on 1990 levels by 2020 are needed to drive down emissions. In the long term, global emissions must be reduced by at least 85 per cent on 1990 levels by 2050, with developed countries cutting their emissions by at least 95 per cent in the same time frame. These mitigation actions must be sustainable, and must not exacerbate existing problems of environmental degradation.

Developed countries, which are most responsible for climate change and which have most capacity to act, must take the lead in making reductions. But developing countries, particularly rapidly industrialising developing countries, will also need to limit their emissions supported by finance, technology and capacity-building from developed countries.

This is an enormous challenge, but it is also an opportunity to choose a different development pathway in both the North and the South. Cleaner and more sustainable ways to generate energy and provide transport have many benefits for people and the planet. We have a unique window of opportunity to break with development patterns of the past.

Developed countries must take the lead: they are most responsible and have greatest capacity. Low-carbon development is a term typically used with reference to developing countries, but all countries must shift to a different economic and environmental paradigm. This includes developed countries, which are beginning to invest in low carbon technologies, but risk being left behind as rapidly developing countries invest significant amounts in renewables and energy efficiency.² For example, one-third of China's and over two-thirds of South Korea's economic stimulus plans are devoted to low carbon investment – amounting to tens of billions of dollars a year, compared to only seven per cent of the UK's package and two per cent in the US.³

The Copenhagen deal is likely to shape emissions reductions over the next decade or so. This is a critical time to ensure a global peak in emissions, and the outcomes will have repercussions not just for the next decade but potentially for the whole of this century and beyond. They will determine whether or not we rise to, or are defeated by, the challenge of climate change.

Decision makers cannot get this wrong. To ensure a comprehensive, equitable, science-based post-2012 framework, the Copenhagen deal must contain the following:

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- 1 International Scientific Congress on Climate Change (2009) *Synthesis Report Climate Change: Global Risks, Challenges and Decisions*
 - 2 However, some rapidly developing countries are investing in both low and high carbon technologies concurrently which presents a more complex picture of an overall rush towards rapid development by a range of means.
 - 3 HSBC Global Research (February 2009) *A Climate for Recovery: The colour of stimulus goes green*

A shared vision that keeps global warming below two degrees

- The shared vision must cover all elements of the Bali Action Plan: mitigation, adaptation, finance and technology transfer.
- The shared vision must be aimed at keeping average global temperature rise well below two degrees but must explicitly state the elements required to achieve this, including a long-term global goal, a long-term goal for developed country emissions reductions, a mid-term goal for developed countries to reduce emissions, a stated peak year, and an agreed stabilisation level for greenhouse gases in the atmosphere.
- The global goal for reducing emissions should be to cut emissions by at least 85 per cent on 1990 levels by 2050.
- Developed countries should commit to reducing their emissions by at least 95 per cent on 1990 levels by 2050, and by at least 40 per cent on 1990 levels by 2020.
- The shared vision should commit to keeping average global temperature rise as far below two degrees (on pre-industrial levels) as possible, with a peak in global emissions by 2015, aiming to eventually stabilise emissions in the atmosphere at no more than 350ppm CO₂ (around 400ppm CO₂e).⁴

Developed countries taking the lead with tough and binding emissions cuts

- All developed countries must commit to extremely ambitious domestic targets in line with the scientific imperative, and respecting the principles of equity. This should amount to an aggregate target of at least 40 per cent cuts on 1990 levels by 2020 in the shape of Quantified Emissions Reductions Commitments (QERCs) – economy-wide, legally binding targets. These reductions must be fairly shared between countries according to responsibility and capacity to act.
- Five-year commitment periods for emissions reductions in developed countries should be maintained, with a scientific review scheduled for no later than 2015 to ensure adequacy of targets.
- Developed countries must reduce their emissions by at least 95 per cent on 1990 levels by 2050, and should develop zero-carbon action plans showing how they will achieve this.
- Offsets must be limited to – at the very most – a quarter of any emissions reduction target of 40 per cent or more below 1990 levels by 2020.⁵

Means to reduce emissions from international aviation and shipping

- Targets for reducing emissions from international aviation and shipping should be set, along with principles for participation and timelines for adopting measures. This could be in the shape of a levy or an emissions trading scheme, which should be designed to raise substantial climate finance for developing countries, while avoiding adverse impacts on such countries.

4 Stabilisation levels are essentially expressed in two different measures: firstly, as parts per million (ppm) of carbon dioxide or CO₂ in the atmosphere; secondly as ppm of carbon dioxide equivalent or CO₂e in the atmosphere, that is carbon dioxide and other equivalent greenhouse gases.

5 Any target lower than 40% cuts on 1990 levels by 2020 proposed by a developed country must be reached without the use of offsets.

A reformed carbon market or no-carbon market

- Cap and trade systems such as the EU Emissions Trading Scheme (EU-ETS)⁶ must introduce stringent and ambitious caps, serious restrictions on offsetting via the Clean Development Mechanism (CDM),⁷ tougher rules on banking and borrowing, and wholesale auctioning of emissions permits to industry.
- The current CDM has no place in a post-2012 climate regime. It, or any replacement mechanism, must ensure that emissions cuts made are genuinely additional and comply with sustainable development criteria.
- Reformed offset schemes must not use existing mitigation actions by developing countries to generate carbon credits, and they must be designed to avoid taking up the lowest-cost mitigation options in developing countries, which should count toward developing countries' own contribution.
- If the above reforms are not introduced, carbon markets are likely to fail to reduce global emissions or bring about sustainable low-carbon development in the South. In this case, the carbon market experiment should be abandoned rather than continuing to be institutionalised in a climate deal.

Necessary finance, capacity-building and technology from developed countries to enable developing countries to reduce their emissions and develop sustainably

- Developed countries should take on a dual target of tough emissions reductions at home and an obligation to finance emissions reductions (and adaptation) in the developing world.
- For the EU this means a target of at least 40 per cent emissions reductions on 1990 levels by 2020 and a funding obligation for mitigation and adaptation of at least €35 billion (\$50 billion) a year.⁸
- Developed countries must provide overall measurable, reportable and verifiable (MRV)⁹ finance of at the very least US\$100 billion a year from 2013 onwards in additional public financing to developing countries to support their mitigation actions. This money is in addition to the public funding of at least \$50 billion a year which is needed urgently for adaptation in developing countries.¹⁰

No double counting of emissions reductions and finance

- Double counting of emissions reductions and finance must be clearly prohibited in any Copenhagen agreement. If a developed country purchases offsets in the developing world, these offsets should only count towards the achievement of the developed countries' emissions reductions targets. It must not be counted as developed country financing obligations. It must not be counted as developing country emissions reductions.

6 The EU ETS is a cap and trade scheme established in 2005 to cover emissions from the European Union.

7 The Clean Development Mechanism was created by the Kyoto Protocol as an offset scheme to allow Annex I countries to buy emissions credits from emissions reduction projects in developing countries. It is also intended to bring about sustainable development benefits in the recipient country.

8 UK NGOs' Joint Position on the EC Communication (February 2009) *Towards a comprehensive climate change agreement in Copenhagen*; CAN Europe (March 2009) *Explanation of Current NGO Estimates on Total Financing Needs in Developing Countries and the EU's Fair Share as given in joint NGO letters to EU Heads of State and Government*

9 The term 'measurable, reportable and verifiable' or MRV is taken from the text of the Bali Action Plan and refers to both the provision of finance by developed countries and the emissions reductions actions taken by developing countries.

10 CAN International Finance Position Paper (2009) *Scale and Sources of Support for Developing Country Adaptation, Mitigation and Capacity Building*; Oxfam (2007) *Adapting to climate change: What's needed in poor countries, and who should pay*

A clean development pathway for developing countries, with financial and technological support from developed countries

- Developing countries as a group will need to reduce their emissions by at least 15–30 per cent on business as usual¹¹ by 2020 – but this must be supported with finance, technology and capacity-building from developed countries. This responsibility for reducing emissions will vary for developing countries according to their respective responsibilities and capabilities.
- Developed countries must recognise the existing efforts by developing countries to reduce their emissions without support from developed countries, many of which dwarf efforts by developed countries. Developed countries must not attempt to convert these actions into carbon credits: developing countries' Nationally Appropriate Mitigation Actions (NAMAs)¹² should not generate carbon credits.
- A NAMAs registry should be established, so that developing countries can register MRV actions and receive MRV support.
- Developing countries, with the exception of Least Developed Countries (LDCs) and Small Island Developing States (SIDS), for which this should be encouraged but voluntary, should develop Low Carbon Development Strategies that are economy-wide and which identify NAMAs. They should also develop long-term low-carbon plans up to 2050, as long as developed countries develop zero carbon action plans. In order to prepare these plans, developing countries must receive appropriate near-term financing and capacity building support.
- Some newly industrialised countries, such as South Korea, Singapore and Saudi Arabia, should take on economy-wide emissions limitations commitments in the next commitment period, and should not be eligible for financial support from developed countries.¹³
- LDCs and SIDS and other vulnerable countries with an economic capability to take action on climate change of less than \$1,000 per person per year should receive full support for the incremental costs of any emissions reduction projects.¹⁴
- Countries with a per capita economic capability to take action on climate change of between \$1,000 and \$12,000 per year should receive support for emissions reduction projects developed as part of an economy-wide plan on a sliding scale according to their capacity.¹⁵

11 Reductions on business as usual differ from reductions made on a firm baseline such as 1990. Emissions will rise very fast if rapidly developing countries continue their current projected patterns of growth, so making reductions on business as usual is an attempt to slow the growth of emissions on what they might be, rather than an attempt to reduce below a specific level. It is thus more difficult to define.

12 The Bali Action Plan proposed that developing countries consider taking on 'nationally appropriate mitigation actions' now often referred to as NAMAs.

13 These countries are Qatar, Singapore, Kuwait, United Arab Emirates, Bahrain, Cyprus, Israel, South Korea, Saudi Arabia, Trinidad and Tobago, Malta, Libya. See section 7 for more details.

14 Oxfam (2009) *Hang Together or Separately? How global co-operation is key to a fair and adequate climate deal at Copenhagen* Oxfam estimates the provision of financial support *in line with the respective capabilities of countries, measured by dividing the absolute value of a country's GNI that accrues to the population living above a per capita income threshold of \$9,000 per year, by its total population*. GNI above the development threshold is derived by estimating each country's normal log income distribution using its GNI per capita and its Gini coefficient (a measure of income inequality).

15 Oxfam (2009) *ibid*

1 Introduction

Climate change is having a devastating effect on the poorest people in the poorest regions of the world. In order to prevent catastrophic impacts, the world must aim to keep average global temperature rise as far below two degrees as possible compared to pre-industrial levels, and perhaps as low as 1.5°C to ensure the survival of some small-island states.

As the recent Copenhagen Science Congress concluded, *'IPCC as well as more recent scientific research indicates that even with temperature rises less than 2°C, impacts can be significant, although some societies could cope with some of these impacts through proactive adaptation strategies. Beyond 2°C, the possibilities for adaptation of society and ecosystems rapidly decline with an increasing risk of social disruption through health impacts, water shortages and food insecurity.'*¹⁶

Once temperature increase rises above 2°C, up to 4 billion people could experience growing water shortages. Agriculture could cease to be viable in parts of the world, particularly in the tropics, and millions more people will be at risk of hunger. This rise in temperature could see 40–60 million more people exposed to malaria in Africa. The warmer the temperature, the faster the Greenland ice sheet will melt, accelerating sea-level rise. Above 2°C, the risk of disintegration of the West Antarctic ice sheet rises significantly, as does the greater danger of 'tipping points' for soil carbon release and the collapse of the Amazon rainforest.¹⁷

Current emissions trajectories indicate that we are on track for a three- or even four-degree rise in temperatures unless emissions are drastically reduced.¹⁸ Four degrees would clearly be catastrophic – the developing world is most vulnerable and will feel the impacts first, but rich nations would also face enormous and irreparable changes to lives and livelihoods.

Tearfund has worked for many years on how best to help communities in developing countries to adapt to climate change, which is a natural strategy for an agency focused on the transformation of the poorest and most vulnerable communities in the world. But unless emissions are rapidly curbed in both the North and the South, adaptation will prove impossible for some of those with whom we work. Therefore, urgent and drastic mitigation is the best way to ensure vulnerable communities in developing countries will be able to adapt to climate change.

This means that drastic cuts in emissions of greenhouse gases are required as a matter of urgency. Internationally there is still debate about what the scale of emissions cuts should be, how quickly the cuts should be made, how the effort of reducing emissions should be divided among developed and developing countries, and who should pay for emissions reductions in developing countries.

In this paper we set out Tearfund's views on how emissions reductions should be addressed within a comprehensive global climate deal to take effect from 1 January 2013.

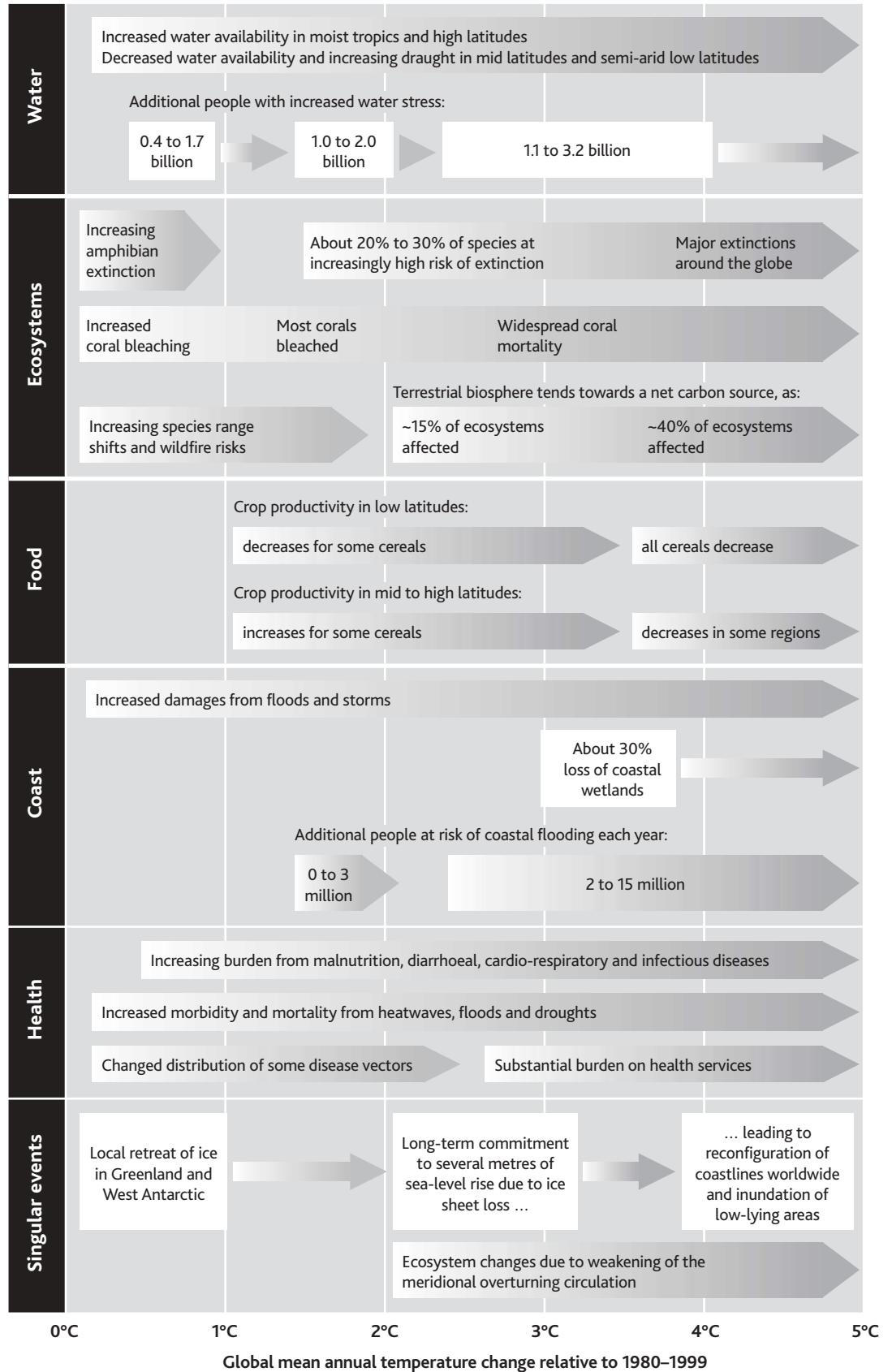
16 International Scientific Congress on Climate Change (2009) *Synthesis Report Climate Change: Global Risks, Challenges and Decisions*

17 Tearfund (2007), *Two degrees, one chance*

18 Potsdam Institute for Climate Impact Research UNFCCC Side Event (June 2009) *Emissions in line with staying below 2°C? Presentation evaluation of current country positions: a bottom-up analysis*

TABLE 1
Examples of global impacts projected for changes in climate (and sea level and atmospheric CO₂ where relevant)

Source: IPCC AR4



The Bali Action Plan

At COP13 in Bali in December 2007, all countries party to the UN Framework Convention on Climate Change agreed to negotiate according to the following mandate on future mitigation action within the Convention:

- 1(b) *Enhanced national/international action on mitigation of climate change, including, inter alia, consideration of:*
- i measurable, reportable and verifiable nationally appropriate mitigation commitments or actions, including quantified emission limitation and reduction objectives, by all developed country Parties, while ensuring the comparability of efforts among them, taking into account differences in their national circumstances*
 - ii nationally appropriate mitigation actions by developing country Parties in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner*
 - iii policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries*
 - iv cooperative sectoral approaches and sector-specific actions, in order to enhance implementation of Article 4, paragraph 1(c), of the Convention*
 - v various approaches, including opportunities for using markets, to enhance the cost-effectiveness of, and to promote, mitigation actions, bearing in mind different circumstances of developed and developing countries*
 - vi economic and social consequences of response measures*
 - vii ways to strengthen the catalytic role of the Convention in encouraging multilateral bodies, the public and private sectors and civil society, building on synergies among activities and processes, as a means to support mitigation in a coherent and integrated manner.*

Governments also agreed to negotiations within the Kyoto Protocol regarding future commitments of parties to the protocol (all Annex I countries except for the USA), and recognised the Fourth Assessment Report (AR4) of the Intergovernmental Panel on Climate Change (IPCC), which indicated that Annex I countries would need to reduce their emissions by 25–40 per cent on 1990 levels by 2020.

UNFCCC COP13 Decision1/CP.13 *The Bali Action Plan* (2007)

2 Global emissions reductions

In the light of recent scientific assessments, it is critical to establish the overall level of emissions reductions needed globally, both in the short term and over a longer period. Setting a longer-term target to establish a trajectory for reducing emissions has proved controversial for many developing countries, because any overall target for 2050 has huge implications for the emissions pathways available to them. Nevertheless, this is a critical and necessary step, although if it is not accompanied by urgent mid-term targets for developed countries it will remain a meaningless future goal that does not drive immediate policy-making on climate change. Many developing countries remain understandably suspicious of efforts to determine a long-term goal for 2050 while developed countries refuse to contemplate tough emissions cuts for 2020.

Various factors are considered by scientists and policymakers in determining an appropriate long-term target: maximum temperature rise, stabilisation levels of greenhouse gases in the atmosphere, and total tonnes of CO₂ and other greenhouse gases released. These are all interrelated, although there is some uncertainty in determining which emissions reductions might guarantee a certain stabilisation level or temperature rise.

2.1 Temperature rise and greenhouse gas concentration

Many scientists, policymakers and organisations – including Tearfund – have long considered that in order to avoid catastrophic climate change, average temperature rise must be kept as far below two degrees above pre-industrial levels as possible, for reasons outlined in the introduction above.

Political support for this figure is building. The EU supports limiting global warming to two degrees, and recently the G8 and the Major Economies Forum (MEF)¹⁹ acknowledged the scientific importance of keeping temperature rise below two degrees. However, these groups of countries either do not specify what avoiding a two-degree rise means practically, in terms of stabilisation levels and emissions cuts, or have a very different understanding of these two factors from most of civil society.

The EU, for example, refers to a two-degree goal, but then bases its position that global emissions should be reduced by 50 per cent on 1990 levels by 2050 on a stabilisation scenario that overshoots and then stabilises at 450ppm CO₂e.^{20 21} Scientific evidence highlights that stabilising at such a level means around a one-in-two chance of exceeding two degrees – thus rendering the EU's commitment to such a goal uncertain to say the least.²² The G8 and MEF did not provide detail of what targets, stabilisation rates and other policies would be needed to keep temperature rise below two degrees, and thus it is difficult to establish whether this is just empty rhetoric.

Recent research by the Tyndall Centre presents a bleak picture of the effort required to achieve a less than two-degree rise, and suggests that retaining this goal in itself is unhelpful and unrealistic.²³ Yet Tearfund

19 The G8 Leaders' Declaration *Responsible Leadership for a Sustainable Future and Declaration of the Leaders of the Major Economies Forum on Energy and Climate* (2009) can be found at: www.g8italia2009.it/G8/Home/Summit/G8-G8_Layout_locale-1199882116809_Atti.htm

20 European Commission Staff Working Document (January 2009) *Extensive background information and analysis accompanying the EC Communication 'Towards a comprehensive climate change agreement in Copenhagen'*

21 Stabilisation levels are essentially expressed in two different measures: firstly, as parts per million (ppm) of carbon dioxide or CO₂ in the atmosphere; secondly as ppm of carbon dioxide equivalent or CO₂e in the atmosphere, that is carbon dioxide and other equivalent greenhouse gases. CO₂e will always be higher than CO₂, but converting one to the other is not a linear calculation. The impact of aerosols in the atmosphere currently has a short-term cooling effect, and effectively masks part of CO₂e concentrations in the atmosphere. As efforts are made to reduce aerosol emissions, this cooling effect and masking of part of emissions concentrations will diminish over time.

22 Stern et al (2006) *Stern Review of the Economics of Climate Change*, HM Treasury

23 Anderson and Bows, Tyndall Centre (2008) *Reframing the climate change challenge in light of post-2000 emissions trends*

cannot abandon a commitment to this figure, however challenging it may be to achieve: our work among the world's poorest communities convinces us that rises above two degrees would be catastrophic for billions.

Thus, greater clarity is needed on what two degrees requires in terms of stabilisation rates and overall emissions cuts.

Scientist James Hansen suggests that to avoid catastrophic climate change, CO₂ will need to be reduced from its current 389ppm CO₂²⁴ (around 430ppm CO₂e) to at most 350ppm CO₂²⁵ (around 400ppm CO₂e).

Recently the Alliance of Small Island States (AOSIS) announced that 2°C was too high a limit for temperature rise, and would threaten the survival of many small islands.²⁶ AOSIS considers that average global temperature rise must be kept below 1.5°C, achieved by stabilising emissions at 350ppm CO₂e (or around 280ppm CO₂). This effectively means returning to pre-industrial levels of CO₂ in the atmosphere, far below today's levels. This would mean the risk of exceeding 2°C was minimal.

While Tearfund is keen to ally with the poorest and most vulnerable people, including those living in small islands threatened by climate change, this poses an enormous and, some would say, insurmountable challenge given how far this level has already been exceeded. Historic greenhouse gas emissions have already led to a 0.8 degree rise in temperature²⁷ since pre-industrial times, and there is perhaps the same amount of warming again already in the pipeline. It is very difficult to see how a 1.5°C limit would be achievable without using currently controversial and untested geo-engineering technologies to remove CO₂ from the atmosphere, some of which could have severe unintended environmental consequences.

Even a stabilisation at 350ppm CO₂ (as advocated by Hansen) requires reducing emissions significantly on current levels. But while recognising the enormous political, social and economic challenges, as well as the potential scientific contradictions of aiming for a lower stabilisation level than today, Tearfund, as a development agency committed to working with some of the world's poorest and most vulnerable communities, believes that global emissions will need to peak by 2015 and eventually decline to levels of 350ppm CO₂ (or 400ppm CO₂e). This is in line with the need to keep average global temperature rise as far below 2°C as possible, and to avoid catastrophic impacts.

2.2 A global carbon budget

A different way to determine the necessary trajectory for reductions is to identify a limit on global emissions in tonnes of CO₂ or CO₂e. Increasingly, it is believed that this may be a more accurate means of determining emissions goals. The Potsdam Institute for Climate Impact Research published research in Nature in May 2009, highlighting that cumulative emissions between 2000 and 2050 should be limited to 1 trillion tonnes of CO₂ in order to limit the chances of exceeding two degrees to 25 per cent.²⁸

And recently, a number of NGOs have worked together to produce a proposed Copenhagen Treaty text. This document suggests restricting the planet's annual global carbon budget from all sources of greenhouse gases to no more than 36.1 Gt CO₂e (giga tonnes of CO₂ and other greenhouse gas emissions) by 2020, which is roughly equivalent to 1990 levels. The annual global carbon budget would then need to decline to 7.2 Gt CO₂e in 2050, or around 80 per cent below 1990 levels.²⁹

24 Current levels of CO₂, measured in June 2009 by Earth Systems Research Laboratory (ESRL) / National Oceanic and Atmospheric Administration (NOAA), Mauna Loa Observatory, Hawaii.

25 Hansen et al (2008) *Target Atmospheric CO₂: Where Should Humanity Aim?*

26 France 24 (December 2008) *Not waving but drowning: Island states plead at UN talks*

27 Hansen et al (2006) *Global Temperature Change Proceedings of the National Academy of Sciences* 103(39): 14288-14293

28 Meinshausen et al (April 2009) *Greenhouse-gas emissions targets for limiting global warming to 2°C*, Nature

29 (2009) *A Copenhagen Climate Treaty: A proposal for an amended Kyoto Protocol and a new Copenhagen Protocol by members of the NGO community Version 1.0*

2.3 Peak year

Scientists generally agree that emissions could potentially exceed a safe level briefly, as long as they are quickly reduced thereafter, although given the long atmospheric life of CO₂ this is not a wholly reliable approach to climate policy. Some have likened this to turning up an oven to 200 degrees, then turning it down to 150 degrees before it has fully heated up. This represents our current situation – atmospheric CO₂ has already exceeded safe levels, but if emissions peak very soon and start to reduce, it is to be hoped that it will be possible to stabilise at a lower level, thus preventing global warming exceeding two degrees.

The IPCC's lowest emissions reductions scenario which is based on keeping average temperature rise to 2–2.4°C supports a peak by at the latest 2015.³⁰ Tearfund believes, on the basis of the IPCC and other scientific evidence, that global emissions should peak no later than 2015 and then decline to stabilize at 350ppm CO₂ or lower.

This is because recent research emphasises the need for emissions to be reduced sooner rather than later, and demonstrates that delay will increase the risks of adverse impacts, increasing the likelihood of reaching dangerous tipping points such as the collapse of the Amazon rainforest or the breaking-up of the Greenland and West Antarctic ice sheets. John Schellnhuber of the Potsdam Institute on Climate Impact Research states *'If this (peak in 2015) is delayed by even five years and emissions peak in 2020, we will need to reduce emissions by 6 per cent annually thereafter.'*³¹

Thus ensuring a global peak in emissions in the next six years will be critical to the success or failure of a Copenhagen deal, and should be a key focus for decision makers.

TABLE 2
Summary of IPCC scenarios for emissions reductions, including updated data for developing countries

	Category i	Category ii	Category iii
Atmospheric concentration of GHG CO ₂	350–400ppm	400–440ppm	440–485ppm
Atmospheric concentration of GHG CO ₂ e	445–490ppm	490–535ppm	535–590ppm
Global mean temperature increase above pre-industrial level °C	2 to 2.4°C	2.4 to 2.8°C	2.8 to 3.2°C
Peak year	2000–2015	2000–2020	2010–2030
Global emissions reductions required by 2050	-50 to -85%	-30 to -60%	+5 to -30%
AI emissions reductions required by 2050	-80 to -95%		-40 to -90%
AI emissions reductions required by 2020	-25 to -40%		-10 to -30%
NAI emissions % reduction from business as usual	-15 to -30% (on BAU)		0 to -20% (on BAU)

Source: Rows 1–5 IPCC AR4 Summary for Policymakers, Table SPM.6; Rows 6–7 IPCC AR4 WGIII Box 13.7; Row 8 Michel den Elzen and Niklas Hohne (2008) *Reductions in greenhouse gas emissions in Annex I and non-Annex I countries for meeting concentration targets.*

30 IPCC (2007) *Fourth Assessment Report of the Intergovernmental Panel on Climate Change*

31 *Nature* (May 2009) 'Nobellists urge action on climate change'

2.4 2050 global target

In the light of the above, emissions will have to be drastically reduced by 2050. The IPCC's AR4 states that global reductions in the order of at least 50–85 per cent on 1990 levels by 2050 are required, but this projection is based on an effort to keep average global temperature rise in the range of 2–2.4 degrees rather than below two degrees.³² Subsequent science suggests that the lower end of this spectrum would be grossly inadequate, and that even the upper end may not be enough.

The G8 has recognised that global emissions should be reduced by 50 per cent by 2050. However, this only gives around a 50 per cent chance of keeping temperature rise below two degrees. This is not enough.

Tearfund therefore believes that emissions should be reduced globally by at least 85 per cent by 2050, based on 1990 levels, and preferably by as near to 100 per cent as possible.

2.5 Reducing emissions from international aviation and shipping

Currently, international aviation accounts for around two per cent of global carbon emissions (although non-CO₂ impacts of aviation roughly double its impact on the climate), and emissions are on course to double or even triple by 2050. The international maritime sector accounts for around three per cent of global carbon emissions, and again these emissions are forecast to double or triple by 2050. In the context of the deep global emissions cuts required to avoid warming of two degrees, international bunker emissions will become a very significant fraction of the overall total.

If emissions from international aviation are not included in domestic emissions reductions targets for developed countries, as seems likely, then an international approach to reducing this rapidly growing source of emissions will need to be agreed. Emissions from international shipping cannot be included easily in domestic developed country targets and will also need to be dealt with as a sector at the international level.

The International Maritime Organisation and the International Civil Aviation Organisation have failed over the last decade to agree an approach to reducing overall emissions in these sectors. To avoid further delay, the UNFCCC should take decisive action in Copenhagen that sets targets for the sectors, agrees principles of participation, and establishes timelines to develop and adopt measures. A scheme to reduce these emissions could take the form of a levy on emissions or an emissions trading scheme for these sectors. Such a scheme would need to be set up in a manner that does not adversely affect developing countries; for example, by introducing some exemptions to exclude small operators on routes to the most vulnerable countries. Ideally it would target private ship or airline operators, rather than countries, meaning that the financial burden would not fall on developing country governments.

International sectoral approaches to addressing emissions from aviation and shipping could also be a significant source of MRV financing for developing country adaptation and mitigation. Depending on the design of the scheme, measures could raise in excess of \$10 billion annually from each sector.³³

2.6 Preventing deforestation

Given that around 20 per cent of global emissions emanate from deforestation, mainly in the South, it is critical that emissions from this sector are halted as a matter of urgency. This issue is beyond the scope of this paper, but it is vital to flag that success or failure in reducing emissions from deforestation will be a defining factor in whether the global community succeeds in keeping average global temperature rise below two degrees.

32 IPCC (2007) *Fourth Assessment Report of the Intergovernmental Panel on Climate Change*

33 For more information about reducing emissions from international bunkers see Lockley, Peter (2008) *Bunker Mentality: International Aviation and Shipping Emissions in post-2012 climate policy*, WWF Global Climate Policy Discussion Paper

3 Developed country targets³⁴

Tearfund acknowledges that reductions in emissions must be made globally and that all countries should contribute in line with their respective responsibilities and capabilities. However, there is a huge variation in current and historic levels of greenhouse gas emissions among countries. For example, in the USA the average citizen emits 20.6 tonnes of CO₂ – in the UK this figure is 9.8 tonnes, in China 3.9 tonnes, in India 1.2 tonnes and in Malawi less than 0.1 tonnes.³⁵

Developed countries bear a large historic responsibility for emissions to date, and have a greater capacity to act to reduce their emissions. Developed countries are responsible for around 76 per cent of emissions already in the atmosphere.³⁶ Developing countries still have high levels of poverty, and require space to develop sustainably and to reduce poverty. Developed countries must therefore take the greatest share of the effort in reducing emissions.

The level of reductions made by developed countries will also determine the level of effort that will have to be made to reduce emissions in developing countries. The more developed countries are able to rapidly reduce emissions, the more atmospheric space for development is available for developing countries. However, most developed countries have failed to reduce their emissions over the past few decades, and indeed many have increased their emissions.

Further, some developed countries seem inclined to rely upon offsetting their emissions in developing countries through carbon trading schemes such as the Clean Development Mechanism (CDM) rather than making domestic reductions. This trend is deeply troubling – developed countries must take decisive and rapid action to develop low-carbon economies, at the same time as providing financial support for developing countries to reduce their emissions.

3.1 2050 goal for developed countries

IPCC AR4 suggests that developed countries must reduce their emissions by at least 80–95 per cent on 1990 levels by 2050.³⁷ As we have seen, this figure is not aimed at keeping average global temperature rise as far below 2°C as possible, but at around 2–2.4°C.

Tearfund therefore considers that developed countries must reduce their domestic emissions by at least 95 per cent on 1990 levels by 2050. Ideally they should aim for 100 per cent net reductions by 2050.

In order to achieve this, all developed countries should provide binding zero-carbon action plans, as proposed in the Copenhagen Treaty presented by key organisations in June 2009: 'These plans would outline how a country will meet both its obligations, charting the country's emissions pathway in line with the 2050 global goal and outlining the actions that will ensure that it meets its legally binding target in the short term and stay within the industrialised carbon budget in the long term.'³⁸

34 Throughout this paper the term 'developed countries' is used to refer to those countries included in Annex I to the UN Framework Convention on Climate Change.

35 World Bank (2009) *The Little Green Data Book 2008*

36 76 per cent of cumulative emissions since 1850, excluding land use change and forestry. See: Baumert KA, Herzog T, Pershing J (2005) *Navigating the Numbers, Greenhouse Gas Data and International Climate Policy*; World Resources Institute: 31; Hansen J, et al. (2007) *Dangerous human-made interference with climate: A GISS model E study*, Atmos. Chem. Phys.

37 IPCC (2007) *Fourth Assessment Report of the Intergovernmental Panel on Climate Change*

38 (2009) *A Copenhagen Climate Treaty: A proposal for an amended Kyoto Protocol and a new Copenhagen Protocol by members of the NGO community Version 1.0*

3.2 2020 goal for developed countries

Given that global emissions must peak by 2015, action to reduce emissions must be taken urgently. Developed countries must therefore take on steep mid-term emissions reductions goals for 2020.

IPCC AR4 proposes cuts for developed countries of 25–40 per cent on 1990 levels by 2020, these are also aimed at keeping average global temperature rise to 2–2.4 degrees. Recent science indicates that the lower end of this range is utterly insufficient to keep temperature rise below two degrees. Many developing countries in the G77 and China group, and the Climate Action Network International (CAN-I), have now taken the view that developed countries should agree to an aggregate target of more than 40 per cent cuts on 1990 levels by 2020.³⁹ For many countries (including the UK) this would in fact mean a cut of more than 40 per cent by 2020, as there are varying degrees of responsibility for emissions and capability to act within Annex I.

However, by August 2009, aggregate emissions reduction pledges by developed countries only amounted to cuts of between 10–16 per cent below 1990 by 2020.⁴⁰ The EU currently proposes 20 per cent cuts by 2020 on 1990 levels, rising to 30 per cent cuts if other countries make a 'comparable effort'. Japan has recently increased its pledge to reduce emissions by eight per cent below 1990 levels by 2020 to 25% cuts on 1990 levels by 2020, although the conditions for it doing so are not clear. US President Obama has said he will return the USA to 1990 levels of emissions by 2020, although current draft domestic legislation would mean higher cuts. Canada's laws imply emissions reductions of just three per cent on 1990 levels by 2020. Australia has said it will cut emissions by 25 per cent on 2000 levels by 2020 if other countries, including developing countries, make what it deems to be acceptable levels of cuts, otherwise it will cut back by a mere five per cent on 2000 levels. New Zealand announced a target of 10–20% cuts on 1990 levels, as long as stringent conditions are met. This means that the level of developed countries' ambition must dramatically increase – the targets currently on the table are far below what is scientifically necessary.

Tearfund accepts that a 40 per cent target poses a real challenge, particularly for those countries that have not acted to reduce emissions over the past two decades. However, the science is very clear as are the likely impacts on poor communities: developed countries must ramp up their efforts to reduce emissions and come back to the table with a higher level of ambition for their 2020 targets. Tearfund believes that developed countries must collectively reduce their emissions by 40% below 1990 levels by 2020.

3.3 Nature of targets

Targets for developed countries must be different in nature from actions taken by developing countries. Tearfund considers that all developed countries must commit to extremely tough domestic targets in the shape of Quantified Emissions Reductions Commitments (QERCs) – economy-wide, legally binding targets.

In order to ensure accountability, and flexibility in moving with the latest science, Tearfund strongly believes that commitment periods under any Copenhagen agreement should keep the current Kyoto structure of five-year periods on an ongoing basis starting with the period 2013–2017. Furthermore, provision must be made for a comprehensive scientific review of targets by 2015 at the latest, on the basis of the IPCC's fifth assessment report.

Finally, a strict compliance regime must be in place to ensure that these targets are met by developed countries.

39 CAN-International (2009) *Position on Annex I aggregate target*

40 AOSIS (11 August 2009) *Aggregate Annex-I reductions for 2020*. Note that the UNFCCC Secretariat Note from August 2009 calculates aggregate Annex I pledged reductions as 13–21% on 1990 levels by 2020. However, the US is not included in this analysis. UNFCCC (1 August 2009) *Compilation of information relating to possible quantified emissions limitation and reduction objectives as submitted by Parties. Informal note by the secretariat*. Both the AOSIS and UNFCCC figures were calculated when the Japanese pledge stood at only eight per cent cuts on 1990 levels, and thus these aggregate totals should rise when recalculated.

3.4 Differentiation between developed countries

It is crucial to note that developed countries within Annex I have different responsibilities for emissions, and different capabilities in reducing emissions. Tearfund considers that ideally, the sharing of effort in emissions reductions between developed countries should be guided by a principled approach based on responsibility for emissions and ability to act. This could be, for example, the Greenhouse Development Rights Responsibility and Capacity Index,⁴¹ or Oxfam's Responsibility-Capability Index analysis, which takes into account both history of past emissions and current levels of income. Oxfam's analysis of Annex I fair shares actually attributes more than 95 per cent of Annex I's target to just six countries and groups: Australia, Canada, the EU, Japan, Russia and the USA.⁴²

41 Baer et al (2008), *The Right to Development in a Climate Constrained World: The Greenhouse Development Rights Framework, revised second edition*, Heinrich Boll Foundation, Christian Aid, EcoEquity and Stockholm Environment Institute

42 Oxfam (2009) *Hang Together or Separately? How global co-operation is key to a fair and adequate climate deal at Copenhagen*

4 The role of offsets in achieving developed country targets

Tearfund is deeply troubled by the failure of the carbon market to generate deep and binding cuts in emissions and to incentivise low-carbon development in the North and South. Carbon markets are intended to reduce emissions by setting a cap on emissions and allowing countries and companies to trade permits to pollute – so those that need more can buy them from those that have a surplus. However, it is not surprising that the current system does not generate cuts: rather than being a 'cap and trade' system that places a cap on emissions and allows trade within this cap, the current system is rather a 'cap and offset' that allows carbon credits to be bought in from other countries that are not capping emissions. This has resulted in many practical problems. In theory, a tonne of carbon saved is the same wherever in the world the reduction takes place. But in practice this is rarely the case.

Cap and trade schemes such as the EU-ETS have set weak caps that have failed to significantly drive down emissions in Europe and have permitted large amounts of offsets to be used. It is disturbing to note that draft US legislation also proposes massive levels of offsets to achieve US emissions reductions overseas.

The UK government is particularly keen to establish linkages between existing and new cap and trade schemes with a view to establishing a cap and trade scheme covering the whole of the OECD by 2020. In principle this could work, but in practice unless cap and trade schemes and offset schemes such as the CDM are dramatically reformed this could be a huge distraction from the business of reducing emissions.

The main offset mechanism established by the Kyoto Protocol, the CDM, currently fails to guarantee that emissions reductions offset in the developing world are truly additional. David Victor, head of Stanford's Energy and Sustainable Development Program, believes that 'between a third and two thirds' of CDM offsets do not represent actual emission cuts.⁴³ Three-quarters of projects were already up and running at the time they were approved by the CDM – suggesting that most would have happened anyway.⁴⁴ This means that when developed countries or companies buy permits from the CDM instead of cutting their own emissions, a significant proportion of the time no real cuts are made.

The CDM is also intended to assist developing countries in achieving sustainable development. But as WWF notes, 'There, however, appears to be a trade-off between the CDM aim of supplying emission credits at the lowest cost and the promotion of sustainable development. The former aim has clearly taken precedence. Promoting sustainable development through poverty alleviation or employment and community benefits seems to have been largely forgotten.'⁴⁵

Further, many countries, particularly those that make up the EU, place a strong reliance on the carbon market to generate funds for adaptation and mitigation in developing countries. Tearfund strongly believes that the carbon market should not be the main source of finance for developing country action on climate change. (See below on double counting, and on MRV finance at [Section 6](#).)

Tearfund believes the carbon market needs wholesale reform and the current CDM should not form part of any post-2012 climate regime. It, or any replacement mechanism, must ensure that emissions cuts made are genuinely additional and comply with sustainable development criteria.⁴⁶

43 *Carbon Control News* (March 2008) 'Stanford Study May Stir Debate on Limiting Costs in Climate Bills'

44 *International Rivers* (November 2008) 'Rip-Offsets: the Failure of the Kyoto Protocol's Clean Development Mechanism'

45 WWF (November 2007) Background note to the report *Is the CDM fulfilling its environmental objectives? An evaluation of the CDM and options for improvement*

46 Further, the project-based offsetting typified by the CDM is inappropriate for many developing countries where more comprehensive sectoral approaches may be more effective in reducing emissions. A project based offsetting approach may, however, be suitable for LDCs where sectors are not well developed.

Offsetting by developed countries must be seriously restricted to no more than a quarter of their emissions targets, as long as their emissions targets are 40 per cent or above cuts on 1990 levels by 2020. If emissions targets are lower than 40 per cent, no offsetting should be permitted at all. This is to drive the development of sustainable low-carbon economies in the North. There is much rhetoric about low-carbon development in the South, but the North too must genuinely change its patterns of consumption and energy use and develop in a more sustainable way. Continuing to live as we in the North do and paying other people to make the cuts in emissions elsewhere will not fuel the energy and lifestyle revolution needed to tackle climate change. It will not challenge businesses to be innovative and to invest much more in non-fossil fuel alternatives to create energy, become more efficient or find new low-carbon transport solutions.

Cap and trade systems such as the EU-ETS must be reformed to introduce more stringent and ambitious caps, serious restrictions on offsetting via the CDM, tougher rules on banking and borrowing, and wholesale auctioning of emissions permits. Any new cap and trade systems must also be set up in ways that do not make the mistakes of the ETS and allow business as usual.

If sufficient reforms and safeguards cannot be introduced to post-2012 market mechanisms, the carbon market experiment as a means of reducing global emissions and encouraging sustainable development should be scrapped, rather than enshrined as a cornerstone of future international action on climate change in a new climate deal.

4.1 Double counting of emissions cuts and finance

A Copenhagen agreement must contain clear architectural provisions that prevent the double counting of emissions reductions. If a developed country purchases offsets in the developing world, these offsets should only count towards the developed countries' emissions targets. This reduction cannot also be counted as a developing countries' mitigation action.

Likewise, it is clear that financing of offsets through the carbon markets is simply financing of Annex I country emission reduction obligations – therefore this cannot be counted as part of Annex I countries' obligation to finance nationally appropriate mitigation actions in developing countries.

These principles must be firmly embedded in any final agreement, otherwise there is a risk that the environmental integrity will be compromised – fewer reductions will have physically occurred than been reported and thus the real level of emissions cuts will be overstated. Yet the impacts of these emissions will occur, and temperatures will rise accordingly, regardless of what is reported.

Further, if financing through offsets is counted twice, insufficient finance will be transferred to developing countries to help them achieve mitigation actions and thus the level of mitigation effort in the developing world is likely to be lower than what is needed to keep temperature rise below two degrees.

5 A dual target for developed countries

The Bali Action Plan contains a dual obligation for developed countries to make tough emissions reductions and to provide measurable, reportable and verifiable (MRV) financing, capacity-building and technology for MRV mitigation actions taken by developing countries.

From this the idea of an international mitigation obligation (on top of a domestic target) has been articulated, to form a binding and quantified mechanism to generate support for mitigation of greenhouse gas emissions in developing countries by industrialised nations.⁴⁷

In principle, this works by setting a developed country target for mitigation support in developing countries on top of the developed country emissions reduction targets. This could be expressed in tonnes CO₂e or as a specific sum of money. Recently the Climate Action Network Europe has adopted a position that the EU should take on a dual target of reducing emissions by at least 40 per cent on 1990 levels by 2020 and of providing at least €35 billion in new and additional public financing by 2020 for mitigation and adaptation in developing countries as Europe's quantified fair share in international public climate financing.⁴⁸ Tearfund supports this view.

The approach outlined in Greenhouse Development Rights (GDRs)⁴⁹ also lends itself to the idea of a dual mitigation and financing obligation, and Oxfam has recently set out proposals for a Global Mitigation and Financing Mechanism.⁵⁰

Further discussion of the obligation of developed countries to provide MRV financing and support for developing countries' MRV nationally appropriate mitigation actions follows in **Section 6**.

47 Wyns (March 2009) *From off-setting to on-setting' International Mitigation Obligations as MRV-able support for developing countries in a post-2012 framework*

48 Climate Action Network-Europe (July 2009) *EU 2020 dual obligation in the framework of a Copenhagen agreement*

49 Baer et al (2008), *The Right to Development in a Climate Constrained World: The Greenhouse Development Rights Framework, revised second edition*, Heinrich Boll Foundation, Christian Aid, EcoEquity and Stockholm Environment Institute

50 Oxfam (2009) *Hang Together or Separately? How global co-operation is key to a fair and adequate climate deal at Copenhagen*

6 Developing country mitigation action

At present no developing country has an emissions reduction target. This reflects the fact that developed nations are historically and currently responsible for most of the emissions that cause climate change. The emissions of countries such as China and India are increasing far more rapidly than previously anticipated, but they still have relatively low per capita emissions and high levels of poverty. Poorer countries, especially Least Developed Countries (LDCs) and most Small Island Developing States (SIDS), have very low emissions. Developing countries are also the most vulnerable to the impacts of climate change and have the greatest need for support from developed countries to enable them to adapt.

However, the science indicates that developing countries must cut their emissions at almost the same rate and over almost the same timescale as developed countries if we are to avoid a climate catastrophe. This situation is patently unfair, and has transpired because most developed countries have failed to make significant efforts to cut their emissions and decarbonise their economies. The fact that some developed nations will fail to achieve even their low Kyoto targets, even with the help of trading and offsets in the developing world, is a case in point.

This has serious consequences for the development aspirations of developing countries. As the CAN-International position on developing country mitigation action states, *'Developing countries must now develop under the twin burden of mitigating and adapting to climate change.'*⁵¹ Yet the threat to the planet and its most vulnerable inhabitants is so severe that Tearfund believes that emissions, particularly from rapidly developing countries, must be reduced as a matter of urgency.

6.1 The right to development and the right to survival

Tearfund works with some of the poorest and most vulnerable communities in the world, mainly in LDCs. The people with whom we work are responsible for negligible emissions, yet are facing huge consequences from climate impacts such as floods, droughts, storms and sea level rises. It is in their interest that both developed and rapidly developing countries cut their emissions as soon as possible. They, along with those who live on small islands that are already going underwater, have a right to survival.

Yet this must also be weighed against the right to development. To date, most development in the South has taken place along similar lines to that of the industrial North – through high-carbon industrialisation. Countries that have begun this process, such as India, China, Mexico and South Africa, but which still have extremely high levels of poverty and inequality, are understandably concerned that efforts to encourage emissions reductions will hamper their transition to becoming developed countries.

Tearfund's vision is to see the poorest and most vulnerable people lifted out of poverty, and thus we place a high value on the right to survival for all poor communities. However, this does not mean that the right to development is not important, simply that the kind of development that must take place has to be fundamentally different from the pathway the North has taken.

Clean development pathways that leapfrog existing high-carbon technologies and patterns should in the long run be highly beneficial for developing countries. There is an opportunity to avoid the mistakes the North has made, and to develop in a way that is truly sustainable. As CAN-I continues, 'The global transition to a low-carbon economy will create vast new markets for environmentally sustainable goods and services and new industries generating millions of jobs. By putting in place the right policies at home, developing countries can position themselves to benefit from this trend through national innovation and competitiveness strategies, thereby avoiding stranded assets. Countries that delay action risk missing an opportunity for technological advancement and leapfrogging to best available technology.'⁵²

51 CAN-International (2009) *Non-Annex I Mitigation Position Paper*

52 CAN-International (2009) *ibid*

However, this is currently more expensive than high-carbon development, and it is critical that the costs of enabling low-carbon development in developing countries are ultimately, for the most part, borne by developed countries.

6.2 A sustainable approach to reducing emissions

Increasingly, particularly in the context of sustainable development within LDCs and other developing countries, there is overlap between mitigation and adaptation. For example, projects to protect forests reduce deforestation and thus emissions, but also help communities adapt by offering protection from soil erosion and flooding. These sustainable, community-based methods of reducing emissions while addressing adaptation needs in the context of development should be prioritised.

Further, emissions reductions approaches that actively undermine development and environmental sustainability should be avoided. Much has been made of the potential for using biofuels to develop more sustainable transport fuels, but this has had a huge impact on global food price rises. According to an unpublished paper by the World Bank, leaked to the Guardian newspaper, biofuels and the resulting land use shifts, speculation and shortages that they have led to, were responsible for three-quarters of the 140% increase in food prices up to summer 2008.⁵³ This has had enormous detrimental effects on poor people in developing countries. Further, while calculating the greenhouse balance of biofuels is difficult, best estimates suggest that most biofuels currently in production provide only marginal benefits and at worst may lead to increased emissions and valuable carbon sinks being destroyed as a result of land use change.⁵⁴ This is not to condemn all biofuels as unsustainable – there is evidence that some smaller closed-loop agriculture methods of generating biofuels can be appropriate for local communities, but given the above they should be treated with caution.

It is vital that within governments and within international agencies like the UN, climate change is addressed in an integrated manner. Climate change mitigation must not be treated in isolation, but in a comprehensive manner alongside adaptation, environmental degradation, food security, disaster risk reduction and water resource management.

6.3 Measuring consumption or production?

One aspect not always fully reflected when considering the rise in emissions from developing countries is that much of these emissions are generated to produce goods for the developed world.

Currently, emissions are attributed to the country where they are emitted – which means that for some developed countries emissions have dropped as manufacturing has relocated to developing countries. A recent study concluded that half the recent rise in China's emissions can be attributed to goods produced for other countries.⁵⁵

So while last year China overtook the US as the world's biggest CO₂ emitter, about a third of all Chinese carbon emissions are the result of producing goods for export, mainly to the developed world.

By the current Kyoto rules the UK has reduced emissions by about 18% since 1990. But research by the Stockholm Environment Institute (SEI) suggests that, once imports, exports and international transport are accounted for, the real change for the UK has been a rise in emissions of more than 20%.⁵⁶

53 *The Guardian* (July 2008) 'Secret Report: biofuel caused food crisis'

54 Tearfund (December 2008) *Biofuels, climate change and food security*

55 Guan D, Peters GP, Weber CL and Hubacek K (2009), *Journey to world top emitter: An analysis of the driving forces of China's recent CO₂ emissions surge*, *Geophys. Res. Lett.*, 36

56 *The Guardian* (23 February 2009) 'West blamed for rapid increase in China's CO₂'

Some have proposed that targeting the consumption that leads to high emissions rather than targeting emissions where they originate would be a more effective way of controlling emissions. This could be done, for example by introducing a carbon tax on goods that consumers would pay that related to the carbon intensity of producing them.

Tearfund considers that while this may be a fairer way to allocate emissions, ultimately it is extremely difficult to see how this approach would be workable. It would be likely to lead to difficulties in accounting for emissions and increases the likelihood of double counting of emissions reductions.

A carbon tax on indirect emissions could also be regressive and penalise poor people in developed countries. And it is likely to be strongly opposed by developing countries like China, which would regard it as a potential trade barrier, likely to negatively impact their manufacturing industries. An in-depth discussion of this issue lies beyond the scope of this paper.

Tearfund believes that emissions should continue to be counted in the countries where they occur, but that most of the financing, technology and capacity building required to reduce developing country emissions should be provided by developed countries.

6.4 By how much should developing countries reduce their emissions?

IPCC AR4 estimated that developing countries accounted for 54 per cent of global greenhouse gas emissions in 2004.⁵⁷ This includes emissions from deforestation, accounting for around 20 per cent of global greenhouse gas emissions. However, there is a huge disparity among developing countries – the 100 most vulnerable countries, with a combined population of more than 1 billion people, are responsible for only three per cent of global emissions.⁵⁸

In order to stabilise at around 450ppm CO₂e, the IPCC AR4 says developed countries must reduce emissions by 25–40% and that developing countries will need to make a 'substantial deviation from baseline'. Recent science has built on this, suggesting that developing countries as a group will need to reduce their emissions by 15–30 per cent on business as usual by 2020 (in addition to any cuts made under the CDM) to achieve this stabilisation.⁵⁹ Given that this stabilisation level is unlikely to guarantee that average global temperature rise stays below two degrees, it is likely that developing countries will have to deviate from baseline by at least 30 per cent by 2020, combined with developed countries reducing their emissions by at least 40 per cent on 1990 levels by 2020. However, the level of deviation from baseline that can be achieved will depend on the level of finance and technology provided by developed countries. The EU has shown particular interest in advancing the need for developing countries to reduce emissions by 15–30% on business as usual by 2020, but has been reluctant to indicate the level of financial support that they would be willing to provide in order to achieve this reduction. The EC has recently estimated the EU's share of total global public climate finance in 2020 to be between €2–15 billion (\$3–22 billion) a year. These figures are far short of the €35 billion (\$50 billion) a year NGOs estimate to be the EU's share.⁶⁰

A one-size-fits-all approach to cutting emissions in developing countries is not appropriate. Attempts by some developed countries to push rapidly developing countries to take on the same kind of commitments as Annex I countries are unfair. Economy-wide targets are inappropriate for developing countries until they have reached a level of development that allows them to be considered 'developed'. Criteria for being recognised as a developed country would involve assessment of GDP per capita as well as levels of absolute poverty and inequality within a country. Binding targets for any developing countries are robustly rejected by the G77 and China group within the UN negotiations.

57 IPCC (2007) *Fourth Assessment Report of the Intergovernmental Panel on Climate Change*

58 Huq S, Ayers J, IIED (2007) *Critical list: the 100 nations most vulnerable to climate change*

59 den Elzen, Höhne (2008) 'Reductions of greenhouse gas emissions in Annex I and non-Annex I countries for meeting concentration stabilisation targets' *Climatic Change*

60 EC Communication (September 2009) *Stepping up international climate finance: A European blueprint for the Copenhagen deal*

However, there are a number of countries within the Non-Annex I grouping that could be considered developed if an objective responsibility and capability index were used to assess them, and who should thus ideally take on economy-wide targets in the next commitment period of a global deal – for example South Korea, Singapore, Saudi Arabia, Bahrain, Kuwait and Qatar. These countries should take on binding economy-wide emission limitation or reduction commitments (QELRCs).⁶¹

6.5 Current developing country action

Developing countries already participate in the current climate regime through the CDM, which allows Annex I countries to purchase part of their carbon reductions from developing countries (to date mainly India and China) rather than making cuts at home. However, there are concerns about whether all emissions cuts made under the CDM are genuinely additional (see [Section 4](#)), and current science suggests that drastic cuts must be made in both the North and the South simultaneously. Emissions cuts achieved through the CDM should only count towards a developed countries target, and thus large-scale emissions cuts, particularly in rapidly developing countries, must be achieved on top of any offsets.

However, it should not be assumed that developing countries are not already taking autonomous action on climate change. In fact, the plans and investments in some countries put many developed countries to shame.

China, for example, has plans to invest around \$440 billion over ten years in expanding renewable energy (which dwarfs almost any current plans by developed countries).⁶² South Korea recently announced that it plans to invest about two per cent of its GDP annually in environment-related and renewable energy industries over the next five years, to a total of \$84.5 billion. India has a climate change plan that among other aspects aims to install 20 gigawatts of solar power by 2020, more than three times as much as the photovoltaic solar power installed by the entire world last year.⁶³ South Africa, Mexico, Brazil and others all have plans (of varying robustness) to reduce their emissions. And Tuvalu, Costa Rica and Papua New Guinea have shown real leadership in declaring that they will aim to be carbon neutral by 2020, 2021 and 2050 respectively. All this has taken place without any commitments of MRV support from developed countries.⁶⁴

However, this should not be taken as an argument that MRV support is not required: a few countries will be able to act with little support, many will be able to do nothing without full support, most are likely to be somewhere in between. For example South Africa's climate plan in 2008 identified those actions it could take alone, and those additional actions it could take with international support. The fact that some developing countries are taking the lead in reducing emissions should not be used as an excuse by developed countries to fail to provide the necessary finance to support additional actions.

Comparatively, within the negotiations, most developed countries have failed either to commit to binding 2020 targets in the IPCC range of 25–40 per cent on 1990 levels, or to progress the financing and technology debates. This has made it difficult to make progress on encouraging further developing country mitigation action. There is a sense of injustice among many developing country representatives: why should they undertake radical decarbonisation at the risk of damaging their development when the North has not done so; and how can they do so without adequate support from the countries primarily responsible for the climate crisis?

61 In practice the opening up of the Annexes is controversial and could lead to certain countries leaving rather than new countries joining. However, there are architectural ways of resolving this, such as those proposed in the NGO Treaty. (2009) *A Copenhagen Climate Treaty: A proposal for an amended Kyoto Protocol and a new Copenhagen Protocol by members of the NGO community Version 1.0*

62 *China Post* (May 2009) 'China plans US\$440 bil. stimulus for green energy: report'

63 *Washington Post* (July 2009) 'Asian Nations Could Outpace U.S. in Developing Clean Energy'

64 There is a danger that if the carbon market is expanded, some of these existing actions will be absorbed into the carbon market to generate emissions reductions credits for developed countries – instead of counting as autonomous actions by developing countries. This must not be permitted to happen under any new climate regime.

6.6 Nationally Appropriate Mitigation Actions – NAMAs

The Bali Action Plan outlines the need for *'enhanced national/international action on mitigation of climate change including... nationally appropriate mitigation actions by developing country Parties in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner'*.⁶⁵

This clearly makes the MRV action by developing countries dependent upon the financial, technological and capacity-building support provided by developed countries.

South Africa and South Korea have proposed a registry for NAMAs by developing countries that are supported and enabled by developed countries. As South Korea stated, *'The registry could serve as the basis for an institutional framework of recognising domestic actions of developing countries as international mitigation actions in the post-2012 climate regime.'*

Since this proposal was made in 2008 it has gained widespread support, and it appears that the architecture of a new climate regime will include a NAMA registry that links MRV mitigation actions by developing countries with support from developed countries. Developing countries are strongly advocating for such a registry of actions to be voluntary, with the recognition that without registration an action will not receive international support. Tearfund supports this view, but believes that ultimately NAMAs must form an integrated part of national development plans, rather than simply forming an isolated set of project-based actions (see Economy-wide or project-based NAMAs below).

The EU submission in November 2008 outlined its approach to emissions reductions in developing countries, with a three-wedge graph that shows one wedge representing offsets that will count towards developed country emissions reductions targets, and a further two wedges together representing the 15–30 per cent deviation from baseline – consisting of autonomous actions by developing countries, and MRV mitigation actions supported by MRV finance, capacity-building and technology from developed countries.

This raises huge questions over which actions fall into which of the three categories, and a Copenhagen agreement will either need to establish a more objective means of assessing this or allow developing countries to decide how their actions are funded, to avoid the issues of double counting of emissions reductions and finance outlined earlier.

6.7 Autonomous NAMAs

For example, the steps being taken by China, India and South Korea outlined above clearly fall into the category of autonomous actions, but most developing countries lack the resources to be able to achieve this level of action autonomously. The Bali Action Plan clearly commits developed countries to providing the necessary support to enable developing countries' NAMAs – some developing countries take this to mean that all mitigation actions, including incremental costs, should be funded by developed countries and thus question the autonomous action category. In the light of the fact that many zero-cost or low-cost mitigation options have not been implemented even in the wealthy North, questions around how likely developing countries will be to undertake these actions autonomously are not unreasonable.

Tearfund believes that some developing countries will struggle to achieve actions without full incremental cost support, but that others will be able to take some appropriate actions without support. At the very least, LDCs and most SIDS will need full funding of mitigation actions, including significant capacity-building and development of enabling environments.

65 UNFCCC COP13 Decision1/CP.13 *The Bali Action Plan (2007)*

6.8 Credited NAMAs

Some have proposed that some NAMAs could generate carbon credits. This raises serious concerns about the potential for double counting of emissions (see **Section 4**). NAMAs are by their nature mitigation actions that are nationally appropriate, taken by developing countries. To allow them to count as credits towards developed country targets means that they must no longer count as developing country actions. NAMAs should therefore not generate carbon credits.

Even if the crediting issue is dealt with, Tearfund has further concerns about how the carbon market might operate – by its very nature the carbon market seeks to find the cheapest way to reduce emissions. There is a danger that offsets will use up all the low-cost mitigation options in developing countries (and count them as developed country cuts) and leave developing countries with the more expensive mitigation options. Tearfund believes that any offsets must not target the cheaper 'low-hanging fruit' mitigation options in developing countries, as these compromise developing countries' own opportunities to reduce their emissions autonomously.

6.9 MRV-supported NAMAs

Leaving aside the question of how much action should be achieved autonomously by developing countries or via carbon markets, there remains a large segment of NAMAs that will require MRV support from developed countries.

Estimates for the costs of financing mitigation actions in developing countries have varied – from an EC working paper estimate of €71 billion (\$100 billion) per annum for additional investment in forest protection, energy-related mitigation and agriculture emission reduction measures⁶⁶ to around \$200 billion (€142 billion).⁶⁷

Tearfund considers that at least \$100 billion of public money will be needed annually to support mitigation actions in developing countries from 2013 onwards.⁶⁸

There is much discussion on the role of public and private sector finance. This debate lies beyond the scope of this paper, but Tearfund believes that while private sector finance will play an important role in financing mitigation in developing countries there is a clear and definite role for substantial additional public finance on the scale outlined above. Such money will need to be raised by innovative financial mechanisms such as the auctioning of part of countries' emissions allowances and a levy on international aviation and shipping. These sources of finance would also be used to raise money for adaptation.⁶⁹

It is critical to note that the amount of finance provided by developed countries will determine the amount of action taken by developing countries: developed countries must provide additional public funding on the scale required, or global emissions reductions are unlikely to occur on the scale required in developing countries.

Finally, appropriate governance and institutional arrangements must be in place to ensure that money and technology reaches the grassroots communities in developing countries, not just to national government level. It is vital that MRV support is used to facilitate true development, and therefore consideration should be given to introducing sustainable development criteria when establishing how supported NAMAs will be measured, reported and verified.

66 European Commission Staff Working Document (January 2009) *Extensive background information and analysis accompanying the EC Communication 'Towards a comprehensive climate change agreement in Copenhagen'*

67 Pendleton A, Retallack S (March 2009) *Fairness in Global Climate Change Finance – Summary IPPR*

68 CAN International Finance Position Paper (2009) *Scale and Sources of Support for Developing Country Adaptation, Mitigation and Capacity Building*

69 Stamp Out Poverty (2009) *Assessing the Alternatives: Financing Climate Change Mitigation and Adaptation in Developing Countries*

6.10 Economy-wide or project-based NAMAs

There is a current lack of clarity about whether a NAMA is just an individual action or project, or whether it should be a more in-depth sectoral proposal or plan. The EU has proposed that all developing countries should develop Low Carbon Development Strategies (LCDS) covering each country's economy, within which different NAMAs are identified. This is a sensible idea, but should be voluntary for LDCs and SIDS, to avoid overburdening them. Short-term financing from developed countries before 2012 will be needed to fund the development of such strategies and to help identify mitigation potential in developing countries. The EC has calculated the costs of short-term finance for both mitigation and adaptation in the developing world between 2010-2012 to amount to €5–7 billion (\$7.3–10.3 billion).⁷⁰

For rapidly industrialising countries outside Annex I, such as China, Mexico, India and South Africa, which still have high levels of poverty but which have rapidly growing emissions and industrial sectors, it is important that economy-wide or sectoral plans identifying mitigation actions be developed. For less industrialised developing countries, including LDCs and SIDS, economy-wide plans could be useful as a blueprint for comprehensive low-carbon development that would help identify needs and avoid the pitfalls of rapid fossil fuel-based growth. Tearfund considers that these plans could provide an opportunity for the poorest and most vulnerable countries to address their development needs more systematically in a low carbon way. However, it is envisioned that NAMAs will be more project-based initially for poorer and more vulnerable countries.

Some countries have proposed that developing countries outline their long-term plans up to 2050 for reducing emissions. This would be useful and encourage low carbon development over the long term, but such plans should be voluntary-only for LDCs and SIDS in order to avoid too onerous a burden, given their low emissions. Such plans should also only be introduced if developed countries agree to take on zero-carbon action plans as outlined at **Section 3** above.

However, the question remains whether a bottom-up registry of NAMAs will deliver sufficiently deep or significant emissions cuts for developing countries without at the very least some kind of overall targets for developing country emissions cuts or sector-based targets in advanced economies. Such targets are currently not being considered, and proposing them has not been constructive within the negotiations, so the focus should be on ensuring that NAMA registries are robust and effective in delivering developing country mitigation actions that lead to a substantial deviation from business as usual by 2020.

6.11 Different responsibilities among developing countries

Despite the G77's strong position that no differentiation should be made between developing countries, it is clear that, for example, least developed countries such as Malawi or Nepal, and rapidly developing countries like China or South Africa, have different responsibilities when it comes to taking action. In fact, some newly industrialised countries should take on economy-wide targets as they can already be considered sufficiently developed and capable of doing so.⁷¹ Other developing countries will eventually reach a development threshold at which it will be appropriate for them to move to economy-wide targets.

Tearfund is particularly concerned that the interests of LDCs and other vulnerable countries are protected. Within the range of developing countries there are indeed different responsibilities for different types of countries, and those with higher income, GDP and levels of emissions must do more than the poorest and most vulnerable countries.

70 EC Communication (September 2009) *Stepping up international climate finance: A European blueprint for the Copenhagen deal*

71 Countries such as Qatar, Singapore, Kuwait, United Arab Emirates, Bahrain, Cyprus, Israel, South Korea, Saudi Arabia, Trinidad and Tobago, Malta and Libya are sufficiently developed to take economy-wide action.

Yet some countries, such as India, have a large and vulnerable poor population – the World Bank estimates that 42 per cent of Indians live on less than the poverty threshold of \$1.25 a day⁷² – that's 456 million people – despite being a relatively high (but low per capita) emitter. Tearfund is deeply concerned about the wellbeing of poor people living within rapidly developing economies, such as India, and believes that establishing responsibility for reducing emissions in developing countries must be fair and take account of poverty.

Any means of differentiating between developing countries should be based on the principles of equity, 'polluter pays' and sustainable development, taking account of historic responsibility and ability to act.

There are a number of proposals which deal with how emissions reductions could be allocated globally and specifically within Non-Annex I countries, including Contraction and Convergence,⁷³ Greenhouse Development Rights (GDRs),⁷⁴ the South-North Dialogue⁷⁵ and a recent proposal for a Global Mitigation and Financial Mechanism by Oxfam (See box).⁷⁶

Proposals for allocation of emissions reductions

Contraction and Convergence

The idea of Contraction and Convergence is that all countries converge on the same emissions target expressed in carbon per capita by 2030 – developed countries reduce, while developing countries can continue to grow. Many commentators have rejected Contraction and Convergence in recent years, as the changing science makes it unlikely that it can be environmentally adequate. This, coupled with the larger than expected growth from developing countries, makes it difficult to perceive a scenario where emissions could converge in a way that does not exceed safe temperature rises.

Greenhouse Development Rights

Greenhouse Development Rights establishes a Responsibility and Capability Index for all countries, including developing countries, and indicates how much responsibility they have for reducing their emissions. The index also specifies how much of developing countries' mitigation efforts should be paid for by developed countries, and how much they may be able to take autonomously.

South-North Dialogue

The South-North Dialogue attempts to group different types of developing countries into Newly Industrialised Countries (NICs) such as Saudi Arabia, Rapidly Industrialised Developing Countries (RIDCs) such as China, Other Developing Countries (ODCs) such as Bolivia and Least Developed Countries (LDCs) such as Malawi, according to their emissions and GDP. Later research by den Elzen and others attempts to calculate the emissions reductions percentage, suggesting NICs should reduce by 30 per cent on baseline by 2020, RIDCs by 16 per cent on baseline by 2020, with no targets for ODCs and LDCs. The South-North Dialogue is a helpful framework but reaches conclusions that are inconsistent, meaning that some countries are placed in inappropriate categories and face emissions cuts that are either too high or too low for their level of development.

Global Mitigation and Financial Mechanism

Oxfam has proposed a Global Mitigation and Financial Mechanism which would act to provide developing countries with support and incentives, in accordance with rich countries' responsibility for historic emissions and their ability to pay. A key feature of the proposal that Tearfund supports is the idea that finance is provided in relation to developing countries' 'available economic capability'. This would mean that countries with very low capability get the highest level of support, and countries with higher capability receive less.

72 Chen S, Ravallion M (2008) *The developing world is poorer than we thought, but no less successful in the fight against poverty* World Bank

73 Meyer A, *GCI Briefing: Contraction and Convergence*

74 Baer et al (2008), *The Right to Development in a Climate Constrained World: The Greenhouse Development Rights Framework, revised second edition*, Heinrich Böll Foundation, Christian Aid, EcoEquity and Stockholm Environment Institute

75 Climate Protection Programme South-North Dialogue on Equity in the Greenhouse (2004) *A proposal for an adequate and equitable global climate agreement*; den Elzen et al (2006) *Differentiation of countries' future commitments in a post-2012 climate regime: An assessment of the 'South-North Dialogue'*

76 Oxfam (2009) *Hang Together or Separately? How global co-operation is key to a fair and adequate climate deal at Copenhagen*

Tearfund is particularly interested in Oxfam's proposal for a Global Mitigation and Financial Mechanism, which takes account of the proposed system of NAMAs' registries and the innovative funding mechanisms that might become part of a global deal in Copenhagen, and which calculates what kind of support countries with different levels of development within Non-Annex I should receive. Oxfam calculates three categories and levels of support for mitigation action:

- LDCs, SIDS, and countries with available economic capability to take action on climate change of less than \$1,000 per person per year⁷⁷ receive 100 per cent support for the incremental costs of any emissions reduction projects, even if these do not form part of a national Low Carbon Development Strategy.
- Countries with per capita economic capability to take action on climate change greater than \$1,000 and less than \$12,000 per year receive a proportion of the incremental cost of funding for all actions within their national mitigation plans, using a sliding scale according to their respective economic capabilities.⁷⁸
- Countries with per capita capability to take action on climate change greater than \$12,000 per year are encouraged to take on economy-wide efforts to reach the emissions reduction level identified by the Mechanism as being necessary to keep warming as far below 2°C as possible.⁷⁹

Tearfund finds this model attractive because it prioritises support for the poorest and most vulnerable countries within Non-Annex I, and believes this model of categorisation would be useful when determining financial, capacity-building and technology support for MRV action within developing countries.

77 Oxfam estimates the provision of financial support 'in line with the respective capabilities of countries, measured by dividing the absolute value of a country's GNI that accrues to the population living above a per capita income threshold of \$9,000 per year, by its total population'. GNI above the development threshold is derived by estimating each country's normal log income distribution using its GNI per capita and its Gini coefficient (a measure of income inequality). Oxfam (2009) *Hang Together or Separately? How global co-operation is key to a fair and adequate climate deal at Copenhagen*

78 For a full list of these countries please see Oxfam (2009) *Hang Together or Separately? How global co-operation is key to a fair and adequate climate deal at Copenhagen*.

79 These countries are Qatar, Singapore, Kuwait, United Arab Emirates, Bahrain, Cyprus, Israel, South Korea, Saudi Arabia, Trinidad and Tobago, Malta, Libya.

7 A new model for development

Countries such as Bolivia and India have recently spoken out strongly on the issue of historic responsibility and atmospheric rights. Their position is that developed countries carry most responsibility for historic emissions and have used more atmospheric space than they are entitled to, leaving little space for developing countries to develop.

Tearfund cannot fault this argument on justice grounds, but does not support the logical outworking, that all developing countries have the right to the same atmospheric space as developed countries. This would result in almost total environmental destruction and runaway global warming with devastating consequences for the world's poorest and most vulnerable people.

Rather, we would argue that developed countries have substantially exceeded their atmospheric rights historically and that the balance would be restored by developed countries taking on the attendant responsibility. But 'an eye for an eye' leaves everybody blind.

Tearfund acknowledges that developed countries have used more atmospheric space than they are entitled to, but also believes that the best way around this is to require them to provide enough assistance to others to help them develop in an alternative way, rather than for others also to use an unsustainable amount of atmospheric space. High-carbon industrialisation, with the aim of becoming a high-consumption materialistic society such as the UK, is not the only route to development.

It is difficult to avoid sounding patronising and paternalistic when discussing this issue – many take the position that every person has the right to the same standard of living and way of life as the average UK or US citizen. However, apart from the fact that there are not enough planets to sustain this, from a biblical perspective many aspects of the way we live in the North are not desirable – it leads to a selfish, materialistic, individualistic way of life that diminishes the place of God and spiritual things, as well as the role of family, community and God's creation.

This is in no way saying that there are advantages to being poor, or that we should not be seeking to transform poor communities physically and spiritually. Wealth and development bring many benefits, and all nations have a unique combination of traits that will define what kind of country they become as they develop. Not all cultures will make the choices that we have made. Tearfund is a development agency that seeks to enable communities to develop, and has no wish to stunt development or leave people stranded in poverty.

However, ultimately a biblical way of living is one that shows love for God, love for our neighbour and love for God's creation. Rapid industrialisation that destroys the planet and harms its most vulnerable inhabitants breaches these principles. If we believe that the way we have developed and now live is wrong and unsustainable, then we should not be advocating the same pathway for others.

We must also address inequalities and overconsumption in the North. We cannot contemplate the idea that making emissions reductions on the scale necessary can be done painlessly and without significant shifts in the way we live. Tearfund does not advocate a return to some pre-industrial simple life – but living in a way that consumes most of the world's food, energy, water and other natural resources is ultimately totally unsustainable even without the challenge of climate change.

8 Conclusions and recommendations

8.1 Conclusions

The challenge of global climate change requires that large-scale and rapid emissions cuts be enshrined in a post-2012 global climate deal and in countries' domestic legislation. Emissions must peak in 2015 and start to decline, and tough mid-term targets for developed countries amounting to at least 40 per cent cuts on 1990 levels by 2020 are needed in developed countries to drive down emissions. Developing countries will also need to reduce their emissions by at least 15–30 per cent on business as usual by 2020, but this will be dependent on the financial, technological and capacity-building support they receive from developed countries.

In the long term, global emissions must be reduced by at least 85 per cent on 1990 levels by 2050, with developed countries cutting their emissions by at least 95 per cent on 1990 levels by 2050.

Developed countries, which are most responsible for climate change and which have most capacity to act, must bear the brunt of reductions, but developing countries, particularly rapidly industrialising developing countries, will also need to make cuts supported by finance, technology and capacity-building from developed countries.

This is an enormous challenge, but it is also an opportunity to choose a different development pathway in both the North and the South. Cleaner ways of generating energy and providing transport have many benefits for people and the planet. We have a unique window of opportunity in which to break away from the destructive development patterns of the past. The current climate negotiations are a critical point: the outcomes will have repercussions for not just the next decade, but potentially the whole of this century. They will determine whether or not we rise to, or are defeated by, the challenge of climate change.

8.2 Recommendations

To ensure a comprehensive, equitable, science-based post-2012 framework, the Copenhagen deal must contain the following:

A shared vision that keeps global warming below two degrees

- The shared vision must cover all elements of the Bali Action Plan: mitigation, adaptation, finance and technology transfer.
- The shared vision must be aimed at keeping average global temperature rise well below two degrees but must explicitly state the elements required to achieve this, including a long-term global goal, a long-term goal for developed country emissions reductions, a mid-term goal for developed countries to reduce emissions, a stated peak year, and an agreed stabilisation level for greenhouse gases in the atmosphere.
- The global goal for reducing emissions should be to cut emissions by at least 85 per cent on 1990 levels by 2050.
- Developed countries should commit to reducing their emissions by at least 95 per cent on 1990 levels by 2050, and by at least 40 per cent on 1990 levels by 2020.
- The shared vision should commit to keeping average global temperature rise as far below two degrees (on pre-industrial levels) as possible, with a peak in global emissions by 2015, aiming to stabilise emissions in the atmosphere at no more than 350ppm CO₂ (around 400ppm CO₂e).

Developed countries taking the lead with tough and binding emissions cuts

- All developed countries must commit to extremely ambitious domestic targets in line with scientific imperative, and respecting the principles of equity. This should amount to an aggregate target of at least 40 per cent cuts on 1990 levels by 2020 in the shape of Quantified Emissions Reductions Commitments (QERCs) – economy-wide, legally binding targets. These reductions must be fairly shared between countries according to responsibility and capacity to act.
- Five-year commitment periods for emissions reductions in developed countries should be maintained, with a scientific review scheduled for no later than 2015 to ensure adequacy of targets.
- Developed countries must reduce their emissions by at least 95 per cent on 1990 levels by 2050, and should develop zero-carbon action plans showing how they will achieve this.
- Offsets must be limited to – at the very most – a quarter of any emissions reduction target of 40 per cent or more below 1990 levels by 2020.⁸⁰

Means to reduce emissions from international aviation and shipping

- Targets for reducing emissions from international aviation and shipping should be set, along with principles for participation and timelines for adopting measures. This could be in the shape of a levy or an emissions trading scheme, which should be designed to raise substantial climate finance for developing countries, while avoiding adverse impacts on such countries.

A reformed carbon market or no-carbon market

- Cap and trade systems such as the EU Emissions Trading Scheme (EU-ETS) must introduce stringent and ambitious caps, serious restrictions on offsetting via the Clean Development Mechanism (CDM), tougher rules on banking and borrowing, and wholesale auctioning of emissions permits to industry.
- The current CDM has no place in a post-2012 climate regime. It, or any replacement mechanism, must ensure that emissions cuts made are genuinely additional and comply with sustainable development criteria.
- Reformed offset schemes must not use existing mitigation actions by developing countries to generate carbon credits, and they must be designed to avoid taking up the lowest-cost mitigation options in developing countries which should count toward developing countries' own contribution.
- If the above reforms are not introduced, carbon markets are likely to fail to reduce global emissions or bring about sustainable low-carbon development in the South. In this case, the carbon market experiment should be abandoned rather than continuing to be institutionalised in a climate deal.

Necessary finance, capacity-building and technology from developed countries to enable developing countries to reduce their emissions and develop sustainably

- Developed countries should take on a dual target of tough emissions reductions at home and an obligation to finance emissions reductions (and adaptation) in the developing world.
- For the EU this means a target of at least 40 per cent emissions reductions on 1990 levels by 2020 and a funding obligation for mitigation and adaptation of at least €35 billion (\$50 billion) a year.⁸¹
- Developed countries must provide overall measurable, reportable and verifiable (MRV) finance of at least US\$100 billion a year from 2013 onwards in additional public financing to developing countries to support their mitigation actions. This money is in addition to the public funding of at least \$50 billion a year which is needed urgently for adaptation in developing countries.⁸²

80 Any target lower than 40% cuts on 1990 levels by 2020 proposed by a developed country must be reached without the use of offsets.

81 UK NGOs' Joint Position on the EC Communication (February 2009) *Towards a comprehensive climate change agreement in Copenhagen*; CAN Europe (March 2009) *Explanation of Current NGO Estimates on Total Financing Needs in Developing Countries and the EU's Fair Share as given in joint NGO letters to EU Heads of State and Government*

82 CAN International Finance Position Paper (2009) *Scale and Sources of Support for Developing Country Adaptation, Mitigation and Capacity Building*; Oxfam (2007) *Adapting to climate change: What's needed in poor countries, and who should pay*

No double counting of emissions reductions and finance

- Double counting of emissions reductions and finance must be clearly prohibited in any agreement. If a developed country purchases offsets in the developing world, these offsets should only count towards the achievement of the developed countries' emissions reductions targets. It must not be counted as developed country financing obligations. It must not be counted as developing country emissions reductions.

A clean development pathway for developing countries, with financial and technological support from developed countries

- Developing countries as a group will need to reduce their emissions by at least 15–30 per cent on business as usual⁸³ by 2020 – but this must be supported with finance, technology and capacity-building from developed countries. This responsibility for reducing emissions will vary for developing countries according to their respective responsibilities and capabilities.
- Developed countries must recognise the existing efforts by developing countries to reduce their emissions without support from developed countries, many of which dwarf efforts by developed countries. Developed countries must not attempt to convert these actions into carbon credits: developing countries' Nationally Appropriate Mitigation Actions (NAMAs)⁸⁴ should not generate carbon credits.
- A NAMAs registry should be established, so that developing countries can register MRV actions and receive MRV support.
- Developing countries, with the exception of Least Developed Countries (LDCs) and Small Island Developing States (SIDS), for which this should be voluntary, should develop Low Carbon Development Strategies that are economy-wide and which identify NAMAs. They should also develop long-term low-carbon plans up to 2050, as long as developed countries develop zero carbon action plans. In order to prepare these plans, developing countries must receive appropriate near-term financing and capacity building support.
- Some newly industrialised countries, such as South Korea, Singapore and Saudi Arabia, should take on economy-wide emissions limitations commitments in the next commitment period, and should not be eligible for financial support from developed countries.⁸⁵
- LDCs and SIDS and other vulnerable countries with an economic capability to take action on climate change of less than \$1,000 per person per year should receive full support for the incremental costs of any emissions reduction projects.⁸⁶
- Countries with a per capita economic capability to take action on climate change of between \$1,000 and \$12,000 per year should receive support for emissions reduction projects developed as part of an economy-wide plan on a sliding scale according to their capacity.⁸⁷

83 Reductions on business as usual differ from reductions made on a firm baseline such as 1990. Emissions will rise very fast if rapidly developing countries continue their current projected patterns of growth, so making reductions on business as usual is an attempt to slow the growth of emissions on what they might be, rather than an attempt to reduce below a specific level. It is thus more difficult to define.

84 The Bali Action Plan proposed that developing countries consider taking on 'nationally appropriate mitigation actions' now often referred to as NAMAs.

85 These countries are Qatar, Singapore, Kuwait, United Arab Emirates, Bahrain, Cyprus, Israel, South Korea, Saudi Arabia, Trinidad and Tobago, Malta, Libya

86 Oxfam (2009) *Hang Together or Separately? How global co-operation is key to a fair and adequate climate deal at Copenhagen*

87 Oxfam (2009) *ibid*



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